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Bid Contact	Dee Daniels ddaniels@hall-markfire.com Ph 352-629-6305		Address 725 SW 46th Ave Ocala, FL 34474					
Item #	Line Item	Notes		Unit Price	Qty/Unit		Attch.	Docs
'I-16-01-∙01• 0	1 Fire Engine / Pumper Truck Cost	Supplier Product Code: Confirm Supplier Notes: Typhoon/Rescue Pumper 42-56	First Offer -	\$468,480.00	1 / each	\$468,480.00	Υ	Υ
- 16-0101- 0	2 Pre-Payment Discount Option	Supplier Product Code: Confirm Supplier Notes: Pre- Payment in Required 30 Days after Reciept of PO.	First Offer -	(\$13,114.00)	1 / each	(\$13,114.00)	Y	Y
-16-0101- 0	3 Trade-In Value Option for a: 1997 E-One Hush XLT (VIN # 4ENBAAA81V1007640)	Supplier Product Code: Confirm	First Offer	- (\$5,500.00)	1 / each	(\$5,500.00)	Y	Y
-16-0101- 0	4 Proposed Equipment (Fire Engine/Pumper Truck Year, Make and	Supplier Product Code:		First Offer -	1 / each			Y

FI-16	-01
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	Model)					
FI-16-0101- 05	Maintenance Shop Name and Location	Supplier Product Code:	First Offer -	1 / each		Y
FI-16-0101- 06	Number of Calendar Days to Complete and Furnish the Fire Engine / Pumper Truck	Supplier Product Code:	First Offer -	1 / each		Y
				Supplier Total	\$449,866.00	

Hall-Mark RTC

Item: Fire Engine / Pumper Truck Cost

Attachments

PEMBROKE PINES DETAILED SPEC Q-80703 REV-68.pdf

PEMBROKE PINES LINE ITEM Q-80703 REV-68.pdf

Q80703A Pembroke Pines Driver Side.pdf

Q80703A Pembroke Pines Officer Side.pdf

Customer: PEMBROKE PINES FIRE RESCUE

TESTING COMPLIANCE STANDARD

Hose Bed Capacity

Hosebed hoseload allowance on the apparatus shall be 1200 lbs.

Overall Height Restriction

The apparatus shall have no overall height restrictions.

Overall Length Restriction

The unit has no overall length restrictions.

NFPA Compliance

The E-ONE supplied components of the apparatus shall be compliant with NFPA 1901, 2016 edition.

Equipment Capacity

Equipment allowance on the apparatus shall be 2500 lbs. This allowance is in addition to the weight of the hoses and ground ladders listed in the shop order as applicable.

BUMPERS

Bumper Extension

The bumper extension shall be approximately 24" from the face of the cab as required.

Bumper Gravel Shield

The extended front bumper gravel shield shall be made of 3/16" (.375") aluminum treadplate material.

Bumper

A heavy duty 10" high steel channel type front bumper shall be provided. The front corners of the bumper shall be angled at 45 degrees to reduce swing clearance. The driver side of the bumper shall have a notch to allow room for a flush mounted Q2B siren.

The bumper shall be painted job color.

BUMPER TRAYS

Bumper Tray - Center

A hose tray constructed of 1/8" aluminum shall be recessed into the front bumper extension. The tray shall be located in the center of the bumper and be approximately 14" deep (13" to the top of the slats). One inch thick aluminum slats shall be included in the bottom of the hose tray to aid in the dissipation of water from the tray.

Lid, Bumper Hose Tray

The center bumper tray shall have a diamond plate lid. The lid shall be hinged and shall be secured in the closed position by a D-Ring latch and held open with a pneumatic shock.

FRAME ASSEMBLY

Rear Underbody Support Frame

The body shall be supported at the rear by a steel frame extension bolted to the chassis frame rails. The frame rails and frame extension shall be isolated from the aluminum body extrusions by 5/16° x 2° fiber reinforced rubber.

The frame extension shall be built with (2) 2.5" sq. x .25 wall thickness x full width cross rails welded to (2) 2.5" sq. x .25 wall thickness side rails. The frame extension assembly will be welded to steel weldments, which are secured to the chassis frame with grade 8 5/8" bolts.

The frame extension shall not interfere with N.F.P.A. minimum requirements for angle of departure.

Frame Assembly

The frame shall consist of two (2) C-channel frame rails with heavy-duty cross-members. Each frame rail shall have the following minimum specifications in order to minimize frame deflection under load and thereby improve vehicle ride and extend the life of the frame:

Dimensions: 10-1/4" x 3-1/2" x 3/8"

Material: 110,000-psi minimum yield strength, high strength, low alloy steel

Section Modulus: 16.61 cu. in.

Resistance to Bending Moment (RBM): 1,827,045 in. lbs.

If larger rails are provided, the maximum height of each frame rail shall not exceed the 10-1/4" dimension by more than 1/2" in order to ensure the lowest possible body height for ease of access as well as the lowest possible vehicle center of gravity for maximum stability.

There shall be a minimum of six (6) cross-members joining the two (2) frame rails in order to make the frame rigid and hold the rails/liners in alignment. The cross-members shall be a combination of a formed steel C-channel design along with heavy duty steel fabricated designs as required for the exact chassis configuration. The cross-members shall be attached to the frame rails with not less than four (4) bolts at each end arranged in a bolt pattern to adequately distribute the cross-member load into the rail/liner and minimize stress concentrations.

All frame fasteners shall be high-strength Grade 8, flanged-head threaded bolts and nuts for frame strength, durability, and ease of repair. The nuts shall be Stover locknuts to help prevent loosening. The frame fasteners shall be tightened to the proper torque at the time of assembly.

The frame rails shall be zinc plated (galvanized) and powder coated for improved corrosion resistance. The galvanization shall be a minimum of 4 mils thick and done in accordance with ASTM A123. The powder coat shall be 6.5 mils thick (+/- 1.5 mils) and pass ASTM D3359 testing.

The frame cross-members and frame mounted components (suspensions, axles, air tanks, battery boxes, fuel tank, etc.) shall be painted black.

The apparatus manufacturer shall supply a full lifetime frame warranty including cross-members against defects in materials or workmanship. Warranties that provide a lifetime warranty for only the frame rails, but not the cross-members, are not acceptable. NO EXCEPTIONS.

The custom chassis frame shall have a WHEEL ALIGNMENT in order to achieve maximum vehicle road performance and to promote long tire life. The alignment shall conform to the manufacturer's internal specifications. All wheel lug nuts and axle U-bolt retainer nuts shall be tightened to the proper torque at the time of alignment. The wheel alignment documentation shall be made available at delivery upon request.

Frame Liner

A 9-3/8" x 3-1/8" x 3/8" channel frame liner shall be bolted to each frame rail for added strength and rigidity. Frame liners shall be made of 110,000 psi minimum yield, high strength, low alloy steel. The frame rails shall be zinc plated (galvanized) and powder coated for improved corrosion resistance. The galvanization shall be a minimum of 4 mils thick and done in accordance with ASTM A123. The powder coat shall be 6.5 mils thick (+/- 1.5 mils) and pass ASTM D3359 testing.

Each frame rail with liner shall have the following minimum characteristics:

Section Modulus: 28.74 cu. in.

RBM: 3,161,400 in. lbs.

The frame liners shall be inserted inside the open portion of the frame rails and shall run continuously from the rear of the frame to the centerline of the front axle to provide maximum frame strength at all critical load points.

AXLE OPTIONS

Front Axle

The vehicle shall utilize an ArvinMeritor FL-941 front axle with a rated capacity of 18,700 lbs. It shall have "easy steer" knuckle pin bushings and 68.5" kingpin centers. The axle shall be of I-beam construction and utilize grease-lubricated wheel bearings. The vehicle shall have a nominal cramp angle of 45 degrees, plus two (+ 2) degrees to minus three (- 3) degrees including front suction applications.

The front axle hubs shall be made from ductile iron and shall be designed for use with 10 hole hub-piloted wheels in order to improve wheel centering and extend tire life.

The front springs shall be parabolic tapered, minimum 4" wide x 54" long (flat), minimum 3 leaf, progressive rate with bronze bushings and a capacity of 20,000 lbs. at the ground.

Tapered leaf springs provide a 20% ride improvement over standard straight spring systems. Supporting documentation/data shall be provided upon request.

The vehicle shall be equipped with a Sheppard model M-110 power steering gear, used in conjunction with a power assist cylinder. The steering assembly shall be rated to statically steer up to a maximum front axle load of 18,700 lbs. Relief stops shall be provided to reduce system pressure upon full wheel cut. The system shall operate mechanically should the hydraulic system fail.

A 2-year/unlimited miles parts and 2-year labor axle warranty shall be provided as standard by ArvinMeritor Automotive.

In order to achieve maximum vehicle road performance and to promote long tire life, there shall be a wheel alignment. The alignment shall conform to the manufacturer's internal specifications. All wheel lug nuts and axle U-bolt retainer nuts shall be tightened to the proper torque at the time of alignment. The wheel alignment documentation shall be made available at delivery.

Shock Absorbers Front

Koni model 90 shock absorbers shall be provided for the front axle. The shocks shall be three way adjustable.

The shocks shall be covered by the manufacturer's standard warranty.

Front Axle Spiral Pins

The front suspension springs shall utilize Kaiser spring eyes/shackle pins. The pins shall be of the "grease grooved" design. Spiral steer spring eye bushings, with integral grease seals, shall be provided.

Rear Axle

The vehicle shall be equipped with an ArvinMeritor RS-25-160 single rear axle with singlereduction hypoid gearing and a manufacturer's rated capacity of 27,000 lbs. The axle shall be equipped with oil-lubricated wheel bearings with ArvinMeritor oil seals.

The rear axle hubs shall be made from ductile iron and shall be designed for use with 10 hole hub-piloted wheels to improve wheel centering and extend tire life.

A 2-year/unlimited miles parts and 2-year labor rear axle warranty shall be provided as standard by ArvinMeritor Automotive.

Shock Absorbers, Rear

There shall be Koni model 90 shock absorbers provided, one (1) at each wheel position. In the case of a tandem rear axle application the shocks shall be mounted to the rear/rear axle.

The shocks shall be covered by the manufacturer's standard warranty.

SUSPENSIONS

Rear Suspension

The rear suspension shall be a pair of linear-rate leaf springs with auxiliary "helper" leaf springs and bronze bushings. The variable-rate springs with auxiliary springs ensure that the vehicle rides and handles smoothly under both loaded and unloaded conditions. The suspension shall be rated for the maximum axle capacity.

WHEEL OPTIONS

Front Wheels

The vehicle shall have two (2) polished (on outer wheel surfaces only) Alcoa aluminum disc wheels. They shall be forged from one-piece corrosion-resistant aluminum alloy and sized appropriately for the tires.

Front Wheel Trim Package

The front wheels shall have stainless steel lug nut covers (for use with aluminum wheels) or chrome plated plastic (for use with steel wheels). The front axle shall be covered with American made Real Wheels brand mirror finish, 304L grade, non-corrosive stainless steel universal baby moons. All stainless steel baby moons shall carry a lifetime warranty plus a 2 year re-buffing policy. There shall be two (2) baby moons and twenty (20) lug nut covers.

Rear Wheels

The vehicle shall have four (4) polished (on outer wheel surfaces only) Alcoa aluminum disc wheels. They shall be forged from one-piece corrosion-resistant aluminum alloy and sized appropriately for the tires.

Rear Wheel Trim Package, Single Axle

The rear wheels shall have stainless steel lug nut covers (chrome plated steel lug nut covers not acceptable), or American made chrome plated plastic lug nut covers. The rear axle shall be covered with American made Real Wheels brand mirror finish, 304L grade, non-corrosive stainless steel, spring clip band mount high hats, DOT user friendly. All stainless steel high hats shall carry a lifetime warranty plus a 2 year re-buffing policy. There shall be two (2) high hats and twenty (20) lug nut covers.

TIRE OPTIONS

Rear Tires

Rear tires shall be Goodyear 12R22.5 tubeless type "H" range radial tires with G661 HSA highway tread.

Tires with wheels shall have the following weight capacity:

Rear Rating - 27,000# (dual) @ 75 MPH

Wheel and tire shall conform to the Tire and Rim Association requirements.

Front Tires

The front tires shall be Goodyear 385/65R22.5 tubeless type "J" range radial tires with G296 MSA highway tread.

The tires with wheels shall have the following weight capacity:

Max front rating - 20,050 @ 68 MPH (intermittent fire service rating if GAW is over 18,740)

The wheels and tires shall conform to the Tire and Rim Association requirements.

Tire Pressure Indicators

The apparatus shall be provided with Real Wheels AirGuard LED tire pressure indicating valve stem caps. When the tire is under inflated by 5-10 PSI, the LED indicator on the cap shall flash red. The indicator housings shall be shock resistant and constructed from polished stainless steel. The indicators shall be calibrated by attaching to valve stem of a tire at proper air pressure per load ratings and easily re-calibrated by simply removing and re-installing them during service.

Real Wheel Part number RWC1234 was superseded by RWC1235 as of June 2015

BRAKE SYSTEMS

Front Brakes

The front axle shall be equipped with Meritor DiscPlus EX225H 17 inch disc brakes.

The brakes shall be covered by the manufacturer`s standard warranty which is three years, unlimited mileage and parts only.

Rear Brakes

The rear axle shall be equipped with ArvinMeritor 16-1/2" x 7" S-cam brakes with cast brake drums. Q-Plus shoes shall be provided with up to 24,000 lb. axle ratings and P-Type shoes with over 24,000 lb. axle ratings.

The rear axle brakes shall be furnished with automatic slack adjusters. ArvinMeritor brand shall be supplied on RS-24-160 and RS-25-160 axles, and Haldex brand shall be supplied on RS-26-185 and RS-30-185 axles.

A 3 year/unlimited miles parts and 3 year labor rear brake warranty shall be provided as standard by ArvinMeritor Automotive. The warranty shall include bushings, seals, and cams.

Brake System

The vehicle shall be equipped with air-operated brakes and an anti-lock braking system (ABS). The brake system shall meet or exceed the design and performance requirements of the current Federal Motor Vehicle Safety Standard (FMVSS)-121, and the test requirements of the current NFPA 1901 Standard.

A dual-treadle brake valve shall correctly proportion the braking power between the front and rear systems. The air system shall be provided with a rapid pressure build-up feature, designed to meet current NFPA 1901 requirements, to allow the vehicle to begin its emergency response as quickly as possible.

A pressure-protection valve shall be installed to prevent use of the air horns or other air-operated devices should the air system pressure drop below 85 psi. This feature is designed to prevent inadvertent actuation of the emergency/parking brakes while the vehicle is in motion.

Two (2) air pressure needle gauges, one (1) each for front and rear air pressure, with a warning light and buzzer shall be installed at the driver's instrument panel.

The braking system shall be provided with a minimum of three (3) air tank reservoirs for a total air system capacity of 5,214 cu. in. One (1) reservoir shall serve as the wet tank and a minimum of one (1) tank shall be supplied for each of the front and rear axles. The total system shall carry a sufficient volume of air to comply with FMVSS-121.

Tank Capacities in Cubic Inches:

Wet	Front	Rear	Total
1,738	1,738	1,738	5,214

Spring-actuated emergency/parking brakes shall be installed on the rear axle.

A Bendix-Westinghouse SR-1 valve, in conjunction with a double check valve system, shall provide automatic emergency brake application when the air brake system pressure falls below 40 psi in order to safely bring the vehicle to a stop in case of an accidental loss of braking system air pressure.

A four-channel Wabco ABS shall be provided to improve vehicle stability and control by reducing wheel lock-up during braking. This braking system shall be fitted to both front and rear axles. All electrical connections shall be environmentally-sealed for protection against water, weather, and vibration.

The system shall constantly monitor wheel behavior during braking. Sensors on each wheel transmit wheel speed data to an electronic processor, which shall detect approaching wheel lock-up and instantly modulate (or pump) the brake pressure up to five (5) times per second to prevent wheel lock-up. Each wheel shall be individually controlled. To improve field performance, the system shall be equipped with a dual-circuit design configured in a diagonal pattern. Should a malfunction occur in one circuit, that circuit shall revert to normal braking action. A warning light at the driver's instrument panel shall signal a malfunction.

The system shall also be configured to work in conjunction with all auxiliary engine, exhaust, or driveline brakes to prevent wheel lock-up.

To improve maintenance troubleshooting, provisions in the system for an optional diagnostic tester shall be provided. The system shall test itself each time the vehicle is started, and a dash-mounted light shall go out once the vehicle is moving above 4 MPH.

A 3 year/300,000 mile parts and labor Anti-Locking Braking System (ABS) warranty shall be provided as standard by Meritor Automotive.

Park Brake Release

One (1) Bendix-Westinghouse PP-5 parking brake control valve shall be supplied on the lower dash panel within easy reach of the driver.

Electronic Stability Control

The apparatus shall be equipped with a G4 4S4M Electronic Stability Control (ESC) system that combines the functions of Roll Stability Control (RSC) with the added capability of yaw - or rotational – sensing.

RSC focuses on the vehicle's center of gravity and the lateral acceleration limit or rollover threshold. When critical lateral acceleration thresholds are exceeded, RSC intervenes to regulate the vehicle's deceleration functions. The added feature of ESC is to automatically intervene to reduce the risk of the vehicle rotating while in a curve or taking evasive action, prevents drift out through selective braking, and controlling and reducing vehicle speed when lateral acceleration limits are about to be exceeded.

Intervention by the system occurs in three forms - engine, retarder and brake control. The ESC system uses several sensors to monitor the vehicle. These include a steering wheel angle sensor, lateral accelerometer, and yaw position sensor. ESC constantly monitors driving conditions and intervenes if critical lateral acceleration is detected or if the vehicle begins to spin due to low friction surfaces. The system provides control of engine and retarder torque as well as automatically controlling individual wheels to counteract both over steer and under steer.

To further improve vehicle drive characteristics, the unit shall be fitted with Automatic Traction Control (ATC). This system shall control drive wheel slip during acceleration from a resting point. An extra solenoid valve shall be added to the ABS system. The system shall control the engine and brakes to improve acceleration slip resistance. The system shall have a dash mounted light that shall come on when ATC is controlling drive wheel slip.

3 year/300,000 miles parts and labor warranties for ESC, RSC, and ATC shall be provided as standard by Meritor Automotive.

AIR SYSTEM OPTIONS

Air Dryer

The chassis air system shall be equipped with a Bendix-Westinghouse AD-9 air dryer to remove moisture from the air in order to help prevent the air lines from freezing in cold weather and prolong the life of the braking system components.

Air Inlet

A 1/4" brass quick-release air inlet with a male connection shall be provided. The inlet shall allow a shoreline air hose to be connected to the vehicle, discharging air directly into the wet tank of the air brake system. It shall be located driver door jamb.

Heated Moisture Ejectors

All air reservoirs shall be equipped with a Bendix DV-2 automatic reservoir drain valve which shall automatically eject moisture and contaminants from the reservoirs. The moisture ejectors shall be heated.

Air Lines

Wire braided air hose with oil and scuff resistant cover shall be supplied for all undercarriage hoses. The hose shall have a working temperature range of -55 degrees Fahrenheit to 250 degrees Fahrenheit.

Air Horns

Dual air horns shall be provided, connected to the chassis air system. The horns shall be mounted through the front bumper. The front bumper shall have two (2) holes punched to accommodate the air horns. A pressure protection valve shall be installed to prevent the air brake system from being depleted of air pressure.

ENGINES & TRANSMISSIONS

Transmission Selector

A push-button transmission shift module, Allison model 29538373, shall be located to the right side of the steering column within easy reach of the driver. The shift position indicator shall be indirectly lit for after dark operation. The shift module shall have a "Do Not Shift" light and a "Service" indicator light. The shift module shall have means to enter a diagnostic mode and display diagnostic data including oil life monitor, filter life monitor, transmission health monitor and fluid level. A transmission temperature gauge with warning light and buzzer shall be installed on the cab instrument panel.

Transmission Fluid

The transmission fluid shall be TransSynd synthetic.

Vehicle Speed

The maximum speed shall be electronic limited to 68 MPH as required by NFPA 1901.

Note: Maximum speed may be set at 65 MPH due to tire rating.

Engine/Transmission Package

Engine

The vehicle shall utilize a Cummins ISL electronic engine as described below:

- 450 gross bhp at 2200 rpm
- 1250 lb.-ft. peak torque at 1400 rpm
- Six (6)-cylinder, charge air cooled, 4-cycle diesel
- 543 cu. in. displacement -- 4.49 in bore x 5.69 in stroke (8.9 liters)
- 16.6:1 compression ratio
- Interact System Controlled Viable Geometry Turbocharged
- Engine shall be equipped with Full-Authority Electronics
- Electronic Timing Control fuel system
- Fuel cooler (when equipped with a fire pump)
- Fleetguard FS1022 fuel filter with integral water separator and water-in-fuel sensor approved by Cummins for use on the ISL engine
- Fleetguard LF9009 Venturi Combo combination full-flow/by-pass oil filter approved by Cummins for use on the ISL engine
- Engine lubrication system, including filter, shall have a minimum capacity of 25 quarts
- Delco-Remy 39 MT-HD 12-volt starter
- Cummins 18.7 cubic foot per minute (cfm) air compressor
- Corrosion inhibitor additive for coolant system
- After treatment system consisting of a oxidation catalyst and diesel particulate filter and selective catalyist reduction system
- Ember separator compliant with current NFPA 1901 standard
- The engine shall be compliant with 2016 EPA Emission standards
- Reference curve FR93434EV for ISCAAN

The engine air intake shall draw air through the front cab grill. The intake opening shall be located on the officer (right) side behind front cab face with a plenum that directs air to the air filter. The air cleaner shall be a 11" diameter dry type that is easily accessed for service. Air cleaner intake piping shall be made from aluminized steel tubing with flexible rubber hoses. Air cleaner intake piping clamps shall be heavy-duty, constant-torque, T-bolt clamps to ensure proper sealing under all temperatures in order to keep dust and other contaminants out of the engine intake air stream and protect the engine.

The engine exhaust piping shall be a minimum of 4" diameter welded aluminized steel tubing. The muffler shall be mounted horizontally under the right-hand frame rail in back of the cab in order to minimize heat transmission to the cab and its occupants. The exhaust shall be directed away from the vehicle on the right side ahead of the rear wheels in order to keep exhaust fumes as far away as possible from the cab and pump operator position.

A 5-year/100,000-miles parts and labor warranty shall be provided as standard by Cummins.

A copy of the Engine Installation Review stating the engine installation meets Cummins recommendations shall be provided as requested. The engine installation shall not require the operation of any type of "power-down" feature to meet engine installation tests.

Transmission

The vehicle shall utilize an Allison EVS3000P, electronic, 5-speed automatic transmission.

A push button shift module shall be located right side of the steering column, within easy reach of the driver. The shift position indicator shall be indirectly lit for after-dark operation. The shift module shall have a "Do Not Shift" light and a "Service" indicator light that are clearly visible to the driver. The shift module shall have means to enter a diagnostic mode and display diagnostic data.

A transmission oil temperature gauge with warning light and buzzer shall be installed on the cab instrument panel to warn the driver of high oil temperatures that may damage the transmission.

The transmission shall have a gross input torque rating of 1250 lb.-ft. and a gross input power rating of 450 HP.

The gear ratios shall be as follows:

- 1 3.49 2 - 1.86 3 - 1.41 4 - 1.00 5 - .75
- R 5.03

The transmission shall have an oil capacity of 23 quarts and shall be equipped with a fluid level sensor (FLS) system, providing direct feedback of transmission oil level information to the driver.

A water-to-oil transmission oil cooler shall be provided to ensure proper cooling of the transmission when the vehicle is stationary (no air flow). Air-to-oil transmission oil coolers, which require constant air flow, are not acceptable.

The transmission shall be provided with two (2) engine-driven PTO openings located at the 4 o`clock and 8 o`clock positions for flexibility in installing pto-driven equipment.

The automatic transmission shall be equipped with a power lock-up device. The transmission lock-up shall prevent down shifting of the transmission when the engine speed is decreased during pump operations, thereby maintaining a constant gear ratio for safe operation of the pump. The transmission lock-up shall be automatically activated when the pump is engaged in gear. The transmission lock-up shall be automatically deactivated when the pump is disengaged for normal road operation.

A 5-year/unlimited miles parts and labor warranty shall be provided as standard by Allison Transmission.

Automatic Shift to Nuetral

The transmission shall be programmed to comply with NFPA 1901 and automatically shift to neutral upon application of the parking brake.

SECONDARY BRAKING

Jacobs Engine Brake

One (1) Jacobs engine brake shall be installed to assist in slowing and controlling the vehicle as required by NFPA 1901 for vehicles with gross vehicle weight ratings (GVWR) of 36,000 lbs. or greater. An on-off control switch and a high-medium-low selector switch shall be mounted in the cab accessible to the driver.

When activated, the Jacobs engine brake shall cut off the flow of fuel to the cylinders and alter the timing of the exhaust valves. This shall transform the engine into a high-pressure air compressor, driven by the wheels, and the horsepower absorbed by the engine in this mode shall slow the vehicle. The selector switch allows the driver to select the amount of retarding power.

When the on-off switch is in the "on" position, the engine brake shall be automatically applied whenever the accelerator is in the idle position and the automatic transmission is in the lock-up mode. If the accelerator is depressed or if the on-off switch is placed in the "off" position, the engine brake shall immediately release and allow the engine to return to its normal function.

Transmission Programming

The transmission shall include the Allison 2nd gear Pre-Select feature. This option will direct the transmission to down shift to second gear when the throttle is released and the Jacobs engine brake (or Telma retarder wired to activate with release of throttle) is engaged. This feature is designed to increase brake life and aid vehicle braking.

COOLING PACKAGE

Engine Cooling Package

Radiator

The cooling system shall include an aluminum tube-and-fin radiator with a minimum of 1,408 total square inches of frontal area to ensure adequate cooling under all operating conditions. There shall be a drain valve in the bottom tank to allow the radiator to be serviced. A sight glass shall be included for quick fluid level assessment. The radiator shall be installed at the prescribed angle in order to achieve the maximum operational effectiveness. This shall be accomplished according to established work instructions and properly calibrated angle measurement equipment.

Silicone Hoses

All radiator and heater hoses shall be silicone. Pressure compensating band clamps shall be used to eliminate hose pinching on all hoses 3/4" diameter and larger. All radiator hoses shall be routed, loomed, and secured so as to provide maximum protection from chafing, crushing, or contact with other moving parts.

Coolant

The cooling system shall be filled with a 50/50 mixture of water and antifreeze/coolant conditioner to provide freezing protection to minus 40 (- 40) degrees F for operation in severe winter temperatures.

Coolant Recovery

There shall be a coolant overflow recovery system provided.

Charge Air Cooler System

The system shall include a charge air cooler to ensure adequate cooling of the turbocharged air for proper engine operation and maximum performance.

Charge Air Cooler Hoses

Charge air cooler hoses shall be made from high-temperature, wire-reinforced silicone to withstand the extremely high temperatures and pressures of the turbocharged air. The hoses shall incorporate a flexible hump section to allow motion and misalignment of the engine relative to the charge air cooler. Charge air cooler hose clamps shall be heavy-duty, constant-torque, T-bolt clamps to ensure proper sealing under all temperatures in order to keep dust and other contaminants out of the engine intake air stream and protect the engine.

Fan/Shroud

The fan shall be 30" in diameter with eleven (11) blades for maximum airflow and dynamic balance. It shall be made of nylon for strength and corrosion resistance. The fan shall be installed with grade 8 hardware which has been treated with thread locker for additional security. A fan

shroud attached to the radiator shall be provided to prevent recirculation of engine compartment air around the fan in order to maximize the cooling airflow through the radiator. The fan shroud shall be constructed of fiber-reinforced high temperature plastic. The shroud shall be specifically formed with curved surfaces which improves air flow and cooling.

Transmission Cooler

The cooling system shall include a liquid-to-liquid transmission cooler capable of cooling the heat generated from the transmission. When a transmission retarder is selected, the cooler shall have an increased capacity to handle the additional heat load.

FUEL SYSTEMS

Fuel System

One (1) 65 gallon fuel tank shall be provided. The tank shall be of an all-welded, aluminizedsteel construction with anti-surge baffles and shall conform to all applicable Administration (FHWA) 393.65 and 393.67 standards. The tank shall be mounted below the frame rails at the rear of the chassis for maximum protection. The tank shall be secured with two (2) wrap-around T-bolt type stainless steel straps. Each strap shall be fitted with protective rubber insulation and shall be secured with Grade 8 hardware. This design allows for tank removal from below the chassis.

The fuel tank shall be equipped with a 2" diameter filler neck. The filler neck shall extend to the rear of the vehicle behind the rear tires and away from the heat of the exhaust system as required by NFPA 1901 Standard for Automotive Fire Apparatus. The open end of the filler neck shall be equipped with a twist-off filler cap with a retaining chain.

The tank shall be plumbed with top-draw and top-return fuel lines in order to protect the lines from road debris. Bottom-draw and/or bottom-return fuel lines are not acceptable. A vent shall be provided at the top of the tank. The vent shall be connected to the filler neck to prevent splash-back during fueling operations. A .50" NPT drain plug shall be provided at the bottom of the tank.

The tank shall have a minimum useable capacity of 65 gallons of fuel with a sufficient additional volume to allow for thermal expansion of the fuel without overflowing the vent.

A fuel pump shall be provided and sized by the engine manufacturer as part of the engine.

Fuel Line Hose

Wire braided fuel hose meeting SAE J-1402 shall be provided for the chassis fuel system. The hose shall have a working temperature rating of -55 degree F to 300 degree F.

The ends of the hose shall have connections that shall allow the hose to be reattached if removed.

Fuel/Water Separator

A Racor fuel/water separator shall be installed in place of the Cummins fuel/water separator with drain. The unit shall utilize a three-step separate process: centrifuge for primary contaminant separation, conical baffles for water coalescing, and a replaceable filter for final particulate removal. The separator shall have a bottom drain for removing contaminants, shall be heated and shall have a rated maximum flow of 3.16 GPM. A sensor with indicator light and audible alarm shall be provided for the Racor fuel/water separator. The indicator light shall be mounted in the cab visible to the driver with the unit located inside the frame rails. The unit will alert the driver of high water content in the separator bowl.

Fuel Shut-Off

A shut-off valve shall be supplied to prevent drain back of fuel into the main supply line during filter changes. The valve(s) shall be located: one (1) inlet side of fuel/water separator.

ALTERNATOR

270 Amp Alternator

A Leece Neville model 4870J-J180 series 270 amp SAE (J56) rated, 240 amp NFPA 1901 rated alternator with internal rectifier, regulator and AC taps shall be installed in accordance with the engine manufacturer's recommendations.

BATTERIES

Battery System

The manufacturer shall supply five (5) heavy duty Group 31 12 volt maintenance-free batteries. Each battery shall be installed and positioned so as to allow easy replacement of any single battery. Each battery shall be equipped with carrying handles to facilitate ease of removal and replacement. There shall be two (2) steel frame-mounted battery boxes, one (1) on the left frame rail and one (1) on the right frame rail. Each battery box shall be secured to the frame rail with Grade 8 hardware. The boxes shall hold two (2) batteries on the left side and three (3) on the right side. The batteries shall have a minimum combined rating of 5,000 (5 x 1000) cold cranking amps (CCA) @ 0 degrees Fahrenheit and 1025 (5 x 205) minutes of reserve capacity for extended operation. The batteries shall have 3/8-16 threaded stud terminals to ensure tight cable connections. The battery stud terminals shall each be treated with concentrated industrial soft-seal after cable installation to promote corrosion prevention. The positive and negative battery stud terminals and the respective cables shall be clearly marked to ensure quick and mistake-proof identification.

Batteries shall be placed on non-corrosive rubber matting and secured with hold-down brackets to prevent movement, vibration, and road shock. The hold-down bracket J-hooks shall be cut to fit and shall have all sharp edges removed. The batteries shall be placed in plastic trays to

provide preliminary containment should there be leakage of hazardous battery fluids. There shall be two (2) plastic trays, one (1) for each set of batteries. Each battery tray shall be equipped with a rubber hose to facilitate drainage. The rubber hose shall be routed to drain beneath the battery box. The batteries shall be positioned in well-ventilated areas.

One (1) positive and one (1) negative jumper stud shall be provided.

Batteries shall have a warranty of twelve (12) months that shall commence upon the date of delivery of the apparatus.

CHASSIS OPTIONS

Engine Fan Clutch

The engine shall be equipped with a thermostatically controlled engine cooling fan. The fan shall be belt driven and utilize a clutch to engage when the engine reaches a specified temperature and / or the water pump is engaged (if equipped).

When disengaged, the fan clutch shall allow for improved performance from optional floor heaters, reduced cab interior noise, increased acceleration and improved fuel economy.

The fan shall be equipped with a fail-safe engagement so that if the clutch fails the fan shall engage to prevent engine overheating.

Drivelines

Drivelines shall have a heavy duty metal tube and shall be equipped with Spicer 1710HD universal joints to allow full-transmitted torque to the axle(s). Drive shafts shall be axially straight, concentric with axis and dynamically balanced.

Front Tow Eyes

Two (2) 3/4" thick heavy duty steel tow eyes shall be securely attached to the chassis frame rails at the front of the apparatus. They shall be mounted down below the bumper / cab.

Rear Tow Eyes

Two (2) heavy duty tow eyes made of 3/4" (0.75") thick steel having 2-1/2" diameter holes shall be mounted below the body at the rear of the vehicle to allow towing (not lifting) of the apparatus without damage. The tow eyes will be welded to the lower end of a 5" steel channel that is bolted at the end of the chassis frame rails. The tow eyes shall be painted chassis black.

DEF Tank

A diesel exhaust fluid (DEF) tank with a five (5) gallon capacity shall be provided.

The DEF tank shall include a heater fed by hot water directly from the engine block to prevent the DEF from becoming too cool to operate correctly per EPA requirements. The tank shall include a temperature sensor to control the heater control valve that controls the feed of hot water from the engine to the DEF tank heater.

A sender shall be provided in the DEF tank connected to a level gauge on the cab dash.

The tank shall be located left side below rear of cab.

Power Steering Cooler

A heat exchanger (cooler) shall be installed to maintain desired power steering fluid temperature. The cooler shall be a model DH-073-1-1 with air / oil design rated at 6300 BTU/HR @10 GPM. The cooler shall be mounted in front of the radiator and plumbed with #10 lines.

CAB MODEL

Cab Typhoon X Medium w/Barrier Style Doors

The vehicle shall be distinguished by an all-welded aluminum and fully enclosed tilt cab. The cab shall be designed exclusively for fire/rescue service and shall be pre-engineered to ensure long life. It shall incorporate an integral welded substructure of high-strength aluminum alloy extrusions that creates an occupant compartment that is essentially a protective perimeter. The end result is a distinctive structure that is aesthetically appealing, functionally durable, and characterized by increased personnel safety.

The cab shall be constructed from 3/16" (0.188") 3003 H14 aluminum alloy plate roof, floor, and outer skins welded to a high-strength 6063-T6 aluminum alloy extruded subframe. Wall supports and roof bows are 6061 T6 aluminum alloy. This combination of a high-strength, welded aluminum inner structure surrounded on all sides by load-bearing, welded aluminum outer skins provides a cab that is strong, lightweight, corrosion-resistant, and durable.

The inner structure shall be designed to create an interlocking internal "roll-cage" effect by welding two (2) 3" x 3" x 0.188" wall-thickness 6063-T5 aluminum upright extrusions between the 3" x 3" x 0.375" wall-thickness 6061-T6 roof crossbeam and the 2.25" x 3" x 0.375" wall-thickness 6063-T6 subframe structure in the front. An additional two (2) aluminum upright extrusions within the back-of-cab structure shall be welded between the rear roof perimeter extrusion and the subframe structure in the rear to complete the interlocking framework. The four (4) upright extrusions -- two (2) in the front and two (2) in the rear -- shall be designed to effectively transmit roof loads downward into the subframe structure to help protect the occupant compartment from crushing in a serious accident. All joints shall be electrically seam welded internally using aluminum alloy welding wire.

The subframe structure shall be constructed from high-strength 6061-T6 aluminum extrusions welded together to provide a structural base for the cab. It shall include a side-to-side C-channel

extrusion across the front, with 3/4" x 2-3/4" (.75" x 2.75") full-width crossmember tubes spaced at critical points between the front and rear of the cab.

The cab floor shall be constructed from 3/16" (0.188") 3003 H14 smooth aluminum plate welded to the subframe structure to give the cab additional strength and to help protect the occupants from penetration by road debris and under-ride collision impacts.

The cab roof shall be constructed from 3/16" (0.188") 3003 H14 aluminum treadplate supported by a grid of fore-aft and side-to-side aluminum extrusions to help protect the occupants from penetration by falling debris and downward-projecting objects. Molded fiberglass or other molded fiber-reinforced plastic roof materials are not acceptable.

The cab roof perimeter shall be constructed from 4" x 6-5/8" (4" x 6.625") 6063-T5 aluminum extrusions with integral drip rails. Cast aluminum corner joints shall be welded to the aluminum roof perimeter extrusions to ensure structural integrity. The roof perimeter shall be continuously welded to the cab roof plate to ensure a leak-free roof structure.

The cab rear skin shall be constructed from 3/16" (0.188") 3003 H14 aluminum plate. Structural extrusions shall be used to reinforce the rear wall.

The left-hand and right-hand cab side skins shall be constructed from 3/16" (0.188") 3003 H14 smooth aluminum plate. The skins shall be welded to structural aluminum extrusions at the top, bottom, and sides for additional reinforcement.

The cab front skins shall be constructed from 3/16" (0.188") 3003 H14 smooth aluminum plate. The upper portion shall form the windshield mask, and the lower portion shall form the cab front. Each front corner shall have a full 9" outer radius for strength and appearance. The left-hand and right-hand sides of the windshield mask shall be welded to the left-hand and right-hand front door frames, and the upper edge of the windshield mask shall be welded to the cab roof perimeter extrusion for reinforcement. The cab front shall be welded to the subframe C-channel extrusion below the line of the headlights to provide protection against frontal impact.

Cab Exterior

The exterior of the cab shall be 94" wide x 130" long to allow sufficient room in the occupant compartment for up to eight (8) fire fighters. The cab roof shall be approximately 101" above the ground with the flat roof option. The back-of-cab to front axle length shall be a minimum of 58".

Front axle fenderette trim shall be brushed aluminum for appearance and corrosion resistance. Bolt-in front wheel well liners shall be constructed of 3/16" (0.188") composite material to provide a maintenance-free, damage-resistant surface that helps protect the underside of the cab structure and components from stones and road debris.

The cab windshield shall be of a two-piece replaceable design for lowered cost of repair. The windshield shall be made from 1/4" (0.25") thick curved, laminated safety glass with a 75% light transmittance automotive tint. A combined minimum viewing area of 2,700-sq. in. shall be

provided. Forward visibility to the ground for the average (50th percentile) male sitting in the driver's seat shall be no more than 11 feet 7 inches from the front of the cab to ensure good visibility in congested areas.

Cab Mounts and Cab Tilt System

The cab shall be independently mounted from the body and chassis to isolate the cab structure from stresses caused by chassis twisting and body movements. Mounting points shall consist of two (2) forward-pivoting points, one (1) on each side; two (2) intermediate rubber load-bearing cushions located midway along the length of the cab, one on each side; and two (2) combination rubber shock mounts and cab latches located at the rear of the cab, one (1) on each side.

An electric-over-hydraulic cab tilt system shall be provided to provide easy access to the engine. It shall consist of two (2) large-diameter, telescoping, hydraulic lift cylinders, one (1) on each side of the cab, with a frame-mounted electric-over-hydraulic pump for cylinder actuation.

Safety flow fuses (velocity fuses) shall be provided in the hydraulic lift cylinders to prevent the raised cab from suddenly dropping in case of a burst hydraulic hose or other hydraulic failure. The safety flow fuses shall operate when the cab is in any position, not just the fully raised position.

The hydraulic pump shall have a manual override system as a backup in the event of an electrical failure. Lift controls shall be located in a compartment to the rear of the cab on the right side of the apparatus. A parking brake interlock shall be provided as a safety feature to prevent the cab from being tilted unless the parking break is set.

The entire cab shall be tilted through a 42-45 degree arc to allow for easy maintenance of the engine, transmission and engine components. A positive-engagement safety latch shall be provided to lock the cab in the full tilt position to provide additional safety for personnel working under the raised cab.

In the lowered position, the cab shall be locked down by two (2) automatic, spring-loaded cab latches at the rear of the cab. A "cab ajar" indicator light shall be provided on the instrument panel to warn the driver when the cab is not completely locked into the lowered position.

Cab Interior

The interior of the cab shall be of the open design with an ergonomically-designed driver area that provides ready access to all controls as well as a clear view of critical instrumentation.

The engine cover between the driver and the officer shall be a low-rise contoured design to provide sufficient seating and elbow room for the driver and the officer. The engine cover shall blend in smoothly with the interior dash and flooring of the cab. An all-aluminum subframe shall be provided for the engine cover for strength. The overall height of the engine enclosure shall not exceed 23" from the floor at each side and 27" in the center section. The engine cover shall not exceed 41" in width at its widest point.

The rear portion of the engine cover shall be provided with a lift-up section to provide easy access for checking transmission fluid, power steering fluid, and engine oil without raising the cab. The engine cover insulation shall consist of 3/4" dual density fiberglass composite panels with foil backing manufactured to specifically fit the engine cover without modification to eliminate "sagging" as found with foam insulation. The insulation shall meet or exceed DOT standard MVSS 302-1 and V-0 (UI subject 94 Test).

All cab floors shall be covered with a black rubber floor mat that provides an aggressive slip-resistant surface in accordance with current NFPA 1901.

A minimum of 57.25" of floor-to-ceiling height shall be provided in the front seating area of the cab and a minimum of 55.25" floor-to-ceiling height shall be provided in the rear seating area. A minimum of 36" of seated headroom at the "H" point shall be provided over each fenderwell.

The floor area in front of the front seat pedestals shall be no less than 20.5" side to side by 25.0" front to rear for the driver and no less than 20.5" side to side by 26.0" front to rear for the officer to provide adequate legroom.

Battery jumper studs shall be provided to allow jump-starting of the apparatus without having to tilt the cab.

All exposed interior metal surfaces shall be pretreated using a corrosion prevention system.

The interior of the cab shall be insulated to ensure the sound (dbA) level for the cab interior is within the limits stated in the current edition of NFPA 1901. The insulation shall consist of 2 oz. wadding and 1/4" (0.25") foam padding. The padding board shall be backed with 1/4" (0.25") thick reflective insulation. The backing shall be spun-woven polyester. Interior cab padding shall consist of a rear cab headliner, a rear wall panel, and side panels between the front and rear cab doors.

The overhead console and heater cover shall be covered with thermoformed, non-metallic, non-fiber trim pieces to provide excellent scuff and abrasion resistance, as well as chemical stain resistance. The thermoformed material shall comply with Federal Motor Vehicle Safety Standard (FMVSS) 302 for flammability of interior materials.

The vehicle shall use a seven-position tilt and telescopic steering column to accommodate various size operators. An 18" padded steering wheel with a center horn button shall be provided.

A full-width overhead console shall be mounted to the cab ceiling for placement of siren and radio heads, and for warning light switches. The console shall be made from a thermoformed, non-metallic material and shall have easily removable mounting plates.

Storage areas, with hinged access doors, shall be provided below the driver and officer seats. The driver side compartment shall be approximately 19.25" x 17.75" x 5.75" high and the officer side

compartment shall be approximately 18.25" x 22.5" x 11" high (19.25" x 17.75" x 5.75" w/ air ride).

The front cab steps shall be a minimum of 8" deep x 24" wide. The first step shall be no more than 24.0" above the ground with standard tires in the unloaded condition per NFPA 1901 standards. The rear cab steps shall be a minimum 12" deep x 21" wide. The first step shall be no more than 24.0" above the ground with standard tires in the unloaded condition per NFPA 1901 standards. The rear steps shall incorporate intermediate steps for easy access to the cab. The step surfaces shall be aluminum diamond plate with a multi-directional, aggressive gripping surface incorporated into the aluminum diamond plate in accordance with current NFPA 1901.

A black rubber grip handle shall be provided on the interior of each front door below the door window to ensure proper hand holds while entering and exiting the cab. An additional black rubber grip handle shall be provided on the left and right side windshield post for additional handholds.

Cab Doors

There shall be reflective signs on each cab door in compliance with all NFPA requirements.

Four (4) side-opening cab doors shall be provided. Doors shall be constructed of a 3/16" (0.188") aluminum plate outer material with an aluminum extruded inner framework to provide a structure that is as strong as the side skins.

Front cab door openings shall be approximately 36" wide x 63" high, and the rear cab door openings shall be approximately 33.75" wide x 63" high. The front doors shall open approximately 75 degrees, and the rear doors shall open approximately 80 degrees.

The doors shall be securely fastened to the doorframes with full-length, stainless steel piano hinges, with 3/8" (0.375") diameter pins for proper door alignment, long life, and corrosion resistance. Mounting hardware shall be treated with corrosion-resistant material prior to installation. For effective sealing, an extruded rubber gasket shall be provided around the entire perimeter of all doors.

Stainless steel paddle-style door latches shall be provided on the interiors of the doors. The latches shall be designed and installed to protect against accidental or inadvertent opening as required by NFPA 1901.

The front door windows shall provide a minimum viewing area of 530 sq. in. each. The rear door windows shall provide a minimum viewing area of 500 sq. in. each. All windows shall have 75% light transmittance automotive safety tint. Full roll-down windows shall be provided for the front cab doors with worm gear drive cable operation for positive operation and long life. Scissors or gear-and-sector drives are not acceptable.

Cab Instruments and Controls

Two (2) pantograph-style windshield wipers with two (2) separate electric motors shall be provided for positive operation. Air-operated windshield wipers are not acceptable because of their tendency to accumulate moisture, which can lead to corrosion or to freezing in cold weather. The wipers shall be a wet-arm type with a one (1) gallon washer fluid reservoir, an intermittent-wipe function, and an integral wash circuit. Wiper arm length shall be approximately 28", and the blade length approximately 20". Each arm shall have a 70 degree sweep for full coverage of the windshield.

An overhead mounted heater and defroster with a minimum capacity of 60,000 Btu/hr and all necessary controls shall be mounted in the cab. The airflow system shall consist of two (2) levels, defrost and cab, and shall have fresh air and defogging capabilities.

Cab controls shall be located on the cab instrument panel in the dashboard on the driver's side where they are clearly visible and easily reachable. Emergency warning light switches shall be installed in removable panels for ease of service. The following gauges and/or controls shall be provided:

- Master battery switch/ignition switch (rocker with integral indicator)
- Starter switch/engine stop switch (rocker)
- Heater and defroster controls with illumination
- Marker light/headlight control switch with dimmer switch
- Self-canceling turn signal control with indicators
- Windshield wiper switch with intermittent control and washer control
- Master warning light switch
- Transmission oil temperature gauge
- Air filter restriction indicator

• Pump shift control with green "pump in gear" and "o.k. to pump" indicator lights • Parking brake controls with red indicator light on dash

- Automatic transmission shift console
- Electric horn button at center of steering wheel
- Cab ajar warning light on the message center enunciator

Controls and switches shall be identified as to their function by backlit wording adjacent to each switch, or indirect panel lighting adjacent to the controls.

Fast Idle System

A fast idle system shall be provided and controlled by the cab-mounted switch. The system shall increase engine idle speed to a preset RPM for increased alternator output.

Electrical System

The cab and chassis system shall have a centrally located electrical distribution area. All electrical components shall be located such that standard operations shall not interfere with or disrupt vehicle operation. An automatic thermal-reset master circuit breaker compatible with the alternator size shall be provided. Automatic-reset circuit breakers shall be used for directional

lights, cab heater, battery power, ignition, and other circuits. An access cover shall be provided for maintenance access to the electrical distribution area.

A 6 place, constantly hot, and 6 place ignition switched fuse panel and ground for customerinstalled radios and chargers shall be provided at the electrical distribution area. Radio suppression shall be sufficient to allow radio equipment operation without interference.

All wiring shall be mounted in the chassis frame and protected from impact, abrasion, water, ice, and heat sources. The wiring shall be color-coded and functionally-labeled every 3" on the outer surface of the insulation for ease of identification and maintenance. The wiring harness shall conform to SAE 1127 with GXL temperature properties. Any wiring connections exposed to the outside environment shall be weather-resistant. All harnesses shall be covered in a loom that is rated at 280 degrees F to protect the wiring against heat and abrasion.

A Vehicle Data Computer (VDC) shall be supplied within the electrical system to process and distribute engine and transmission Electronic Control Module (ECM) information to chassis system gauges, the message center, and related pump panel gauges. Communication between the VDC and chassis system gauges shall be through a 4 wire multiplexed communication system to ensure accurate engine and transmission data is provided at the cab dash and pump. The VDC shall be protected against corrosion, excessive heat, vibration, and physical damage.

Two (2) dual rectangular sealed beam halogen headlights shall be installed on the front of the cab, one (1) on each side, mounted in a polished chrome-plated bezel. The low beam headlights shall activate with the release of the parking brake to provide daytime running lights (DRL) for additional vehicle conspicuity and safety. The headlight switch shall automatically override the DRL for normal low beam/high beam operation.

Cab Crashworthiness Requirement

The apparatus cab shall meet and/or exceed relevant NFPA 1901 load and impact tests required for compliance certification with the following:

Side Impact Dynamic Pre-Load per SAE J2422 (Section 5).

Testing shall meet and/or exceed defined test using 13,000 ft-lbs of force as a requirement. The cab shall be subject to a side impact representing the force seen in a roll-over. The cab shall exhibit minimal to no intrusion into the cab's occupant survival space, doors shall remain closed and cab shall remain attached to frame.

Cab testing shall be completed using 13,776 ft-lbs of force exceeding testing requirements.

<u>Ouasi-static Roof Strength (proof loads) per SAE J2422 (Section 6) / ECE R29, Annex 3, paragraph 5.</u>

Testing shall meet and/or exceed defined test using 22,046 lbs of mass as a requirement. Testing shall be completed using platen(s) distributed uniformly over all bearing members of the cab roof structure.

Cab testing shall be completed using 23,561 lbs of mass **exceeding** testing requirements. The cab shall exhibit minimal to no intrusion into the cab's occupant survival space and doors shall remain closed.

Additional cab testing shall be conducted using 117,336 lbs of mass **exceeding** testing requirements by **over five (5) times**. The cab shall exhibit minimal to no intrusion into the cab's occupant survival space and the doors shall remain closed.

Frontal Impact per SAE J2420.

Testing shall meet and/or exceed defined test using 32,549 ft-lbs of force as a requirement. The cab shall be subject to a frontal impact as defined by the standard. The cab shall exhibit minimal to no intrusion into the cab's occupant survival space, doors shall remain closed and cab shall remain attached to frame.

Cab testing shall be completed using 34,844 ft-lbs of force exceeding testing requirements.

Additional cab testing shall be conducted using 65,891 ft-lbs of force **exceeding** testing requirements by **over two (2) times**.

The cab shall meet all requirements to the above cab crash worthiness; NO EXCEPTIONS.

A copy of a certificate or letter verifying compliance to the above performance by an independent, licensed, professional engineer shall be provided upon request.

For any or all of the above tests, the cab manufacturer shall provide either photographs or video footage of the procedure upon request.

ISO Compliance

The manufacturer shall ensure that the construction of the apparatus cab shall be in conformance with the established ISO-compliant quality system. All written quality procedures and other procedures referenced within the pages of the manufacturer's Quality Manual, as well as all Work Instructions, Workmanship Standards, and Calibration Administration that directly or indirectly impacts this process shall be strictly adhered to. By virtue of its ISO compliance the manufacturer shall provide an apparatus cab that is built to exacting standards, meets the customer's expectations, and satisfies the customer's requirements.

CAB ROOF TYPE

Cab Roof

The cab shall have a flat roof (non-vista).

CAB BADGE PACKAGE

Logo Package

The apparatus shall have manufacturer logos provided on the cab and body as applicable.

GRILLE

Cab Grille

The front cooling air intake grille shall be constructed of stainless steel mesh and supported by a 0.80" polished stainless steel frame providing no less that 81% open area for excellent cooling performance.

CAB DOOR OPTIONS

Rear Cab Door Position

The cab rear doors shall be moved to the rear of the wheel opening. This door placement facilitates easier entry and egress by reducing the rear facing seat protrusion into the door opening.

Rear door position to the 58" or (medium cab).

Cab Front Door Windows

Driver and officer door windows shall have the support pillar located toward the front of the window. There shall be a vent that can be opened and closed within the window itself, located towards the front.

Cab Door Locks

Each cab door shall have a manual operated door lock actuated from the interior of each respective door. Exterior of each cab door shall be provided with a barrel style keyed lock below the cab door handle.

Cab Door Locks

The cab shall have CH751 keyed door locks provided on exterior doors to secure the apparatus.

Cab Door Front Windows

Driver and Officer door windows. Includes electric roll-down actuation. Each door to have individual control at door position and the driver door is to have master control for all power window locations.

Exterior Cab Door Latches

All exterior cab door latches shall be paddle style.

Cab Door Panels

The inner door panels shall be made from 1/8" (.125") aluminum plate painted Zolatone gray for increased durability. The cab door panels shall incorporate an easily removable panel for access to the latching mechanism for maintenance or service.

Cab Door Area Lighting

There shall be four (4) clear LED lights provided to illuminate the cab step well area. Each light shall be located in the cab step well area. Each light shall be activated by the cab door ajar circuit.

Cab Door Reflective Material

Reflective Red/Lemon Yellow material striping shall be provided approximately 12" high on the lower cab door panels. The stripes shall run from the top outer corner to the bottom inside corner of the lower door area, forming a "A" shape when viewed from the rear. The reflective material shall meet NFPA 1901 requirements.

Cab Door Rear Windows

Rear crew cab door windows with rear fixed panel. Includes electric roll-down actuation. Each door to have individual controls. For use with paddle style door latching. The rear of the window opening shall have a fixed glass panel approximately 5" wide to allow the forward section of glass to roll down completely ahead of the door latching hardware.

Cab Door Map Pockets

A bolt on map pocket shall be mounted on the front cab doors, centered on the lower area of the door panel. The map pocket shall be constructed of 1/8" (.125") aluminum plate painted Zolatone gray.

The dimensions of the map pocket shall be approximately 10" high x 14" wide x 3" deep.

CAB STEP OPTIONS

Cab Step

An auxiliary step below the cab door shall be provided. The step shall be constructed of .188" aluminum tread brite. The step surface shall be provided with an aggressive skid-resistant surface and have an open back. The step shall be in accordance with current NFPA requirements and

shall include a multi-directional aggressive gripping surface incorporated into the diamond plate. The surface shall extend vertically from the diamond plate sheet a minimum of 1/8" (0.125"). Gripping surfaces shall be circular in design, a minimum of 1" diameter and on centers not to exceed 4".

The step shall be located driver's front door, officer's front door, driver's rear door, officer's rear door.

Steps under front cab doors shall not interfere with approach angle.

Cab Steps

The lower cab steps shall extend 3.5" past the side of the cab to provide increased surface area.

MIRRORS

Cab Mirrors

There shall be two (2) Lang Mekra 300 Aero Series Technology Mirrors provided, one (1) driver's and one (1) officer's side. The mirrors shall be chrome-plated on the main head, be remote controlled with a four way power system and be heated. There shall be LED marker lights with bezel on the main head, and LED arrow lights in the mirror glass. The main flat glass shall provide 120 square inches of viewable surface space.

There shall be separate heads for the driver`s and officer`s side housing convex glass and provide 56 square inches of viewing surface.

The mirrors shall be mounted on the cab doors.

MISC EXTERIOR CAB OPTIONS

Cab Canopy Window

There shall be a fixed window provided between the front and rear doors on the driver`s side of the cab.

Window dimensions shall be as follows:

- 44" C/A cab (short cab): 16"W x 24.5"H
- 58" 80" C/A cab (medium extended): 26.69"W x 24.5"H

Cab Canopy Window

There shall be a fixed window provided between the front and rear doors on the officer`s side of the cab.

Window dimensions shall be as follows:

- 44" C/A cab (short cab): 16"W x 24.5"H
- 58" 80" C/A cab (medium extended): 26.69"W x 24.5"H

Front Mud Flaps

Black linear low density polyethylene (proprietary blend) mud flaps shall be installed on the rear of the cab front wheel wells. The design of the mud flaps shall have corrugated ridges to distribute water evenly.

Handrails

Cab door assist handrails shall consist of two (2) 1.25" diameter x 18" long 6063-T5 anodized aluminum tubes mounted directly behind the driver and officer door openings one each side of the cab. The handrails shall be machine extruded with integral ribbed surfaces to assure a good grip for personnel safety. Handrails shall be installed between chrome end stanchions and shall be positioned at least 2" from the mounting surface to allow a positive grip with a gloved hand.

Handrails

Cab door assist handrails shall consist of two (2) 1.25" diameter x 18" long 6063-T5 anodized aluminum tubes mounted directly behind the driver and officer rear door openings each side of the cab. The handrails shall be machine extruded with integral ribbed surfaces to assure a good grip for personnel safety. Handrails shall be installed between chrome end stanchions and shall be positioned at least 2" from the mounting surface to allow a positive grip with a gloved hand.

Rear Cab Wall Construction

The rear cab wall shall be constructed with the use of 3/16" aluminum diamond plate interlocking in aluminum extrusions.

Receptacle Mounting Plate

A mounting plate shall be provided for the battery charger receptacle, battery charger indicator and if applicable the air inlet, etc. The plate shall be constructed of 14 gauge brushed finish stainless steel and be removable for service access to the receptacle(s) and indicator.

HVAC

Air Conditioning

An overhead air-conditioner / heater system with a single radiator mounted condenser shall be supplied.

The unit shall be mounted to the cab interior headliner in a mid cab position, away from all seating positions. The unit shall provide ten (10) comfort discharge louvers, four (4) to the back area of the cab and six (6) to the front. These louvers will be used for AC and heat air delivery. Two (2) additional large front louvers shall be damper controlled to provide defogging and defrosting capabilities to the front windshield as necessary.

The unit shall consist of a high output evaporator coil and heater core with one (1) high output dual blower for front air delivery, and two (2) high performance single wheel blowers for rear air delivery.

The control panel shall actuate the air-distribution system with air cylinders, which are to be separated from the brake system by an 85-90 psi pressure protection valve. A three-speed blower switch shall control air speed.

The condenser shall be radiator mounted and have a minimum capacity of 65,000 BTU's and shall include a receiver drier.

Performance Data: (Unit only, no ducting or louvers)

AC BTU: 55,000

Heat BTU: 65,000

CFM: 1300 @ 13.8V (All blowers)

The compressor shall be a ten-cylinder swash plate type Seltec model TM-31HD with a capacity of 19.1 cu. in. per revolution.

The system shall be capable of cooling the interior of the cab from 100 degrees ambient to 75 degrees or less with 50% relative humidity in 30 minutes or less.

HVAC Control Location

Heating and air conditioning controls shall be located in the driver side lower dash area.

SEATS

Cab Seats

All cab seats shall be Bostrom brand.

Seat, Driver

One (1) H. O. Bostrom 400 Series Sierra Air- 100RX4 suspension seats with high back styling shall be supplied for the driver position.

Features shall include:

- Air-100 suspension assembly with weight, height and ride adjustment.
- Built in lumbar support.
- 4" vertical suspension motion.
- 5" fore and aft adjustment.

All seat positions shall have a bright red retractable 3-point lap and shoulder harness, providing additional safety and security for personnel. Extensions shall be provided with the seat belts so the male end can be easily grasped and the female end easily located while sitting in a normal position.

Seat, Officer

One (1) H. O. Bostrom 400 Series fixed seat with high back SCBA storage for the officer's position shall be supplied.

Features shall include:

- Removable "Store-All" side cushions.
- Auto-pivot and return headrest to open for improved exit with SCBA.
- 12.5" wide SCBA cavity to store leading SCBA Brands.
- Built in lumbar support.
- Replaceable seat, side and headrest cushions.

All seat positions shall have a bright red retractable 3-point lap and shoulder harness, providing additional safety and security for personnel. Extensions shall be provided with the seat belts so the male end can be easily grasped and the female end easily located while sitting in a normal position.

Seat, Rear Facing

One (1) Bostrom 400 Series tanker 450 SCBA high back SCBA storage seat shall be provided in the rear facing position over the driver side wheel well.

Features shall include:

- Removable "Store-All" side cushions.
- Auto-pivot and return headrest to open for improved exit with SCBA.
- 12.5" wide SCBA cavity to store leading SCBA Brands.
- Built in lumbar support.
- Replaceable seat, side and headrest cushions.

All seat positions shall have a bright red retractable 3-point lap and shoulder harness, providing additional safety and security for personnel. Extensions shall be provided with the seat belts so

the male end can be easily grasped and the female end easily located while sitting in a normal position.

Seat, Rear Facing

One (1) Bostrom 400 Series tanker 450 SCBA high back SCBA storage seats shall be provided in the rear facing position over the officer side wheel well.

Features shall include:

- Removable "Store-All" side cushions.
- Auto-pivot and return headrest to open for improved exit with SCBA.
- 12.5" wide SCBA cavity to store leading SCBA Brands.
- Built in lumbar support.
- Replaceable seat, side and headrest cushions.

All seat positions shall have a bright red retractable 3-point lap and shoulder harness, providing additional safety and security for personnel. Extensions shall be provided with the seat belts so the male end can be easily grasped and the female end easily located while sitting in a normal position.

Seat Cover Material

All seats shall have Durawear seat cover material.

Seat Fabric Color

All seats shall be gray in color.

Seating Capacity Tag

A tag that is in view of the driver stating seating capacity of six (6) personnel shall be provided.

Seat, Rear Wall

One (1) fold down jump seat shall be provided.

The seat shall be located on the rear wall driver's side outboard, officer's side outboard.

Features to include:

• Seat bottom cushion shall be constructed of high density foam with a heavy duty, wear resistant material.

• Seat bottom automatically folds up when not in use to provide increased room in the rear of the cab.

All seat positions shall have a bright red retractable 3-point lap and shoulder harness, providing additional safety and security for personnel. Extensions shall be provided with the seat belts so the male end can be easily grasped and the female end easily located while sitting in a normal position.

Bostrom SecureAll Locking System

The H.O. Bostrom SecureAll[™] SCBA Locking System shall be one bracket model and store all U.S. and international SCBA brands and sizes while in transit or for storage on fire trucks. The bracket shall be easily adjustable; all adjustment points shall utilize similar hardware and adjustments shall be made with one tool.

The bracket system shall be free of straps and clamps that may interfere with auxiliary equipment on SCBA units. The center guide fork shall keep the tank in-place for a safe and comfortable fit in seat cavity. Firefighters shall simply push the SCBA unit against the pivot arm to engage the patented auto-locking system. Once the lock is engaged, the top clamp shall surround the top of the SCBA tank for a secure fit in all directions.

The SecureAll[™] bracket shall fit in all H.O. Bostrom Tanker SCBA seats including ABTS and non-ABTS seats and all flip-up ABTS and non-ABTS seats. Additional seat depth shall not be required for proper bracket fit; changes to the shroud back shall not be required for proper mounting of the bracket.

The standard release handle shall be integrated into the seat cushion for quick and easy release and shall eliminate the need for straps or pull cords to interfere with other SCBA equipment.

The H.O. Bostrom SecureAllTM system meets NFPA 1901 standards and requirements of EN 1846-2.

Location: rear facing driver's side, rear facing officer's side. The bracket(s) shall be located rear facing driver's side, rear facing officer's side.

MEDICAL CABINETS

Medical Cabinet

There shall be a medical storage cabinet provided at the back wall of the interior of the cab, between outboard seats. The medical cabinet shall be constructed of 1/8" smooth aluminum plate. The medical cabinet shall be approximately 48" high x 40" wide x 20" deep interior.

Three (3) vertically adjustable shelves shall be provided and installed in the medical cabinet. The shelves shall be constructed of 1/8" smooth aluminum plate. Each shelf shall have a 1" front for added strength and reinforcement. The shelves shall be sized to the interior dimensions of the medical cabinet. The shelves shall be mounted with extruded aluminum adjustable shelf tracking attached to the cabinet walls and the shelves to be secured with aluminum brackets to the tracks
to allow for vertical height adjustment. As necessary a 3/4" x 2-3/4" aluminum extrusion shall be mounted to the underside of the shelves to provide additional reinforcement as needed.

There shall be a locking roll-up door provided to secure contents.

Medical Storage Cabinet Finish

The medical storage cabinet(s) shall have a Zolatone gray finish. The finish shall be applied to the interior, exterior, shelves (if equipped) and trays (if equipped) of the cabinet.

Medical Cabinet Doors

All medical cabinets on the custom cab shall be ROM brand roll-up type doors.

MISC INTERIOR CAB OPTIONS

Cab Interior Color

Cab instrument panel, overhead console, trim panels, headliner, and door panels shall be gray.

Sun Visors

Lexan sun visors shall be provided for the driver and officer matching the interior trim of the cab and shall be flush mounted into the underside of the overhead console.

Engine Cover

The engine cover shall blend in smoothly with the interior dash and flooring of the cab. The upper left and right sides shall have a sloped transition surface running front to rear providing increased space for the driver and officer.

The engine cover and engine service access door cover shall be molded 18 lb/cu. ft. (+/-0.5) flexible integral skinned polyurethane foam at a Durometer of 60 (+/-5.0) per ASTM F1957-99. The cover shall be approximately .5" thick with a minimum skin thickness of 0.0625 inches. The cover shall be provided to reduce the transmission of noise and heat from the engine. The cover shall be black and feature a pebble grain finish for slip resistance.

Cab Dash - Severe Duty

The center and officer side dash shall be constructed from .125" smooth aluminum plate painted to match the cab interior. The officer side dash panel shall be lowered to provide increased visibility. A hinged access panel shall be provided on top of the center dash to provide easy access to components within.

The lower kick panels below the dash to be constructed from .125" aluminum smooth plate painted to match cab interior. The panels shall be removable to allow for servicing components that may be located behind the panels.

CAB ELECTRICAL OPTIONS

Cab Dome Lights

Four (4) ceiling mounted dome light assemblies shall be provided.

Each light shall consist of a three-position assembly mounted rocker switch, LED (light emitting diode) 4" grommet mount white dome light, LED (light emitting diode) 4" grommet mount red dome light, and a plastic housing.

The white light activates with appropriate cab door and light assembly mounted rocker switch, the red light activates with assembly mounted rocker switch only.

Two (2) lights shall be located in both the front and rear of the cab.

Push-Button Switch

A heavy duty metal push-button switch shall be installed on the officer's side dash to operate the Q2B siren.

Auto-Eject Battery Charger Receptacle

The battery charger receptacle shall be a Kussmaul 20 amp NEMA 5-20 Super Auto-Eject #091-55-20-120 with a cover. The Super Auto-Eject receptacle shall be completely sealed and have an automatic power line disconnect.

The receptacle shall be located outside driver's door next to handrail and the cover color shall be Yellow.

Push-Button Switch

A heavy duty metal push-button switch shall be installed on the officer's side dash to operate the air horns.

Hourmeter

A pump hourmeter shall be provided and mounted in the cab visible to the driver.

English Dominant Gauge Cluster

The cab operational instruments shall be located in the dashboard on the driver side of the cab and shall be clearly visible. The gauges in this panel shall be English dominant and shall be the following:

- Speedometer/Odometer
- Tachometer with integral hour meter
- Engine oil pressure gauge with warning light and buzzer
- Engine water temperature gauge with warning light and buzzer
- Two (2) air pressure gauges with a warning light and buzzer (front air and rear air)
- Fuel gauge
- Voltmeter
- Transmission oil temperature gauge

This panel shall be backlit for increased visibility during day and night time operations.

Cab Turn Signals

There shall be a pair of Whelen 600 LED (Light Emitting Diode) turn signal light heads with populated arrow pattern and amber lens mounted upper headlight bezel and wired with weatherproof connectors.

Headlights

The front of the cab shall have four (4) headlights. The headlights shall be mounted on the front of the cab in the lower position. The headlights shall be day time operational.

Battery Charger/Air Compressor

A Kussmaul Auto-Charge 1200 battery charger and air compressor with automatic battery charger shall be installed.

The battery charger shall be completely automatic with an output of 0-40 amps @ 12 volts DC and an input current requirement of 10 amps @ 120 volts AC.

A Kussmaul air compressor with automatic battery conditioner model 091-9-1200 shall be installed. The battery conditioner is completely automatic with a 0-40 amp output to maintain the charge in the battery system. The air compressor shall be powered by a 12 volt DC output from the battery charger and has an output of .30 cfm at 80 PSI. A pressure switch senses the system pressure and operates the compressor whenever the pressure in the air brake system drops below a pre-determined level.

Cab 12 Volt (or 24 Volt) Outlet

A plug-in type receptacle for hand held spotlights, cell phones, chargers, etc. shall be installed In cab driver side on 3 x 3 post rear facing just above engine cover, driver side dash, officer side

dash, center rear wall of center rear medical compartment up high. The receptacle shall be wired battery hot.

Battery Charger Location

The battery charger shall be located behind driver's seat.

Air Compressor Location

The air compressor shall be located behind driver's seat.

Cab USB Charging Port

A dual USB charging port for cell phones, chargers, etc. shall be installed In cab driver side on 3 x 3 post rear facing just above engine cover, driver side dash, officer side dash, center rear wall of center rear medical compartment up high. The receptacles shall be wired battery hot.

Cab Headlights

The quad cab headlight bezels shall contain rectangular sealed beam halogen lights.

DPF Regeneration Override

A momentary override switch shall be provided for the Diesel Particulate Filter (DPF) regeneration. The switch will inhibit the regeneration process until the switch is reset or the engine is shut down and restarted. The switch shall be located within reach of the driver.

BODY COMPT LEFT SIDE

Driver Side Assembly

The driver side assembly shall be constructed entirely of aluminum extrusions and interlocking aluminum plates. This aluminum modular design shall provide a high strength-to-weight ratio for increased equipment carrying capacity.

The driver side body corners shall be 6063-T5 extruded aluminum corner sections with a 3/16" (0.188") wall thickness. The side body extrusions shall be 6063-T5 aluminum tubing with a 3/16" (0.188") wall thickness and 3/16" (0.188") outside corner radius. The corners and sides shall be welded both internally and externally at each joint using an aluminum alloy welding wire.

The driver side body shall be completely sanded and deburred to assure a smooth finish and painted job color.

Driver Side Compartments

The three (3) driver side compartments shall be constructed from 3003 H14 1/8" (.125") smooth aluminum plate. The compartments shall be modular in design and shall not be a part of the body support structure.

There shall be one (1) compartment located ahead of the rear wheels. This compartment shall be approximately 42" wide x 68" high x 26" deep in the lower 57" high section and 12" deep in the upper 11" high section. The compartment shall contain approximately 39.2 cu. ft. of combined storage space. The door opening shall be approximately 42" wide x 68" high.

There shall be one (1) compartment located over the rear wheel. This compartment shall be approximately 56" wide x 34" high x 26" deep in the lower 23" high section and 12" deep in the upper 11" high section and contain approximately 23.6 cu. ft. of storage space. The door opening shall be approximately 56" wide x 34" high.

There shall be one (1) compartment located behind the rear wheel. The compartment shall be approximately 56" wide x 68" high. The forward area of the compartment shall be approximately 42" wide x 68" high x 26" deep in the lower 57" high section and 12" deep in the upper 11" high section. The enhanced extended rear portion of the compartment shall be approximately 14" wide x 68" high x 24" deep in the lower 57" high section and 11" deep in the upper 38" high section. The total combined storage space shall be approximately 51.7 cu. ft. The door opening shall be approximately 56" wide x 68" high.

Each compartment seam shall be sealed using a permanent pliable silicone caulk. The walls of each compartment shall be machine-louvered for adequate ventilation.

An externally-mounted compartment top shall be provided and constructed of a 1/8" (.125") aluminum treadplate.

BODY COMPT RIGHT SIDE

Officer Side Assembly

The officer side assembly shall be constructed entirely of aluminum extrusions and interlocking aluminum plates. This aluminum modular design shall provide a high strength-to-weight ratio for increased equipment carrying capacity.

The officer side body corners shall be 6063-T5 extruded aluminum corner sections with a 3/16" (0.188") wall thickness. The side body extrusions shall be 6063-T5 aluminum tubing with a 3/16" (0.188") wall thickness and 3/16" (0.188") outside corner radius. The corners and sides shall be welded both internally and externally at each joint using an aluminum alloy welding wire.

The officer side body shall be completely sanded and deburred to assure a smooth finish and painted job color.

Officer Side Compartments

The three (3) officer side compartments shall be constructed from 3003 H14 1/8" (.125") smooth aluminum plate. The compartments shall be modular in design and shall not be a part of the body support structure.

There shall be one (1) compartment located ahead of the rear wheel. The compartment shall be approximately 42" wide x 68" high x 26" deep in the lower 30" high section and 12" deep in the upper 38" high section. The compartment shall contain approximately 30 cu. ft. of combined storage space. The door opening shall be approximately 42" wide x 68" high.

There shall be one (1) compartment located over the rear wheel. The compartment shall be approximately 56" wide x 34" high x 12" deep and contain approximately 13.2 cu. ft. of storage space. The door opening shall be approximately 56" wide x 34" high.

There shall be one (1) compartment located behind the rear wheel. The compartment shall be approximately 56" wide x 68" high. The forward area of the compartment shall be 42" wide x 30" high x 26" deep in the lower area and 42" wide x 38" high x 12" deep in the upper area. The enhanced extended rear portion of the compartment shall be approximately 14" wide x 68" high x 24" deep in the lower 30" high section and 11" deep in the upper 38" high section. The total combined storage space shall be approximately 39.5 cu. ft. The door opening shall be approximately 56" wide x 68" high.

Each compartment seam shall be sealed using a permanent pliable silicone caulk. The walls of each compartment shall be machine-louvered for adequate ventilation.

An externally-mounted compartment top shall be provided and constructed of a 1/8" (.125") aluminum treadplate.

Storage Tunnel

The area directly behind the upper area of the officer side compartments shall be for the storage of NFPA equipment.

BODY COMPT REAR

Rear Body Assembly

The rear body shall be constructed entirely of aluminum extrusions and interlocking aluminum plates and includes a full height center rear compartment.

The rear body frame shall be 6063-T5 1.5" x 4" and 1.5" x 3" aluminum extrusions with a 3/16" (0.188") wall thickness and 3/16" (0.187") outside corner radius and 1/8" (0.125") aluminum smooth plate. The rear extrusions shall be welded both internal and external at each joint using an aluminum alloy welding wire.

Rear Body Compartment

The full height center rear compartment shall be constructed from 3003 H14 1/8" (.125") smooth aluminum plate. The compartment shall be modular in design and shall not be a part of the body support structure.

The compartment shall be approximately 38" wide and shall vary in height and depth dependent upon water tank capacity.

The compartment seams shall be sealed using a permanent pliable silicone caulk. Machined louvers shall be provided for adequate ventilation.

Storage Compartments

A storage compartment shall be provided at the rear body compartment. The storage compartment shall be located to the officer side of the rear compartment.

The storage compartment shall be approximately 13" wide x 29" high x length of side assembly. The storage compartment shall store NFPA equipment.

The storage compartment shall include a vertical hinged door to secure contents. The door shall be constructed of 3/16" (.187") aluminum smooth plate and shall have a push-button style latch. The compartment door shall be securely attached with a full-length stainless steel piano type hinge with 1/4" pin (outboard standard design, inboard when rear body includes beaver tail). The hinge shall be "staked" on every other knuckle to prevent the pins from sliding. The door shall be wired to the door ajar indicator light in the cab and shall be interlocked with the parking brake per NFPA.

Tailboard Step

A tailboard step shall be provided at the rear of the body. The tailboard shall 15.5" in depth and in accordance with NFPA in both step height and stepping surface. The maximum rear step height to the tailboard shall not exceed 24".

The tailboard step shall be formed from 3/16" (0.188") aluminum treadplate and shall be reinforced with 6063-T5 1.5" x 3" aluminum extrusion. The tailboard shall be in accordance with current NFPA requirements and shall include a multi-directional aggressive gripping surface incorporated into the diamond plate. The surface shall extend vertical from the diamond plate sheet a minimum of 1/8" (0.125")Gripping surfaces shall be circular in design, a minimum of 1" diameter and on centers not to exceed 4".

The tailboard step shall be bolted on to the body from the underside assuring a clear surface and shall be easily removable for replacement in the case of damage.

Enhanced Extended Compartment Framework

Each side of the tailboard shall be the external compartment frame work of the enhanced extended side compartments. The compartment frame work shall be 6063-T5 1.5"x 4"and 1.5" x

3" aluminum extrusions with a 3/16"(0.188") wall thickness and 3/16" (0.188") outside corner radius. The rear extrusions shall be welded both internally and externally at each joint using an aluminum alloy welding wire.

Rear Access Handrails

Handrails shall be provided at the rear of the body to assist ground personnel accessing the tailboard step and hosebed area. Each handrail shall be constructed of 6063T5 1.25" OD anodized aluminum tube, with an integral ribbed surface to assure a good grip for personnel safety, and shall be mounted between chrome stanchions.

The handrails shall be located- two (2) handrails, one (1) on each side, appropriately sized handrail mounted vertical on the trailing edge of the body and appropriately sized handrail(s) mounted horizontal below the rear hosebed opening.

Enhanced Extended

Enhanced Extended Compartmentation stepped down below hosebed level. Includes embossed diamond plate compartment tops.

DOORS

Roll Up Compartment Door

A ROM brand roll up door with satin finish shall be provided on a compartment up to 45" tall. The door(s) shall be installed in the following location(s): L2, R2.

The Robinson door slats shall be double wall box frame and manufactured from anodized aluminum. The slats shall have interlocking end shoes on each slat. The slats shall have interlocking joints with a PVC/vinyl inner seal to prevent any metal to metal contact and inhibit moisture and dust penetration.

The track shall be anodized aluminum with a finishing flange incorporated to provide a finished look around the perimeter of the door without additional trim or caulking. The track shall have a replaceable side seal to prevent water and dust from entering the compartment.

The doors shall be counterbalanced for ease in operation. A full width latch bar shall be operable with one hand, even with heavy gloves. Securing method shall be a positive latch device.

A magnetic type switch integral to the door shall be supplied for door ajar indication and compartment light activation.

The door opening shall be reduced by 2" in width and approximately 8-9" in height depending on door height.

Roll Up Compartment Door

A ROM brand roll up door with satin finish shall be provided on a compartment greater than 45" tall. The door(s) shall be installed in the following location(s): L1, L3, R1, R3, B1.

The Robinson door slats shall be double wall box frame and manufactured from anodized aluminum. The slats shall have interlocking end shoes on each slat. The slats shall have interlocking joints with a PVC/vinyl inner seal to prevent any metal to metal contact and inhibit moisture and dust penetration.

The track shall be anodized aluminum with a finishing flange incorporated to provide a finished look around the perimeter of the door without additional trim or caulking. The track shall have a replaceable side seal to prevent water and dust from entering the compartment.

The doors shall be counterbalanced for ease in operation. A full width latch bar shall be operable with one hand, even with heavy gloves. Securing method shall be a positive latch device.

A magnetic type switch integral to the door shall be supplied for door ajar indication and compartment light activation.

The door opening shall be reduced by 2" in width and approximately 8-9" in height depending on door height.

SHELVES

Adjustable Shelf

There shall be an aluminum adjustable shelf provided for compartment L1, L2, L3.

The shelf shall be constructed of 3/16" (.187") smooth aluminum plate. The shelf shall have a minimum 2" front and rear lips to accommodate optional plastic interlocking compartment tile systems. For additional strength and reinforcement of the shelf a return break shall be provided on the outward lip. The adjustable shelf shall be capable of holding 250 lbs.

The shelf shall be sized, width and depth, to match the size and location in the compartment.

Adjustable Shelf

There shall be an aluminum adjustable shelf provided in the upper area of compartment R2, R1 upper, the shelf shall be notched into extended side compartment area.

The shelf shall be constructed of 3/16" (.187") smooth aluminum plate. The shelf shall have a minimum 2" front and rear lips to accommodate optional plastic interlocking compartment tile systems. The adjustable shelf shall be capable of holding 100 lbs.

The shelf shall be sized, width and depth, to match the size and location in the compartment.

Adjustable Tracks

Tracks shall be provided in L1, L2, L3, R1 lower, R3 lower for use with adjustable shelves and/or trays in deep non-transverse compartments. The tracks shall be vertically mounted and attached to the side and/or rear walls of the compartments.

Adjustable Tracks

Tracks shall be provided in R2, R1 upper for use with shallow depth adjustable shelves. The tracks shall be vertically mounted and attached to the side and/or rear walls of the compartments.

TRAYS / TOOLBOARDS

Roll-Out/Tilt-Down Tray

A roll-out/tilt-down tray shall be adjustable mounted in compartment L1, L2, L3, R1, R3. For use on single depth or rescue style compartments.

The tray shall be constructed of 3/16" (.187) aluminum with welded corners for strength and rigidity. The tray shall be sized in width and depth as applicable.

An Innovative Industries SlideMaster Tip Down frame and channel assembly shall be provided for the tray for the ease of operation and long service life. A positive twist lock shall be provided to lock the tray in the stored position. The tray shall roll out approximately 90% from its stored position and shall tip 30 degrees from horizontal.

The capacity rating of the tray, in the extended position, shall be 250 lbs. distributed.

Runningboard Suction Tray

A running board suction hose storage tray "floating style" shall be provided and located in the driver side running board, officer side running board.

The tray shall be "floating style" mounted and constructed of 1/8" (.125") aluminum diamond plate (exterior) with a smooth sanded surface interior. The bottom of the tray shall have removable aluminum slats and drain holes to allow water drainage from hose stored in the tray. The tray shall have a 3" tapered front corner to protect tray againist debris. The tray shall be removable for the running board.

Roll-Out Tray

There shall be a floor mounted roll-out tray provided in compartment L1, L3, R1, R3, B1.

The roll-out tray shall be constructed of 3/16" (.187") smooth aluminum plate with a sanded finish and welded corners for increased strength and rigidity. The tray shall be sized in width and depth as applicable.

For greater tray accessibility, the drawer slides shall feature one hundred percent extension. The tray shall utilize a gas spring to secure the tray in the open or closed position.

The tray shall have a total capacity of 500 lbs.

COVERS

Rear Hose Bed Cover

A cover constructed of heavy duty black nylon cargo netting shall be installed at the rear apparatus hose bed.

The bottom of the cargo netting shall be mechanically attached to the hose bed. The cover shall be attached to comply with the latest edition of NFPA 1901.

Cover shall secure the hoseload at the rear open back of the hosebed and shall compliment separate top cover of vinyl, diamond plate pr similar cover that secures top of body open areas over hoseload.

Hose Bed Cover

The hose bed area shall have a two (2) piece light weight aluminum hose bed cover. The hose bed cover shall be provided in compliance with NFPA.

Each hose bed cover shall be constructed of an aluminum extrusion frame with a 1/8" (.125") embossed aluminum treadplate top. Each cover door shall be securely attached to the hose bed side with a full-length stainless steel piano type hinge. The hinge shall have 1/4" pins and shall be "staked" on every other knuckle to prevent pin slippage.

Each cover shall include two (2) hold opens per cover. The forward area of the cover shall have one (1) pneumatic shock. The rear of the cover shall have one (1) positive hold open/hold closed that shall include one (1) manually engaged securing pin.

Each cover shall include two (2) assist handles, one (1) grab handle (forward) and one (1) hand rail (rearward). The rearward hand rails shall be installed in compliance with current NFPA. The hand rails shall be constructed of 6063T5 1.25" OD anodized aluminum tube, with an integral ribbed surface to assure a good grip for personnel safety, mounted between chrome stanchions.

The water tank fill tower(s) shall be accessible with the covers in the closed position through a diamond plate door (or as applicable). The fill tower access door shall be constructed of 1/8"

(.125") embossed aluminum treadplate. The door shall be hinged and shall include one (1) hold down and grab handle.

The covers shall be supported in the closed position by a center mounted hose bed divider. The divider shall be constructed of 1/4" (.250") smooth aluminum plate with a scotch-brite finish. The divider shall run the full length of the hose bed and shall include an upper "C" channel extrusion base. The rear of the divider shall be recessed rearward to allow for looping of hose from one side of the divider to the other (as applicable).

Each cover door shall be wired to the door ajar indicator light in the cab and shall be interlocked with the parking brake per NFPA.

Requires intermediate rear step except for extended enhanced compartments.

Speedlay Cover - Sides

A pair of covers constructed of heavy duty black nylon cargo netting shall be installed over the side openings of the apparatus speedlay.

The covers shall be secured in place to comply with the latest edition of NFPA 1901.

Running Board Tray Securing Strap

A heavy duty black nylon strap with an aluminum quick-release buckle shall be provided for the running board hose tray(s). The strap shall be attached to the inboard side of the tray as low as practical to allow cinching of strap for securing tray contents and shall not reduce the overall tray capacity.

Location: driver side running board, officer side running board.

PUMP MODULE

Pump Module Width

Pump module shall be 76" wide.

Pump Module

Pump Module Frame

An extruded aluminum pump module shall be provided and located forward of the apparatus body. The pump module shall be constructed entirely of welded aluminum alloy extrusions and interlocking aluminum plates. The pump module framework shall consist of 1.5" x 3" x .188" wall, 1.5" x 3" x .375" wall with center web and 3" x 3" x .188" wall extrusions.

The pump module design and mounting shall be separate from the body to allow the pump module and body to move independently of each other in order to reduce stress from frame twisting and vibration.

The exterior surface of the pump module framework shall have a sanded finish.

Pump Module Mounting

The pump module shall be attached to the chassis using four (4) center bonded isolation mounts and a steel mounting frame. The isolation mounts shall be 2.75" diameter and mount to the chassis with two (2) 4" x 4" x .312" A36 steel angles.

Pre-connect Storage

Two (2) transverse storage areas shall be encorporated into the module to accomodate preconnected handlines. Plumbing for the handlines shall be located at the upper back wall of the storage area to facilitate use of optional removable trays. The floors of the pre-connect areas shall be constructed from .125" smooth aluminum plate. The floors shall be slotted to prevent the accumulation of water and allow for ventilation of wet hose.

Top Mounted Pump Control Area

The upper area of the module shall be configured for a top mount pump operator`s panel. The upper side walls of the module shall be notched rearward to the speedlay area and tapered for improved operator visibility.

Crosswalk

An extruded aluminum crosswalk shall be provided at the front of the pump module. The crosswalk shall be integral to the pump module and be constructed entirely of aluminum extrusions. The crosswalk walkway shall be in accordance with NFPA in both step height and stepping surface. The crosswalk walkway floor shall be formed from .188" aluminum treadplate. The walkway floor shall be bolted on to the module and be easily removable to service chassis components or for replacement in the case of damage.

The crosswalk entry shall include two (2) 5" wide formed diamond plate steps located one (1) on each side offset forward and two (2) handrails, a minimum 24" long, located one (1) on each side mounted vertically on the forward extrusion of the pump module.

Pump Module Running Boards

The pump module shall include a running board on each side. The running boards shall be in accordance with NFPA in both step height and stepping surface. The running boards shall be formed from .125" aluminum treadplate. Each running board shall be bolted on to the pump module and be easily removable for replacement in the case of damage.

Stepping Surfaces

The top mount crosswalk and each running board shall include a multi-directional, aggressive gripping surface incorporated into the treadplate. The surface shall extend vertically from the diamond plate sheet a minimum of .125". Gripping surfaces shall be circular in design, a minimum of 1" diameter and on centers not to exceed 4".

Pump Panel Opening

The panel opening on the pump module shall be 39" wide.

Pump Module Height

The pump module height shall be 85".

Crosswalk Module Step(s) Offset

The walkway step(s) shall be offset to the rear to accommodate pole/tripod light or other options located on the back of the cab. If equipped, the tool storage compartment door(s) shall be reduced in size.

PUMP PANELS

Top Mount Pump Panels

The top mount gauge panel, driver and officer side pump panels shall be constructed of 14 gauge stainless steel.

The top mount gauge panel shall be able to lift forward for access to panel mounted electrical connections.

The driver and officer panels shall have the ability to be removed from the module for easier access and for maintenance in the pump area.

Pump Access Doors

The driver and officer side pump module shall include an upper horizontal-hinged pump access door.

The doors shall be constructed of 14 gauge brushed stainless steel. The compartment doors shall be securely attached with a full-length stainless steel piano type hinge with 1/4" pins. The hinge shall be "staked" on every other knuckle to prevent the pin from sliding. The doors shall include two (2) push-button style latches to secure the doors in the closed position and two (2) hold-open devices to hold the doors in the open position.

MISC PUMP PANEL OPTIONS

Pump Panel Tags

Color coded pump panel labels shall be supplied to be in accordance with NFPA 1901 compliance.

Air Outlet

A 1/4" female air hose fitting shall be mounted with a 1/4" valve. The fitting and valve shall be connected to the air reservoir tank.

Location: driver's side pump panel.

PUMP MODULE OPTIONS

Flex Joint

The area between the pump modules and body shall include a rubber flex joint.

Spacer Plate Quartz Lights

Spacer plate for quartz lights. Requires 4" additional to cab and body gap.

Module Logos

Logos with the OEM brand name shall be provided and shall be mounted one (1) each side on pump module/pre-connect panels. Logos shall be sized as applicable to available space on panel(s).

Air Horn Switch

A heavy duty weatherproof push-button switch shall be installed at the pump operator`s panel to operate the air horns.

The switch shall be labeled "Evacuation Alert".

Location: top mount control panel.

Removable Poly Speedlay Tray [Qty: 2]

The speedlay areas shall include storage trays. The trays shall be constructed of 1/2" PT2E polypropylene. The floor of the tray shall be slotted to prevent the accumulation of water and

allow for ventilation of wet hose. The trays shall have vertical slots on each end to facilitate in grabbing the tray during loading and unloading.

The tray shall also have horizontal slots on the upper sides to facilitate in carrying the tray.

Storage Pan

A storage pan shall be provided in the upper pump module area. The pan shall be constructed of 3/16" (.188") aluminum treadplate and be removable to service items in the pump module below. Holes shall be provided in the corners of the pan to facilitate drainage of water.

Top Mount Walkway Compartments

The area directly below the top mount pump panel walkway shall include two (2) compartments, located one (1) each side. Each compartment shall provide approximately 1.5 cu. ft. of storage space (2.5 cu. ft. if equipped with speedlays). The compartments shall include spring loaded, vertically-hinged 1/8" (.188") aluminum treadplate door with a push-button latch. A switch wired to the door ajar indicator light in the cab shall be provided. One (1) LED light shall be installed in each compartment.

WATER TANK

780 Gallon Water Tank

A 780 gallon (U.S.) "R" booster tank shall be supplied.

The booster tank shall be constructed of polypropylene material. The booster tank shall be completely removable without disturbing or dismounting the apparatus body structure. The top of the booster tank is fitted with removable lifting assembly designed to facilitate tank removal.

The booster tank top, sides, and bottom shall be constructed of a minimum 1/2" (0.50") thick black UV-stabilized copolymer polypropylene. Joints and seams shall be fused using nitrogen gas as required and tested for maximum strength and integrity. The tank construction shall include technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method will provide a liquid barrier offering leak protection in the event of a weld compromise. The tank cover shall be constructed of 1/2" thick polypropylene and UV stabilized, to incorporate a multi-piece locking design, which allows for individual removal and inspection if necessary. The tank cover(s) shall be flush or recessed 3/8" from the top of the tank and shall be fused to the tank walls and longitudinal partitions for maximum integrity. Each one of the covers shall have hold downs consisting of 2" minimum polypropylene dowels spaced a maximum of 40" apart. These dowels shall extend through the covers and will assist in keeping the covers rigid under fast filling conditions.

The tank shall have a combination vent and manual fill tower with a hinged lid. The fill tower shall be constructed of 1/2" polypropylene and shall be a typical dimension of $8" \times 8"$ outer

perimeter (subject to change for specific design applications). The fill tower shall be blue in color indicating that it is a water-only fill tower. The tower shall have a 1/4" thick removable polypropylene screen and a polypropylene hinged cover. The capacity of the tank shall be engraved on the top of the fill tower lid.

The booster tank shall have two (2) tank plumbing openings. One (1) for a tank-to-pump suction line with an anti-swirl plate, and one (1) for a tank fill line. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates per the tank fill inlet size.

The sump shall be constructed of a minimum of 1/2" polypropylene. The sump shall have a minimum 3" N.P.T. threaded outlet for a drain plug per NFPA. This shall be used as a combination clean-out and drain. All tanks shall have an anti-swirl plate located approximately 3" above the inside floor.

The transverse and longitudinal swash partitions shall be manufactured of a minimum of 3/8" polypropylene. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow. All swash partitions interlock with one another and are completely fused to each other as well as to the walls of the tank. All partitions and spacing shall comply with NFPA 1901. The walls shall be welded to the floor of the tank providing maximum strength.

Inside the fill tower there shall be a combination vent/overflow pipe. The vent overflow shall be a minimum of schedule 40 polypropylene pipe with an I.D. of 3" or larger that is designed to run through the tank. This outlet shall direct the draining of overflow water past the rear axle, thus reducing the possibility of freeze-up of these components in cold environments. This drain configuration shall also assure that rear axle tire traction shall not be affected when moving forward.

The booster tank shall undergo extensive testing prior to installation in the truck. All water tanks shall be tested and certified as to capacity on a calibrated and certified tilting scale.

Each tank shall be weighed empty and full to provide precise fluid capacity. Each tank shall be delivered with a Certificate of Capacity delineating the weight empty and full and the resultant capacity based on weight. Engineering estimates for capacity calculations shall not be permitted for capacity certification. The tank must be designed and fabricated by a tank manufacturer that is ISO 9001:2008 certified in each of its locations. The ISO certification must be to the current standard in effect at the time of the design and fabrication of the tank.

A tag shall be installed on the apparatus in a convenient location and contain pertinent information including a QR code readable by commercially available smart phones. The information contained on the tag shall include the capacity of the water and foam(s), the maximum fill and pressure rates, the serial number of the tank, the date of manufacture, the tank manufacturer, and contact information. The QR code will allow the user to connect with the tank manufacturer for additional information and assistance.

The tank shall have a limited Lifetime warranty that provides warranty service for the life of the fire apparatus in which the tank is installed. Warranties are transferable if the apparatus ownership changes by requesting the transfer from the tank manufacturer.

Tank capacity is 780 US gallon / 649 Imperial gallons / 2952 Liters.

Fill Tower Location

Fill tower(s) shall be located offset to officer side of water tank.

TANK PLUMBING

Tank Fill 2 Akron Valve

One (1) 2" pump-to-tank fill line having a 2" manually operated full flow valve. The valve control shall be located at the pump operator's panel and shall visually indicate the position of the valve at all times. The fill line shall be controlled using a chrome handle with an integral tag.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.

The valve shall be of unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

Tank To Pump

One (1) manually operated 3" Akron valve shall be installed between the pump suction and the booster tank. Includes flex hose with stainless steel hose clamps for connection to the 4" tank sump outlet . The valve control shall be located at the pump operator`s panel and shall visually indicate the position of the valve at all times.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position and water is flowing through it.

The valve shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

A check valve shall be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank. The valve control shall be located at the pump operator's panel and shall visually indicate the position of the valve at all times.

FOAM TANK

30 Gallon Foam Tank

A 30 gallon (U.S.) foam cell for Class A foam shall be supplied. The foam cell shall be integral to the water tank.

The integral tank top, sides, and bottom shall be constructed of black polypropylene material. Joints and seams shall be fused using nitrogen gas as required and tested for maximum strength and integrity. The tank construction shall include technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method will provide a liquid barrier offering leak protection in the event of a weld compromise. The copolymer polypropylene material shall be used for its high strength and corrosion resistance for a prolonged tank life.

The foam tank shall have a manual fill tower. The fill tower shall be constructed of 1/2" polypropylene and shall be a typical dimension of 8" x 8" outer perimeter (subject to change for specific design applications). Foam fill tower shall be constructed of a Green colored material indicating type of foam utilized. The capacity of the tank shall be engraved on the top of the fill tower lid. The fill tower shall be located in the forward area of the tank. The tower shall have a 1/4" thick removable polypropylene screen. Inside the fill tower, approximately 1.5" down from the top, there shall be an anti-foam fill tube that extends down to the bottom of the tank. A pressure vacuum vent shall be provided in the lid of the fill tower. The foam fill tower shall be removable to facilitate the cleaning of the foam tank.

The foam tank shall undergo extensive testing prior to installation in the truck. All foam tanks shall be tested and certified as to capacity. The tank must be designed and fabricated by a tank manufacturer that is ISO 9001:2008 certified in each of its locations. The ISO certification must be to the current standard in effect at the time of the design and fabrication of the tank.

The tank shall have a limited Lifetime warranty that provides warranty service for the life of the fire apparatus in which the tank is installed. Warranties are transferable if the apparatus ownership changes by requesting the transfer from the tank manufacturer.

LADDER STORAGE / RACKS

Hard Suction Hose Rack

One (1) hard suction hose storage rack shall be provided on the driver side compartment top.

The storage rack shall be constructed of anodized extruded aluminum and includes two (2) spring-mounted latch handles with stainless steel scuff plates. The scuff plates shall be located on the hose bed side to protect the painted surface.

The storage rack shall be capable of storing one (1) 6" x 10` hard suction hose.

Hard Suction Hose Rack

One (1) hard suction hose storage rack shall be provided on the officer side compartment top.

The storage rack shall be constructed of anodized extruded aluminum and includes two (2) spring-mounted latch handles with stainless steel scuff plates. The scuff plates shall be located on the hose bed side to protect the painted surface.

The storage rack shall be capable of storing one (1) 6" x 10' hard suction hose.

Ladder Brand

The ladder brand capable of being carried on the unit shall be Alco-Lite.

Ladders

The length of ladders capable of being stored shall be the following: 24' 2-section, 14' roof ladder and 10' attic ladder w/shoes.

Storage Tunnel Contents

Storage tunnel capable of holding (1) 2-section, (1) roof, (1) attic, (2) pike poles, (1) backboard in Officer.

HANDRAILS / STEPS

Hose Bed Folding Steps

Innovative Controls dual lighted LED folding steps shall be positioned to the driver side rear of the body. The steps shall be NFPA compliant for access to the hose bed storage area and in step height and surface area. The steps shall be staggered stepped as applicable with tailboard depth, not applicable with recessed step mounting.

Innovative Controls dual lighted folding step with LED lights integral to the step on the top to provide NFPA requirements of 2 fc (20 lx) on the stepping surface. Folding step shall also have a LED light integral to the bottom of the step to meet NFPA requirements of a stepping surface up to 18" below the step. The folding step shall sustain a minimum static load of 500 lb with a 3 to 1

safety factor. The folding step shall also meet NFPA slip resistance qualifications. Corrosion resistance shall be demonstrated by a 1000 hr salt spray test with no visible signs of deterioration of the step body or hardware.

One (1) hand rail shall be installed (as applicable) in compliance with current NFPA. The hand rail shall be constructed of 6063T5 1.25" OD anodized aluminum tube, with an integral ribbed surface to assure a good grip for personnel safety, mounted between chrome stanchions.

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Folding Steps [Qty: 4]

Innovative Controls dual lighted LED folding step(s) shall be located officer side front compartment face, driver side front compartment face. The folding step(s) shall meet current NFPA in step height and surface area.

Innovative Controls dual lighted LED folding step with LED lights integral to the step on the top to provide NFPA requirements of 2 fc (20 lx) on the stepping surface. Folding step shall also have a LED light integral to the bottom of the step to meet NFPA requirements of a stepping surface up to 18" below the step. The folding step shall sustain a minimum static load of 500 lb with a 3 to 1 safety factor. The folding step shall also meet NFPA slip resistance qualifications. Corrosion resistance shall be demonstrated by a 1000 hr salt spray test with no visible signs of deterioration of the step body or hardware.

One (1) hand rail shall be installed in compliance with current NFPA. The hand rail shall be constructed of 6063T5 1.25" OD anodized aluminum tube, with an integral ribbed surface to assure a good grip for personnel safety, mounted between chrome stanchions.

MISC BODY OPTIONS

Rear Mud Flaps

The rear tires shall have a set of black mud flaps mounted behind the rear chassis wheels with E-ONE logo.

Body Mainframe

The body mainframe shall be entirely constructed of aluminum. The complete framework shall be constructed of 6061T6 and 6063T5 aluminum alloy extrusions welded together using 5356 aluminum alloy welding wire.

The body mainframe shall include 3" x 3" 6061-T6 aluminum 3/8" (0.375") wall crossmember extrusion or 3" x 3" I-beam section aluminum extrusion depending on the application at the front of the body . A solid 3" x 3" "I-beam" section aluminum extrusion shall be provided the full width of the body forward and rearward of the rear wheel well. The crossmembers shall be designed to support the compartment framing and shall be welded to 1-3/16" x 3" (1.188" x 3") solid 6063-T5 aluminum frame sill extrusions. The frame sill extrusions shall be shaped to contour with the chassis frame rails and shall be protected from contact with the chassis frame rails by 5/16" x 2" (0.31" x 2") fiber-reinforced rubber strips to prevent wear and galvanic corrosion caused when dissimilar metals come in contact.

Body Mounting System

The main body shall be attached to the chassis frame rails with six (6) of 5/8" (0.625") diameter steel U-bolts. This body mounting system shall be used to allow easy removal of the body for major repair or disassembly.

Water Tank Mounting System

The body design shall allow the booster tank to be completely removable without disturbing or dismounting the apparatus body structure. The water tank shall rest on top of a 3° x 3° frame assembly covered with rubber shock pads and corner braces formed from $3/16^{\circ}$ angled plate to support the tank. The booster tank mounting system shall utilize a floating design to reduce stress from road travel and vibration. To maintain low vehicle center of gravity the water tank bottom shall be mounted within 5" of the frame rail top.

Hosebed Side Assembly

The hosebed side assemblies shall be made of $3" \ge 3"$ slotted aluminum extrusion and 3/16" (.188") smooth plate. The hosebed side assemblies shall provide a 85" high body.

The exterior hosebed side surface shall be completely sanded and deburred to assure a smooth finish and painted job color. The interior hosebed side surface shall be completely sanded and deburred to assure a smooth sanded finish.

Hosebed

The area above the booster tank shall have a hose storage area provided. The hosebed shall be constructed entirely from maintenance-free, 3/4" deep x 7.5" wide, extruded aluminum slats that shall be pop-riveted into a one-piece grid system. Each slat shall have all sharp edges removed and have an anodized ribbed top surface that shall prevent the accumulation of water and allow for ventilation of wet hose.

The hosebed shall include an open area for the fill tower(s). The hosebed design shall incorporate adjustable tracks in the forward area rearward of the fill tower(s) and the rearward area of the hosebed for the installation of an adjustable divider(s). The adjustable tracks shall hold an adjustable divider(s) mounting nut straight, so only a philips head screwdriver is required to adjust a divider(s) from side to side (as is practical with other hosebed mounted equipment).

The hosebed shall be easily removable to allow access to the booster tank below.

Hose Bed Divider

There shall be a hose bed divider provided the full fore-aft length of the hose bed.

The hose bed divider shall be constructed of 1/4" (0.25") smooth aluminum plate with an extruded aluminum base welded to the bottom. The rear end of the divider shall have a 3" radius corner to protect personnel. The divider shall be natural finish aluminum for long-lasting appearance and shall be sanded and de-burred to prevent damage to the hose.

The divider shall be adjustable from side to side in the hose bed to accommodate varying hose loads.

Hose Bed Divider

There shall be a hose bed divider provided behind the fill towers and shall be fore-aft length of the hose bed.

The hose bed divider shall be constructed of 1/4" (0.25") smooth aluminum plate with an extruded aluminum base welded to the bottom. The rear end of the divider shall have a 3" radius corner to protect personnel. The divider shall be natural finish aluminum for long-lasting appearance and shall be sanded and de-burred to prevent damage to the hose.

The divider shall be adjustable from side to side rearward of the fill towers to accommodate varying hose loads.

Hose Bed Divider Hand Hold

There shall be a hand hole cut-out(s) on the trailing edge of each hose bed divider. The cut-out(s) is specifically sized for use in adjusting of the hose bed divider.

Fuel Fill

A recessed fuel fill shall be provided at the driver side rear wheel well area.

Body Wheel Well

The body wheel well frame shall be constructed from 6063-T5 aluminum extrusion with a slot the full length to permit an internal fit of 1/8" (0.125") aluminum treadplate. The wheel well trim fenderett shall be constructed from 6063-T5 formed aluminum extrusion. The wheel well liners shall be constructed of a 3/16" (.187") composite material. The liners shall be bolt-on and shall provide a maintenance-free and damage-resistant surface.

Rub Rail

The pump area module(s) and body shall have rub rails mounted along the sides and at the rear. **

The rub rail shall be C-channel in design and constructed of 3/16" thick 6463T6 anodized aluminum extrusion. The rub rail shall be 2.75" high x 1.25" deep and shall extend beyond the body width to protect compartment doors and the body side. The rub rail depth shall allow marker and/or warning lights to be recessed inside for protection.

The top surface of the rub rail shall have minimum of five (5) raised serrations. Each serration being a minimum of .1" in height and with cross grooves to provide a slip-resistant edge for the tailboard step and pump module running board areas. The rub rail shall be mounted a minimum of 3/16" off the pump module and body with nylon spacers. The ends of each section shall be provided with a finished rounded corner piece.

** 4x4 applications with 30 degree departure angle and flip down tailboard shall omit the rear body rub rails as noted above and shall have the trailing piece of the side rub rails behind rear axle attached in 2 pieces with the rearward piece mounted on an upward angle to match departure angle body. Rearward side marker light as located in rear rub rail shall be mounted angled in the rearward rail as added.

SCBA BOTTLE STORAGE

SCBA Strap

Straps shall be provided in each exterior storage compartment to provide secondary means to hold each SCBA bottle in the compartment. The straps shall be constructed from 1" nylon webbing formed in a loop. The strap(s) shall be mounted to the storage compartment ceiling directly inside the door opening at each bottle location.

SCBA 1 BOTTLE STORAGE FIRE SHOPP

Fire Shopp brand (1) SCBA bottle storage with hinged door and push button latch shall be provided in the body wheel well area.

The door shall have a brushed stainless steel finish.

The door shall NOT cover the recessed fuel fill if located adjacent to the SCBA storage.

Location:driver side rear wheel well offset forward, driver side rear wheel well offset rearward

SCBA 1 BOTTLE STORAGE CAST PRODUCTS

Cast Products brand (1) SCBA bottle storage with gasketed door and push button latch shall be provided in the body wheel well area.

The door shall NOT cover the recessed fuel fill if located adjacent to the SCBA storage.

Location:officer side rear wheel well offset forward, officer side rear wheel well offset rearward

PUMPS

Pump Rating

The fire pump shall be rated at 1750 GPM.

Fire Pump System

The pump shall be a midship-mounted Hale QMAX single stage centrifugal pump. The pump shall be mounted on the chassis frame rails of commercial or custom truck chassis and have the capacity of 1,250 to 2,250 gallons per minute (U.S. GPM) NFPA 1901 rated performance, and shall be split-shaft driven from the truck transmission.

The entire pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 psi (207 MPa). All metal moving parts in contact with water shall be of high quality bronze or stainless steel. Pump body shall be horizontally split in two sections, for easy removal of impeller assembly including wear rings and bearings from beneath the pump without disturbing pump mounting or piping.

The pump impeller shall be hard, fine grain bronze of the mixed flow design and shall be individually ground and hand balanced. Impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body, and of wrap-around double labyrinth design for maximum efficiency. The pump shaft shall be heat-treated, corrosion-resistant stainless steel and shall be rigidly supported by three (3) bearings for minimum deflection. The sleeve bearing is to be lubricated by a force fed, automatic oil lubricated design, pressure-balanced to exclude foreign material. The remaining bearings shall be heavy-duty, deep groove ball bearings in the gearbox and shall be splash-lubricated. Pump shaft must be sealed with double-lip oil seal to keep road dirt and water out of the gearbox.

Two (2) 6" diameter suction ports with 6" NST male threads and removable screens shall be provided, one each side. The ports shall be mounted one (1) on each side of the midship pump and shall extend through the side pump panels. Inlets shall come equipped with long handle chrome caps.

Discharge Manifold

The pump system shall utilize a stainless steel discharge manifold system that allows a direct flow of water to discharge valves. The manifold and fabricated piping systems shall be constructed of a minimum of Schedule 10 stainless steel to reduce corrosion.

Pump Shift

The pump shift shall be pneumatically-controlled using a power shifting cylinder.

The power shift control valve shall be mounted in the cab and be labeled "PUMP SHIFT". The apparatus transmission shift control shall be furnished with a positive lever, preventing accidental shifting of the chassis transmission.

A green indicator light shall be located in the cab and be labeled "PUMP ENGAGED". The light shall not activate until the pump shift has completed its full travel into pump engagement position.

A second green indicator light shall be located in the cab and be labeled "OK TO PUMP". This light shall be energized when both the pump shift has been completed and the chassis automatic transmission has obtained converter lock-up (4th gear lock-up).

Test Ports

Two (2) test plugs shall be pump panel mounted for third party testing of vacuum and pressures of the pump.

Gearbox Cooler

A gearbox cooler shall be provided to maintain safe operating temperatures during prolonged pumping operations for pump rating 1500 GPM and over.

PUMP CERTIFICATION

Pump Certification

The pump, when dry, shall be capable of taking suction and discharging water in accordance with current NFPA 1901. The pump shall be tested at the manufacturer's facility by an independent, third-party testing service. The conditions of the pump test shall be as outlined in current NFPA 1901.

The tests shall include, at a minimum, the pump test, the pumping engine overload test, the pressure control system test, the priming device tests, the vacuum test, and the water tank to pump flow test as outlined in current NFPA 1901.

A piping hydrostatic test shall be performed as outlined in current NFPA 1901.

The pump shall deliver the percentage of rated capacities at pressures indicated below:

100% of rated capacity at 150 psi net pump pressure 100% of rated capacity at 165 psi net pump pressure 70% of rated capacity at 200 psi net pump pressure 50% of rated capacity at 250 psi net pump pressure

A test plate, installed at the pump panel, shall provide the rated discharges and pressures together with the speed of the engine as determined by the certification test, and the no-load governed speed of the engine.

A Certificate of Inspection certifying performance of the pump and all related components shall be provided at time of delivery. Additional certification documents shall include, but not limited to, Certificate of Hydrostatic Test, Electrical System Performance Test, Manufacturer's Record of Pumper Construction, and Certificate of Pump Performance from the pump manufacturer.

PUMP OPTIONS

Steamers, Flush+1

The pump 6" steamer intake(s) shall be mounted approximately 1" from the pump panel to back of cap when installed. The "Flush+1" dimension can vary + or - 1-1/4" or as practicable depending on the pump module width and options selected. (Example 72" or 76" modules.)

Location: driver's side, officer's side.

Zinc Anodes

The zinc anodes help prevent damage caused by galvanic corrosion within the fire pump. The system provides a sacrificial metal which helps to diminish or prevent pump and pump shaft galvanic corrosion. One anode will be located on the suction side and one will be located on the discharge side of the pump.

Thermal Relief Valve

A Hale TRVL-120 thermal relief valve shall be provided.

The valve shall help protect the pump by automatically monitoring pump water temperature. The relief valve shall automatically dump a controlled amount of water to the ground when the pump water exceeds the pre-set temperature of the relief valve.

A pump panel mounted indicator shall be installed at the pump operator`s panel.

Manual Pump Shift Override

One (1) manual pump shift override shall be side panel mounted to engage the pump in the event of an air pressure failure. The pump shift shall be operated by a chrome handled push-pull cable.

Pump Seal Packing

The pump shaft shall have only one (1) packing gland located on the inlet side of the pump. It shall be of split design for ease of repacking. The packing gland shall be of a design to exert uniform pressure on packing and to prevent cocking and uneven packing load when tightened. The packing rings shall be permanently lubricated, graphite composition and have sacrificial zinc foil separators to protect the pump shaft from galvanic corrosion.

The packing shall be easily adjusted by hand with rod or screw driver with no special tools or wrenches required.

Master Drain Valve

A manual master drain valve shall be installed on the pump panel. The master pump drain assembly shall consist of a Class 1 bronze master drain with a rubber disc seal. The master drain shall have a rubber seal to prevent water from running out on the running board.

The manual master drain valve shall have twelve (12) individual-sealed ports that allow quick and simultaneous draining of multiple intake and discharge lines. It shall be constructed of corrosion-resistant material and be capable of operating at a pressure of up to 600 PSI.

The master drain shall provide independent ports for low point drainage of the fire pump and auxiliary devices.

Pump Cooler

The pump shall have a 3/8" line installed from the pump discharge to the booster tank to allow a small amount of water to circulate through the pump casing in order to cool the pump during sustained periods of pump operation when water is not being discharged. The pump cooler line shall be controlled from the pump operator's panel by a Innovative Controls 1/4 turn valve with "T" handle. Each 1/4 turn handle grip shall feature built-in color-coding labels and a verbiage tag

Trident Primer

A Trident air operated priming system shall be installed. The unit shall be of all brass and stainless steel construction and designed for fire pumps of 1,250 GPM (4,600 LPM) or more. Due to corrosion exposure no aluminum or vanes shall be used in the primer design. The primer shall be three-barrel design with $\frac{3}{4}$ " NPT connection to the fire pump.

The primer shall be mounted above the pump impeller so that the priming line will automatically drain back to the pump. The primer shall also automatically drain when the panel control actuator is not in operation. The inlet side of the primer shall include a brass "wye" type strainer with removable stainless steel fine mesh strainer to prevent entry of debris into the primer body.

The system shall create vacuum by using air from the chassis air brake system through a twobarrel multi-stage internal "venturi nozzles" within the primer body. The noise level during operation of the primer shall not exceed 75 Db.

Air Flow Requirements

The primer shall require a minimum of 15.6 cubic foot per minute air compressor and shall be capable of meeting drafting requirements at high idle engine speed. The air supply shall be from a chassis supplied "protected" air storage tank with a pressure protection valve. The air supply line shall have a pressure protection valve set between 70 to 80 PSIG.

Primer Control

The primer control shall have a manually operated, panel mounted "push to prime" air valve. The valve shall direct air pressure from the air brake storage tank to the primer body. To prevent freezing, no water shall flow to and from the panel control.

Warranty

The primer shall be covered by a five (5) year parts warranty.

INTAKES

Intake 2.5 Top Mount Control Akron Valve

One (1) 2-1/2" suction inlet with a manually operated 2-1/2" Akron valve shall be provided on the driver side pump panel, officer side pump panel.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position and water is flowing through it.

The valve shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

The outlet of the valve shall be connected to the suction side of the pump with the valve body located behind the pump panel. The valve shall come equipped with a brass inlet strainer, 2-1/2" NST female chrome inlet swivel and shall be equipped with a chrome plated rockerlug plug with a retainer device.

The valve shall be controlled by a vertically mounted quarter turn locking handle located on the top mounted pump operator's panel and shall visibly indicate the position of the valve at all times.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance, and decreased friction loss.

A 3/4" bleeder valve assembly will be installed on the side pump panel.

Front Intake with Valve 5 with Relief

A 5" stainless steel pipe shall extend from the right intake side of the pump to the front of the apparatus. The intake shall be controlled by a 5" butterfly valve and shall be air operated and controlled from the operator's panel. A valve(s) shall be provided to allow water to be drained. An intake relief valve shall be installed external of the butterfly valve to relieve excess pressure.

INTAKE OPTIONS

Intake Relief Valve

The pump shall be equipped with an Akron style 59 cast brass, variable-pressure-setting relief valve on the pump suction side. It shall be designed to operate at a maximum inlet pressure of 250 PSI. The relief valve shall be normally closed and shall be set to begin opening at 125 PSI in order to limit intake pressures in the pumping system. When the relief valve opens, the overflow water shall be directed through a plumbed outlet to discharge below the body in an area visible to the pump operator. The overflow outlet shall terminate with a male 2-1/2" NST threaded fitting to allow the overflow water to be directed away from the vehicle with a short hose (supplied by the fire department) during freezing weather or under other conditions where an accumulation of water around the apparatus might be hazardous.

Front Intake Swivel, 5"

A heavy duty 5" 90 degree cast brass elbow designed and constructed specifically for fire/emergency vehicle usage shall serve as the auxiliary front suction inlet. The elbow, also referred to as the "swivel", shall be attached to the front suction piping. This component shall have the following features:

- 1) The ability to rotate 180 degrees.
- 2) A rugged twist-lock mechanism to hold the elbow in place at the desired position.
- 3) A double-ball race with bronze balls.
- 4) A 5" NPT free swivel female inlet.
- 5) A 5" NST male outlet with strainer.
- 6) Cast brass with polished chrome finish.

The elbow/swivel shall be mounted so that it extends above the extended front bumper.

DISCHARGES AND PRECONNECTS

Front Jump Line 1.5 Akron Valve

One (1) 1-1/2" preconnect outlet with a manually operated Akron valve shall be supplied to the extended front bumper. The preconnect shall consist of a 2" heavy duty hose coming from the pump discharge manifold to a 2" FNPT x 1-1/2" MNST mechanical swivel hose connection to permit the use of the hose from either side of the apparatus.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.

The valve shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

An air blow-out valve shall be installed between the chassis air reservoir and the front jump line. The control shall be installed on the pump operator's panel.

The discharge shall be supplied with a Class 1 automatic 3/4" drain valve assembly. The automatic drain shall have an all-brass body with stainless steel check assembly. The drain shall normally be open and automatically close when the pressure is greater than 6 psi.

The valve control shall be located at the pump operator panel and shall visually indicate the position of the valve at all times.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

Deck Gun 3" Discharge Akron Valve

One (1) 3" deck gun discharge outlet with a manually operated Akron valve and 3" stainless steel pipe shall be provided above the pump compartment.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.

The valve shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

The valve shall be equipped with a device that limits the opening and closing speeds to comply with the current edition of NFPA 1901.

The valve control shall be located at the pump operator`s panel and shall visually indicate the position of the valve at all times.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

Swivel Elbow, Polished Stainless Steel

There shall be a polished stainless steel swivel elbow provided for the front bumper discharge located on top of the bumper driver's side outboard.

Double Speedlay 1.5 Akron Valve Controls

One (1) double speedlay discharge shall be provided. Each speedlay section shall include one (1) $2^{"}$ brass swivel with a 1-1/2" hose connection to permit the use of the hose from either side of the apparatus.

The speedlay piping shall consist of two (2) 2" heavy duty hoses coming from the pump discharge manifold to the 2" swivel. The discharges shall include a manually operated Akron valve.

The 2" valves shall be Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valves shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.

The valves shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

The valve controls shall be located at the pump operator's panel and shall visually indicate the position of the valves at all times.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

Left Panel 2.5 Discharge Akron Valve

One (1) 2-1/2" discharge outlet with a manually operated Akron valve shall be provided at the left hand side pump panel.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.

The valve shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

The valve control shall be located at the pump operator panel and shall visually indicate the position of the valve at all times.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

Location: left side discharge 1, left side discharge 2.

Right Panel 2.5 Discharge Akron Valve

One (1) 2-1/2" discharge outlet with a manually operated Akron valve shall be provided at the right side pump panel.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.

The valve shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

The valve control shall be located at the pump operator panel and shall visually indicate the position of the valve at all times.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

Location: right side discharge 2.

Left Rear 2.5" Discharge Akron Valve

One (1) 2-1/2" discharge outlet with a manually operated Akron valve shall be supplied to the left rear of the apparatus by a 2-1/2" stainless steel pipe.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.

The valve shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

The valve control shall be located at the pump operator panel and shall visually indicate the position of the valve at all times.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

Location: left rear discharge.

Right Panel 5

One (1) 5" discharge outlet with a 3" manually operated Akron valve shall be provided at the right side pump panel. The discharge shall consist of a 3" valve connected to a 3" FNST x 5" MNST chrome adapter. The adapter shall protrude through the pump panel. The end of the discharge adapter shall be equipped with a chrome plated rockerlug cap with a retainer chain.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.

The valve shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

The valve control shall be located at the pump operator`s panel and shall visually indicate the position of the valve at all times.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

Location: right side discharge 1.

Deck Gun Location

Deck gun piping shall be positioned centered in deck gun channel. This location shall allow for optimal operation of a deck gun monitor once installed.

DISCHARGE OPTIONS

Bleeder Drain Valve [Qty: 9]

The bleeder/drain valves shall be Innovative Controls ³/₄" ball brass drain valves with chromeplated lift lever handles and ergonomic grips. Each lift handle grip shall feature built-in colorcoding labels and a verbiage tag identifying each valve, also supplied by Innovative Controls. The color labels shall also include valve open and close verbiage.

Top Mount Valve Control [Qty: 13]

For valve actuation, the apparatus pump panel shall be equipped with Innovative Controls Top Mount Valve Controls. The ergonomically designed grip-activated T-handles shall be chromeplated zinc with recessed UV-resistant labels for color-coding and verbiage. The patented springloaded handle and control rod assembly shall open and close valves when the user simply squeezes the T-handle and pivots the rod. When the T-handle grip is released, the valve control shall lock at the desired position automatically to eliminate valve drift. No secondary manual tightening method shall be required.

A robust die cast and chrome-plated pivot arm shall house the internal locking mechanism protecting it from environmental hazards. A brass bushing and closely-toleranced stainless steel rod shall ensure long-term smooth valve control operation and never require lubrication. The valve control handles shall mount to sections of decorative clear anodized aluminum extrusion, designed to evenly space the handles and provide a secure mount for the handle's pivot rod.

Garnish Ring Bezel

Innovative Controls intake and/or discharge garnish rings shall be installed to the apparatus with mounting bolts. These bezel assemblies will be used to identify intake and/or discharge ports with color and verbiage. These garnish rings are designed and manufactured to withstand the specified apparatus service environment and shall be backed by a warranty equal to that of the exterior paint and finish. The specified assemblies feature a chrome-plated panel-mount bezel with durable UV resistant polycarbonate inserts. These UV resistant polycarbonate graphic inserts shall be sub-surface screen printed to eliminate the possibility of wear and protect the inks from fading. All insert labels shall be backed with 3M permanent adhesive (200MP), which meets UL969 and NFPA standards.

PRESSURE GOVERNORS

Pump Pressure Governor

The apparatus shall be equipped with a Class 1 "TOTAL PRESSURE GOVERNOR" (TPG) Integrated pump control system. The TPG shall have a weatherproof color display. The TPG will operate as an engine/pump pressure governor/throttle system that is connected directly to the Electronic Control Module (ECM) mounted on the engine. The TPG is to operate as a pressure sensor (regulating) governor (PSG).

The TPG shall display engine RPM, oil pressure, engine temperature and voltage along with providing critical warnings. The warning levels for oil pressure, high engine temperature, low voltage and high voltage shall be independently programmable.

GAUGES

GAUGE IC 10 LED FOAM TANK LEVEL

One (1) Innovative Controls brand foam tank level gauge shall be located at the pump operator's panel to provide a high-visibility display of the foam tank level. Ten (10) high-intensity light emitting diodes (LEDs) on the display module shall have a 3-dimensional lens allowing the full, 3/4, 1/2, 1/4, and refill levels to be easily distinguished at a glance within full 180 degree visibility.

The display module shall be protected from vibration and contamination with the components being encased in an encapsulated plastic housing. The long life and extreme durability of LED indicators eliminates light bulb replacement and maintenance. Color coded cover plates shall complete the assembly of the display module to the pump panel. Each display level can be set independently for maximum reliability.

The display shall provide a steady indication of fluid level despite sloshing inside of the tank when the vehicle is in motion due to an "anti-slosh" feature.

GAUGE IC 10 LED TANK LEVEL WATER/PSTANK

One (1) Innovative Controls brand water tank level gauge shall be located at the pump operator's panel to provide a high-visibility display of the water tank level. Ten (10) high-intensity light emitting diodes (LEDs) on the display module shall have a 3-dimensional lens allowing the full, 3/4, 1/2, 1/4, and refill levels to be easily distinguished at a glance within full 180 degree visibility.

The display module shall be protected from vibration and contamination with the components being encased in an encapsulated plastic housing. The long life and extreme durability of LED indicators eliminates light bulb replacement and maintenance. Color coded cover plates shall complete the assembly of the display module to the pump panel. System calibration shall be accomplished via supplied magnet. Each display level can be set independently for maximum reliability.

The display shall provide a steady indication of fluid level despite sloshing inside of the tank when the vehicle is in motion due to an "anti-slosh" feature.

In addition to the pump panel mounted lights there shall be one (1) Whelen PSTank series LED (Light Emitting Diode) strip light installed each side as specified.
The system shall be controlled by an Innovative Control tank level driver module that is integral of the NFPA required pump panel mounted tank level light assembly.

The additional tank level system shall be interlocked through the parking brake assembly so as not to be on while the vehicle is in motion.

The remote strip light shall be arranged as follows:

Full Green 3/4 Blue 1/2 Amber 1/4 Red

Location of Whelen PSTank Strip Lights: each side of cab rear of front doors.

Flow Meter System

The apparatus shall be equipped with a Class 1 Flowminder on the specified discharge to digitally display the actual volume of water (in gallons per minute) being discharged through the specified line.

Flowminder shall consist of:

- Weatherproof digital flow display with super-bright digits at least 1/2" high. The display shall read actual flow and shall switch to total flow when the totalizer button is depressed and held.
- Flow transmitter mounted in the discharge line piping between the pump and the discharge outlet. The transmitter shall consist of a weather resistant black anodized housing with brass wetted parts with a double paddle wheel.
- Connecting cables to connect the digital display to the flow transmitter and apparatus power.
- Machined mounting hardware to hold the transmitter in position in the discharge line.
- The flow meter shall be checked and calibrated prior to delivery of the apparatus.

The Flowminder shall be installed in addition to the pressure gauge.

A Flowminder shall be provided for the following discharge(s): deck gun.

2.5 [Qty: 9]

The valve discharge gauges shall be 2 $\frac{1}{2}$ (63mm) diameter Innovative Controls pressure gauges. Each gauge shall have a rugged corrosion free stainless steel case and clear scratch resistant molded crystals with captive O-ring seals to ensure distortion free viewing and seal the gauge. The gauges shall be filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from -40F to +160F. Each gauge shall exceed ANSI B40.1 Grade A requirements with an accuracy of +/-

1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy.

A polished chrome-plated stainless steel bezel shall be provided to prevent corrosion and protect the lens and gauge case. The gauges shall be installed into decorative chrome-plated mounting bezels that incorporate valve-identifying verbiage and/or color labels. The gauges shall display a range from 0 to 400 psi with black graphics on a white background.

4" Master Pressure Gauges w/Bezel

The master intake and master discharge gauges shall be 4"(101mm) diameter IC pressure gauges. Each gauge shall have a rugged corrosion free stainless steel case and clear scratch resistant molded crystals with captive O-ring seals to ensure distortion free viewing and seal the gauge. The gauges shall be filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from -40F to +160F. Each gauge shall meet ANSI B40.1 Grade 1A requirements with an accuracy of +/-1% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy.

The two master gauges shall be installed into decorative chrome-plated zinc mounting bezel that also incorporates a test port manifold and a graphic overlay that identifies the master intake and discharge gauges, the vacuum test port, and the pressure test port. The test port manifold is solid cast brass with chrome plated plugs. The master gauges shall be installed on the pump panel no more than 6 inches apart. The gauge on the left shall be the master pump intake gauge and display a range from 30" vac to 400 psi with black graphics on a white background. The gauge on the right shall be the master pump discharge gauge and display a range from 0 to 400 psi with black graphics on a white background.

Flow Meter Totalizer Button

The apparatus shall be equipped with a Class 1 Totalizer button. When the totalizer button is dispressed and held it will give the total volume of water that has flow through each specified discharge that is equipped with a flowmeter.

FOAM SYSTEMS

Hale 3.3 FoamLogix Foam System

The apparatus shall be equipped with an automatic electronically controlled, direct injection, rotary gear pump, and discharge side foam proportioning system. Foam proportioning operation shall be based on direct measurement of water flow and remain consistent within the specified flows and pressures.

System Requirements

The complete foam proportioning system shall include the following:

- 1. Foam Pump
- 2. Control System
- 3. Tank Selector and Flushing Valves
- 4. Foam Concentrate Strainer
- 5. Integral Check Valve/ Injector Fitting.
- 6. Flow Meter(s) and Flow Meter Display Units
- 7. Control Cables
- 8. SAE 1922 CAN Capable Connection
- 9. Low Tank Level Switch(es)
- 10. Water Discharge Check Valves
- 11. Foam Tank(s)
- 12. Documentation

Foam Pump

The foam proportioning system shall be compatible with Class A foam concentrates and most high viscosity normal hydrocarbon or polar solvent Class B foam concentrates. The foam proportioning system shall be capable of delivering the rated foam concentrate flow with the above mentioned foam concentrate types. Foam system manufacturer shall provide a list of foam chemicals that have been <u>tested</u> for compatibility with the foam pump.

The foam proportioning system shall be based on an electric motor driven, rotary gear foam concentrate pump, rated at 3.3 GPM (12 LPM) foam concentrate flow rate with maximum operating pressure of 400 psig (28 BAR).

The electric motor shall be powered by 12 volts direct current with a 3/4 HP (0.5 KW) power rating at a maximum current draw of 60 amps.

The rotary gear pump shall be close coupled to the motor without an oil-filled gearbox. The foam concentrate pump and all wetted parts of the system shall be constructed of corrosion-resistant materials compatible with all foam concentrates being used. The pump body, pump head, and pump cover shall be constructed of bronze with pump shaft, gears, and bearings constructed of stainless steel. A mechanical pump shaft seal shall be provided to prevent foam concentrate leakage around the rotating shaft. An internal foam concentrate relief valve constructed of stainless steel and preset at the factory for maximum system operating pressure shall be incorporated into the foam pump to protect the pump from over-pressurization. NO components of the foam concentrate pump and wetted parts of the foam system will be manufactured of aluminum.

The foam pump/motor assembly shall be permanently attached to an apparatus mountable base plate.

A foam concentrate flow meter shall be integral to the foam concentrate pump. The foam concentrate flow meter will provide a signal to the electronic control unit to make sure the proper amount of foam concentrate is injected into the discharge stream.

The entire base plate mounted assembly shall have electrical components sealed to NEMA 4X or equivalent for mounting in the apparatus pump compartment or any suitable location on the apparatus. The pump will be mounted to allow gravity feed of foam concentrate from the foam tank to the pump.

Control Systems

The system shall be equipped with an electronic control unit, suitable for installation on the pump operator panel as the single point of operation for the foam proportioning system. Incorporated within the control unit shall be a microprocessor that receives input from water flow meter(s) while receiving foam concentrate pump output information from the foam concentrate flow meter. The microprocessor, through constant comparison of the flow signals, will ensure the operator preset proportional amount of foam concentrate is injected into the discharge stream of the fire pump. Control unit will utilize a single sealed electrical connector on the rear panel. Wiring harness shall provide an SAE 1922 CAN connection for diagnostics and systems operations/communications. Control unit will have an environmentally-sealed membrane front panel and sealed metallic housing.

The electronic control unit shall permit the pump operator to perform the following control and operation functions for the foam proportioning system:

• Provide push-button ON/OFF control of foam proportioning system.

• Provide push-button control of foam proportioning rates from 0.1% to 10.0%, in 0.1% increments.

- Show real time flow rate of water or foam solution.
- Show total volume of water or foam solution discharged during and after foam operations.
- Show foam concentrate injection rate.
- Show total amount of foam concentrate consumed.
- Permit resetting of totalized values for water and foam concentrate.
- Simulate water flow rates for manual operation, calibration, and testing of foam system.
- Enable system setup and full range system diagnostic functions.
- Indicate on LED bar graph foam concentrate is being injected and the foam system capacity.
- Indicate on LED bar graph when system capacity is not within design parameters.
- Store independent default values for Class A and Class B foam concentrate injection.
- Flash a "low concentrate" warning when the foam concentrate tank runs low.
- Flash a "no concentrate" warning and shut the system off when the foam tank is empty.
- Flash a "low battery" warning when battery voltage is low enough to affect system operation.
- Flash a "hot" warning when system is running hot due to low voltage or radiant heat.
- Read out calibration values to allow setting up a replacement unit.

A power distribution box shall be attached to the base plate to provide ease of installation. The distribution box shall be sealed to a NEMA 4X or equivalent rating to permit installation in the pump compartment.

Foam concentrate flow feedback shall be provided to the control unit through the distribution box by a sensor mounted in the foam pump body. Rotors in the foam discharge side of the foam pump will provide the targets to pulse the sensor to generate a feedback signal.

The distribution box shall receive 12 volt direct current power from the apparatus electrical system as the only source of power to operate the system and power component sensors. Control power will be distributed to the control unit, flow meter sensor and foam concentrate feedback sensor through a conductor in the cable sets provided by the foam proportioner manufacturer. The microprocessor in the control unit will process input signals from the flow meter sensor and foam feedback sensor to determine the proper duty cycle for the electric motor to run. The distribution box will provide power to the electric motor, based on signals received from the control unit, at a variable rate to ensure that the correct proportion of foam concentrate, preset by the pump operator on the control unit, is injected into the water pump discharge stream. The distribution box shall have a main power control switch and overcurrent protection for the foam proportioning system.

All primary electrical wires for the foam concentrate system shall be type SXL or GXL (SAE J1128) per NFPA requirements. Electrical connections shall be made using heavy duty 5/16 inch (minimum) diameter studs and nuts.

Tank Selector and Flushing Valves

When dual foam concentrate tanks are installed on the apparatus a dual tank switch over system consisting of either of the following options shall be installed to provide rapid change-over of foam concentrate reservoirs. The dual tank selector valves shall also have provision for connection of flushing water to prevent mixing of dissimilar incompatible foam concentrates:

Air Operated Dual Tank Selector

An air operated dual tank selector shall provide dual foam tank selection via a three position toggle switch located on the pump operator panel. Indicator lights on the switch placard will indicate which tank is selected. The air operated dual tank system shall be provided as an integral part of the foam concentrate pump. The air dual tank system shall be installed and tested at the foam system manufacturer. Operating air shall be provided continuously from the apparatus compressed air system. A foam concentrate bypass valve shall be provided integral to the air operated dual tank valve to permit operation of the foam concentrate pump for test and calibration purposes without injecting foam concentrate into the water discharge.

The air operated dual tank selector will be electrically interlocked with the low tank switches and control unit. When the selector is switched from one tank to the other the default foam concentrate injection rate will automatically change without operator intervention. Also, when

the selector is switched from one tank to the other the low level sensor in the selected tank will be active and the other one will be isolated from the system.

The center position of the panel mounted dual tank switch will provide a clean water flush of the foam concentrate pump to prevent concentrate mixing and possible jelling. When FLUSH is selected the foam pump will only run for ten (10) seconds. All NFPA required check valves and flushing water strainers shall be provided integral to the air dual tank selector.

Manual Dual Tank Selector

The manual dual tank selector will be electrically interlocked with the low tank switches and control unit. When the selector is switched from one tank to the other the default foam concentrate injection rate will automatically change without operator intervention. Also, when the selector is switched from one tank to the other the low level sensor in the selected tank will be active and the other one will be isolated from the system. Switches provided on the manual dual tank valve will determine which low tank level sensor is providing feedback and which foam concentrate injection rate to use. When FLUSH is selected the foam pump will only run for ten (10) seconds. All NFPA required flushing water check valves shall be provided with the manual dual tank selector.

Single Foam Tank Flush

When dual foam concentrate tanks ARE NOT installed flushing capabilities can be provided with a three-way flush valve. A switch provided integral to the three-way valve will indicate when the valve is in the "FLUSH" position. The "FLUSH" position will provide fresh water flushing capabilities to prevent foam concentrate deterioration of the foam pump. When FLUSH is selected the foam pump will only run for ten (10) seconds. NFPA required flushing water check valves shall be provided with the single tank flush selector valve.

BYPASS VALVE: When the manual dual tank selector, single tank flush valve or a single tank system without flushing capabilities is installed a three way bypass valve shall be provided on the discharge of the foam pump to permit operation of the foam concentrate pump for test and calibration purposes without injecting foam concentrate into the water discharge. The bypass valve shall be capable of being panel mounted.

Foam Concentrate Strainers

Field serviceable foam concentrate strainers shall be provided in the foam concentrate suction line. When the strainer will not be subject to flushing water pressure a plastic bodied in-line strainer shall be used. The strainer body shall be constructed of plastic with a stainless steel mesh screen and shall be compatible with both Class A and Class B foam concentrates. A shutoff valve will be provided to enable isolation of the strainer for service. The strainer will be mounted in the pump compartment. The strainer will be a low pressure device and will not be subject to flush water pressure. Where strainers are subject to flush water pressure, panel mounted field serviceable foam concentrate strainers rated at 500 psig (34 BAR) minimum shall be installed on the pump panel. The strainer body shall be constructed of brass with a chrome cap and an easily removable stainless steel mesh screen for field servicing. A 1½ inch strainer with 3⁄4 inch NPT connection ports will be used for Class A foam concentrate and a 2½ inch strainer with 1 inch NPT connection ports shall be used for Class B foam concentrate.

Integral Check Valve/Injector Fitting and Waterway Check Valves

To prevent contamination of the foam concentrate supply, foam concentrate shall be injected into the water pump discharge stream through an integral check valve/ injector fitting. The check valve/ injector fitting shall be of one piece body construction of brass, with stainless steel wetted parts.

To prevent contamination of the water pump and apparatus booster tank, spring loaded doubledoor type check valves shall be installed in the water pump discharge piping prior to the foam injection point.

Flow Meter(s) and Flow Meter Display Units

A paddlewheel type flow meter with a stainless steel impeller wheel shall monitor water flow in foam capable discharges. The flow meter shall have a 500 psig (34 BAR) pressure rating per NFPA requirements.

One (1) flow meter is required for proper operation of the foam proportioning system. Power for the flow meter sensor will be provided through the cable set from the control unit. Flow meters shall have saddle clamp mounting which shall be used to mount in stainless steel, brass or iron OEM manifold assemblies.

The flow meter selected shall be sized to adequately monitor the minimum and maximum flow expected in the foam capable discharges.

Control Cables

The cables for connection of the control unit, distribution box, flow meter sensor, flow meter display units, pressure transducers and feedback sensor shall have the ability to connect together and total length shall not exceed 40 feet (12 meters). The connections shall be keyed to prevent misconnection and improper system operation. Where required, a shield drain wire shall be tied to one of the pins on each end of the cable. No externally attached ferrite beads shall be installed for the purpose of electrical shielding. When properly connected the connections shall be sealed to NEMA 4X or equivalent.

Low Tank Level Switch

A low tank level switch shall be installed in each foam concentrate tank that supplies foam concentrate to the foam proportioning system. The low tank level sensor shall be connected to

the foam proportioning system to provide protection against dry running of the foam pump. The low tank level sensor can be mounted on the side, bottom or top of the foam concentrate tank. The low tank level sensor and electrical connections shall be sealed to prevent infusion of foam concentrate into the wiring and possible short circuit of the tank level sensor. The low tank sensor shall be mounted so that the flow of foam concentrate from the tank does not cause a false low tank reading.

Documentation

The foam proportioning system shall have a one-year limited manufacturer warranty.

Foam System Certification

The foam system performance shall be tested and certified in compliance with the applicable NFPA 1901 requirements.

FOAM SYSTEM OPTIONS

Foam System Plumbing

The specified foam system shall be plumbed to 1.5 first speedlay, 1.5 second speedlay.

ELECTRICAL SYSTEMS

Vehicle Data Recorder

A vehicle data recorder system shall be provided to comply with the 2009 and 2016 editions of NFPA 1901. The following data shall be monitored:

- Vehicle speed MPH
- Acceleration (from speedometer) MPH/Sec.
- Deceleration (from speedometer) MPH/Sec.
- Engine speed RPM
- Engine throttle position % of full throttle
- ABS Event On/Off
- Seat occupied status Occupied Yes/No by position
- Seat belt status Buckled Yes/No by position
- Master Optical Warning Device Switch On/Off
- Time: 24 hour time
- Date: Year/Month/Day

Occupant Detection System

There shall be a visual and audible warning system installed in the cab that indicates the occupant buckle status of all cab seating positions that are designed to be occupied during vehicle movement.

The audible warning shall activate when the vehicle's park brake is released and a seat position is not in a valid state. A valid state is defined as a seat that is unoccupied and the seat belt is unbuckled, or one that has the seat belt buckled after the seat has been occupied.

The visual warning shall consist of a graphical display that will continuously indicate the validity of each seat position.

The system shall include a display panel with LED back-lit ISO indicators for each seating position, seat sensor and safety belt latch switch for each cab seating position, audible alarm and braided wiring harness.

The display panel shall be located Driver side of center dash electrical cover.

Multiplex Electrical System

Electrical System

The apparatus shall incorporate a Weldon V-MUX multiplex 12 volt electrical system. The system shall have the capability of delivering multiple signals via a CAN bus. The electrical system installed by the apparatus manufacturer shall conform to current SAE standards, the latest FMVSS standards, and the requirements of the applicable NFPA 1901 standards.

The electrical system shall be pre-wired for optional computer modem accessibility to allow service personnel to easily plug in a modem to allow remote diagnostics.

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.

Any electrical junction or terminal boxes shall be weather-resistant and located away from water spray conditions.

Multiplex System

For superior system integrity, the networked multiplex system shall meet the following minimum component requirements:

• The network system must be Peer to Peer technology based on RS485 protocol. No one module shall hold the programming for other modules. One or two modules on a network referred to as Peer to Peer, while the rest of the network consists of a one master and several slaves is not considered Peer to Peer for this application.

• Modules shall be IP67 rated to handle the extreme operating environment found in the fire service industry.

• All modules shall be solid state circuitry utilizing MOS-FET technology and utilize Deutsch series input/output connectors.

• Each module that controls a device shall hold its own configuration program.

• Each module should be able to function as a standalone module. No "add-on" module will be acceptable to achieve this form of operation.

- Load shedding power management (8 levels).
- Switch input capability for chassis functions.
- Responsible for lighting device activation.
- Self-contained diagnostic indicators.
- Wire harness needed to interface electrical devices with multiplex modules.

• The grounds from each device should return to main ground trunk in each sub harness by the use of ultrasonic splices.

Wiring

All harnessing, wiring and connectors shall be manufactured to the following standards/guidelines. No exceptions.

- NFPA 1901-Standard for Automotive Fire Apparatus
- SAE J1127 and J1127
- IPC/WHMA-A-620 Requirements and Acceptance for Cable and Wire Harness Assemblies.

(Class 3 – High Performance Electronic Products)

All wiring shall be copper or copper alloys of a gauge rated to carry 125 of the maximum current for which the circuit is protected. Insulated wire and cable 8 gauge and smaller shall be SXL, GXL, or TXL per SAE J1128. Conductors 6 gauge and larger shall be SXL or SGT per SAE J1127.

All wiring shall be colored coded and imprinted with the circuits function. Minimum height of imprinted characters shall not be less than .082" plus or minus .01". The imprinted characters shall repeat at a distance not greater than 3".

A coil of wire shall be provided behind electrical appliances to allow them to be pulled away from mounting area for inspection and service work.

Wiring Protection

The overall covering of the conductors shall be loom or braid.

Braid style wiring covers shall be constructed using a woven PVC-coated nylon multifilament braiding yarn. The yarn shall have a diameter of no less than .04" and a tensile strength of 22 lbs. The yarn shall have a service temperature rating of -65 F to 194 F. The braid shall consist of 24 strands of yarn with 21 black and 3 yellow. The yellow shall be oriented the same and be next to each other.

Wiring loom shall be flame retardant black nylon. The loom shall have a service temperature of - 40 F to 300 F and be secured to the wire bundle with adhesive-backed vinyl tape.

Wiring Connectors

All connectors shall be Deutsch series unless a different series of connector is needed to mate to a supplier's component. The connectors and terminals shall be assembled per the connector/terminal manufacturer's specification. Crimble/Solderless terminals shall be acceptable. Heat shrink style shall be utilized unless used within the confines of the cab.

NFPA Required Testing of Electrical System

The apparatus shall be electrical 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 NFPA 1901. 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 test fail.

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 shall be permitted during this test. However, an alarm sounded by excessive battery discharge, as detected by the system required in NFPA 1901

Standard, or a system voltage of less than 11.7 volts DC for a 12 volt nominal system, for more than 120 seconds, shall be considered a test failure.

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 nominal 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:
 - a. The nameplate rating of the alternator.
 - b. The alternator rating under the conditions.
 - c. Each specified component load.
 - d. Individual intermittent loads.

Multiplex Display

The V-MUX multiplex electrical system shall include a text display.

The display shall have the following features:

- Rugged vacuum fluorescent technology
- Two twenty character lines
- Programmed to show door ajar status and diagnostic information

The display shall be located center of dash.

LIGHT BARS

Light Bar Mounts

One (1) pair of Whelen 5" tall (model MK8H) aluminum high mounts shall be provided on the front light bar.

Light Bar Color(s)

Light Bar shall be provided with the following color LED modules: Red with clear lenses

Light Bar

A Whelen Freedom IV Series 72" LED light bar model F4X7 with fourteen (14) LED modules shall be provided; two (2) front corner mounted LED modules, ten (10) forward facing LED modules and two (2) side facing LED modules (with front vista windows) or two (2) rear corner LED modules (without front vista windows).

No rear facing LEDs.

The light bars shall have clear lenses.

The white LEDs (if equipped) shall be switched off in blocking right of way mode.

The light bar shall be installed centered on the front cab roof.

Light Bars

A pair of side facing Whelen Mini Freedom IV Series 21.5" LED light bars shall be provided. Each light bar shall contain four (4) LED modules. Each side facing light bar shall contain one (1) corner LED module forward facing, two (2) side facing LED modules and one (1) corner LED module rearward facing.

The white LEDs (if equipped) shall be switched off in blocking right of way mode.

The light bars shall be installed in the following location: centered above rear cab doors.

Light Bar Mounts

One (1) pair of Whelen 5" tall (model MK8H) aluminum high mounts shall be provided on the side facing mini light bars.

WARNING LIGHT PACKAGES

Lower Level Warning Light Package

Eight (8) Whelen M6R Super LED red light heads and two (2) Whelen M2R Super LED red light heads shall be provided.

The lights shall include chrome flanges where applicable. The lights shall be wired with weatherproof connectors and shall be mounted as close to the corner points of the apparatus as is practical as follows:

• Two (2) Whelen M6R Super LED Red lights on the front of the apparatus facing forward

• Two (2) Whelen M6R Super LED Red lights on the rear of the apparatus facing rearward

• Two (2) lights each side of the apparatus, one (1) Whelen M6R Super LED Red each side at the forward most point (as practical), and one (1) Whelen M2R Super LED Red each side at the rearward most point (as practical).

• One (1) Whelen M6R Super LED Red light each side of the apparatus centrally located to provide mid ship warning light.

The side facing lights shall be located at forward most position, centered in rear wheel well, and side facing at rear of body in rubrail if equipped.

All warning devices shall be surface mounted in compliance with NFPA standards.

WARNING LIGHTS

Upper Rear Warning Lights

Two (2) Whelen model L31H Super LED beacons with Red domes shall be supplied.

The lights shall be located rear upper body on aerial style brackets to meet Zone C upper requirements.

Hazard (Door Ajar) Light

There shall be a 2" red LED hazard light installed as specified.

The light shall be located center overhead.

Warning Lights

Two (2) Whelen M6 series Linear Super LED red light heads with red lens shall be provided. The rectangular lights shall include chrome flanges where applicable.

Location: (1) each side of body rear facing up high.

Warning Lights

Two (2) Whelen model M2R Super LED red light heads (red LEDs with clear lens) shall be provided.

The rectangular lights shall include chrome flanges where applicable. The lights shall be wired with weatherproof connectors.

Specifications include:

- Surface mounted
- Patented Linear LED reflector assembly
- Sealed assembly
- Mounting gasket
- Multiple Scan-Lock flash patterns available
- Chrome mounting flange

Location: (1) each side just behind rear wheels in rubrail if equipped, (1) each side in pump module rubrail if equipped.

All warning devices shall be surface mounted in compliance with NFPA standards.

DIRECTIONAL LIGHT BARS

Directional Traffic Warning Light

One (1) Whelen TAL65 LED 36" long Traffic Advisor with amber lenses shall be provided.

The directional bar shall include a TACTLD1 control head. The control head shall include a remote flash control and end lamp enable/disable feature.

The light shall be installed at the rear of the body to direct traffic around the vehicle.

Directional Light Bar Control Location

The directional light bar control head shall be located in the center overhead console offset to driver side.

Directional Light Wired to Warning Lights

The rear directional light bar shall be activated when the upper level warning lights are activated to provide additional lighting, in addition to the warning lights, when the vehicle is responding to a scene.

Recessed Directional Light Bar Mount

An area at the rear of the body shall be provided for recess mounting of a directional light bar. The recess shall reduce the opening height of the rear compartment(s) (if applicable).

SIRENS

Electronic Siren

A Whelen 295HFSM1 electronic siren shall be installed in the cab. The siren amplifier and control panel module shall include a rotary selector for six (6) functions, on/off switch, push

button switch for manual siren or air horn tones, and noise canceling microphone. Siren shall feature a mechanical siren tone in place of the piercer tone.

Electronic Siren Control Location

The electronic siren control shall be located in the center overhead.

Mechanical Siren

A chrome plated flush mounted Federal Q2B-NN coaster siren shall be installed in the front bumper. An electric siren brake switch shall be located in the cab accessible to driver.

The siren shall be located driver side front bumper.

SPEAKERS

Siren Speaker

One (1) Federal Signal model ES100 Dynamax 100 watt speaker shall be flush mounted as far forward and as low as possible on the front of the vehicle. A polished model MSFMT with "E-ONE" grille shall be provided on the outside of the speaker to prevent road debris from entering the speaker.

Speaker dimensions shall be: 5.5 in. high x 5.9 in. wide x 2.5 in. deep. Weight = 5.5 lbs.

The speaker shall produce a minimum sound output of 120 dB at 10 feet to meet current NFPA 1901 requirements.

The speaker shall be located driver side front bumper inboard of frame, officer side front bumper inboard of frame.

DOT LIGHTING

License Plate Light

One (1) Truck-Lite model 15905 white LED license plate light mounted in a Truck-Lite model 15732 chrome plated plastic license plate housing shall be mounted at the rear of the body.

Tail Lights

Three (3) Whelen 600 series LED (Light Emitting Diode) lights shall be installed in a Cast3 housing in a vertical position, each side at the rear of the body and wired with weatherproof connectors.

Light functions shall be as follows:

- LED red running light with red brake light in upper position.
- LED populated amber arrow pattern turn signal in middle position.
- LED clear back-up light in lower position.

A one-piece polished aluminum trim casting shall be mounted around the three (3) individual lights in a vertical position.

Marker Lights

One (1) pair of Britax model L427.203L.12V LED amber/red marker rubber housed lights shall be provided. The lights shall be located on the rear body corners mounted in the down angle position. The red lenses shall illuminate to the rear of the apparatus and the amber shall illuminate to the front of the apparatus. The lights shall be wired to the marker light circuit.

LED Marker Lights

LED clearance/marker lights shall be installed on the cab. The body marker lights shall be TecNiq 3/4" grommet mounted LED.

Upper Cab:

• Five (5) amber LED clearance lights on the cab roof.

Lower Cab:

• One (1) amber LED side turn/marker each side of cab ahead of the front door hinge.

Upper Body:

• One (1) red LED clearance light each side at rear of body, facing rear.

Lower Body:

• Three (3) red LED clearance lights centered at rear.

• One (1) red LED clearance light side facing at the trailing edge on either side of the apparatus body.

- One (1) amber LED clearance light side facing at front of body/pump module.
- One (1) amber LED auxiliary turn light side facing at front of body/pump module.

LIGHTS - COMPARTMENT, STEP & GROUND

Compartment Light Package

Two (2) ROM V4 compartment light strips shall be mounted in each body compartment greater than 4 cu. ft. Transverse compartments shall have four (4) lights located two (2) each side.

Each light bar shall include super bright white LEDs mounted to circuit boards that have acrylic conformal coating for corrosion protection. The LED circuit boards shall be mounted to an extruded aluminum base with lexan lens. The light shall produce 250 lumens per foot and be waterproof up to 1 meter (3.3 feet).

Compartment lights shall be wired to a master on/off rocker switch on the cab switch panel.

The wiring connection for the compartment lights shall be made with a weather-resistant plug in style connector. A single water and corrosion-resistant switch with a polycarbonate actuator and sealed contacts shall control each compartment light. The switch shall allow the light to illuminate if the compartment door is open.

Ground Lights

The apparatus shall be equipped with a sufficient quantity of lights to properly illuminate the ground areas around the apparatus in accordance with current NFPA requirements. The lights shall be 4" circular LED (Light Emitting Diode) with clear lenses mounted in a resilient shock absorbent mount for improved bulb life. The wiring connections shall be made with a weather resistant plug in style connector.

Ground area lights shall be switched from the cab dash with the work light switch.

One (1) ground light shall be supplied under each side of the front bumper extension if equipped.

Lights in areas under the driver and crew area exits shall be activated automatically when the exit doors are opened.

Medical Cabinet Lighting

Two (2) ROM V4 LED compartment light strips shall be mounted in the medical cabinet(s).

The light bar shall include super bright white LEDs mounted to circuit boards that have acrylic conformal coating for corrosion protection. The LED circuit boards shall be mounted to an extruded aluminum base with lexan lens. The lights shall produce 250 luments per foot and be waterproof up to 1 meter (3.3 feet).

The light shall be controlled by a compartment door switch.

Recessed Step Light

Two (2) TecNiq model T440 recessed 4" LED light with clear lens shall be provided to illuminate the step at the location specified.

Location: one (1) each side of the top mount walkway.

Cab Ground / Auxiliary Step Lights

The cab shall be equipped with a sufficient quantity of lights to properly illuminate the auxiliary steps and the ground areas below them in accordance with current NFPA requirements. The lights shall be EON LED (Light Emitting Diode) with clear lenses. The wiring connections shall be made with a weather resistant plug in style connector.

The lights shall be switched from the cab dash with the work light switch. The lights shall also be activated automatically when the exit doors are opened.

LIGHTS - DECK AND SCENE

Hose Bed Light Wired to Back-Up Lights

The hose bed light shall be activated when the chassis is placed in reverse to provide additional lighting, in addition to the back-up lights, when backing the vehicle.

Deck/Scene Light Wired to Back-Up Lights

The rear deck or scene lights shall be activated when the chassis is placed in reverse to provide additional lighting, in addition to the back-up lights, when backing the vehicle.

Scene Lights

Two (2) Whelen model M6ZC series Linear Super LED clear scene lights shall be provided.

Each shall have Linear Super LED diodes with internal light deflecting optics. The internal light deflecting optics shall redirect the light without the use of angle brackets.

The lights shall be located (1) each side rear compartment face up high and be controlled by a switch in cab accessible to driver (lights on sides of apparatus to be switched separately).

Hose Bed Light

A Whelen LED light model PFBP12C shall be installed at the front area of the hose bed to provide hose bed lighting per current NFPA 1901. The hose bed light shall be switched with work light switch in the cab.

LIGHTS - NON-WARNING

Engine Compartment Light

There shall be lighting provided in compliance with NFPA to illuminate the engine compartment area.

Pump Compartment LED Light

An LED light shall be provided in the pump compartment area for NFPA compliance. The light shall be wired to operate with the work light switch in the cab.

LED Pump Panel Light Package

Two (2) Weldon LED model 2631-0000-30 lights shall be mounted under a light shield directly above each side pump panel with the top mount panel having three (3) lights. The work light switch in the cab shall activate the lights when the parking brakes are set.

Map Light

A Sunnex 742-20 map light shall be supplied.

The map light shall be a 12 volt, 20" flexible gooseneck. A 20 watt halogen bulb and spot reflector with clear lens shall be supplied. An on-off switch shall be supplied on the base of the light.

The map light shall have a matte black finish.

Location: at officer's A post.

Spotlight

One (1) Golight model 2049 12 volt 65 watt remote controlled spotlight shall be supplied.

The spotlight shall produce 400,000 candlepower and have a 135 degree vertical and 370 degree horizontal range of motion. The light shall be mounted in a black, heat resistant, high impact weather resistant housing.

The light shall be controlled by both a RadioRay wireless remote and a dash / console mounted control pad.

If one light is selected, it shall be mounted at the center of the cab roof to the rear of the light bar. If two are selected they shall be mounted one each side of the cab roof to rear of the light bar.

The light shall have a 3 year warranty.

LED Pump Panel Light - Additional

One (1) Weldon LED light model 2631-0000-30 shall be mounted under the light shield, in addition to the existing pump panel lights. The additional light shall be located at the top mount control panel.

Hand Held Spotlight

A Whelen PAR46 hand held 12 volt super LED spotlight with mounting bracket shall be provided. It shall be hardwired and located at the officer's side of the cab dash.

CONTROLS / SWITCHES

Foot Switch

A heavy duty metal floor mounted foot switch shall be installed to operate the air horns. It shall be located driver's side.

Foot Switch

A heavy duty metal floor mounted foot switch shall be installed to operate the Q2B siren. It shall be located driver's side.

CAMERAS / INTERCOM

Back-Up Camera

A Safety Vision back-up camera model SV-625B-Kit with a color monitor model SV-CLCD70BA shall be installed. The monitor shall be installed at the front of the cab visible at night and in bright sunlight to the driver. The camera shall be mounted up high at the rear of the vehicle to provide a wide angle rear view with audio. The system shall include a cable with metallic waterproof threaded o-ring seal connectors to ensure positive connection between video cable and camera to prevent unplugging due to vibration resulting in video loss to vehicle operator.

Camera, Officer Side

A Safety Vision model SV-622RS camera will be located on the officer side front corner of the cab. This camera will be interlocked with the turn indicator. The system shall include a cable with metallic waterproof threaded o-ring seal connectors to ensure positive connection between video cable and camera to prevent unplugging due to vibration resulting in video loss to vehicle operator.

Requires the option for the Safety Vision back-up camera system which consists of the colored monitor, back-up camera and control box.

Back-Up Camera Monitor Location

The back-up camera monitor shall be located on the center dash offset driver.

MISC ELECTRICAL

Back-Up Alarm

An electronic back-up alarm shall be supplied. The 97 dB alarm shall be wired into the chassis back-up lights to signal when the vehicle is in reverse gear.

12 Volt DC Power Distribution Module

There shall be a 12 place 12 volt DC power distribution module installed as specified.

The module will have six (6) circuits wired directly to the battery and have six (6) circuits wired through the master battery switch with 12 positions for grounds. Connection to the power module circuit will be through a .250 female spade connector. Each buss will be protected with a 50 amp circuit breaker for overload protection. The module will accept ATC blade type fuses or 22X series circuit breakers.

The module shall be located behind officer's seat.

LIGHTS - QUARTZ

Whelen Pioneer 12V LED Flood Light

A Whelen Pioneer Plus series 12V flood light model PFP2 dual panel LED light head shall be provided on a cab brow mount. The rectangular extruded light fixture with die cast end caps shall measure 14" wide by 4-5/8" high by 3" deep and have a white powder coat finish. The light fixture shall have dual panel (4) clusters of LED lamps with molded vacuum metalized reflector that draws 12 amps and produce 14,000 usable lumens.

The light shall be located center of front cab brow.

Pioneer 12 Volt Flood Light

Whelen Pioneer Plus, PFP2 12V LED light fixture(s) on a Whelen 3000 series pole shall be provided. The rectangular extruded light fixture with die cast end caps shall measure 14" wide by 4-5/8" high by 3" deep and have a white powder coat finish. The light fixture shall have a dual panel (4) clusters of LED lamps with molded vacuum metalized reflector that draws 13 amps at 12.8 VDC. The lights shall be provided with a locking swivel joint to allow the lights to be manually tilted up/down and locked in position by the operator. Handle standard.

The light assembly shall be externally mounted as specified. The pole shall allow for 360-degree rotation of the light. A locking knob shall hold the pole at the desired height.

Location: officer side back of cab, driver side back of cab.

RECEPTACLES

Receptacle

A 20 amp, 110 volt 3-prong straight blade NEMA 5-20 duplex household receptacle with stainless steel cover plate shall be installed in a non-weather exposed area as specified by the department. The receptacle shall be wired to the inlet receptacle where it will have overcurrent protection from an external source.

Location: center rear wall of center rear medical compartment up high.

MISC LOOSE EQUIPMENT

DOT Required Drive Away Kit

Three (3) triangular warning reflectors with carrying case shall be supplied to satisfy the DOT requirement.

EXTERIOR PAINT

Paint Break with Dip to Grille

The cab shall have a two-tone paint break. The break line shall be approximately 31.5 inches below the cab roof drip rail. The paint break shall include a dip down to the corners of the cab grille.

Painted Pump/Pre-Connect Module(s)

The apparatus pump/pre-connect module(s) shall be painted job color.

The paint process shall match what is applied to the body.

Paint Custom Cab

The apparatus cab shall be painted Sikkens FLNA3225E-1 Red. The paint process shall meet or exceed current state regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water, and soil. Contractor shall, upon demand, provide evidence that the manufacturing facility is in compliance with State EPA rules and regulations.

The aluminum cab exterior shall have no mounted components prior to painting to assure full coverage of metal treatments and paint to the exterior surfaces. Cab doors and any hinged smooth-plate compartment doors shall be painted separately to assure proper paint coverage on cab, door jambs and door edges.

Paint process shall feature Sikkens high solid LV products and be performed in the following steps:

- Corrosion Prevention all aluminum surfaces shall be pre-treated with the Alodine 5700 conversion coating to provide superior corrosion resistance and excellent adhesion of the base coat.
- Sikkens Sealer/Primer LV acrylic urethane sealer/primer shall be applied to guarantee excellent gloss hold-out, chip resistance and a uniform base color.
- Sikkens High Solid LVBT650 (Base coat) a lead-free, chromate-free high solid acrylic urethane base coat shall be applied, providing excellent coverage and durability. A minimum of two (2) coats shall be applied.
- Sikkens High Solid LVBT650 (Clear coat) high solid LV clear coat shall be applied as the final step in order to ensure full gloss and color retention and durability. A minimum of two (2) coats shall be applied.

Any location where aluminum is penetrated after painting, for the purpose of mounting steps, hand rails, doors, lights, or other specified components shall be treated at the point of penetration with a corrosion inhibiting pre-treatment (ECK Corrosion Control). The pre-treatment shall be applied to the aluminum sheet metal or aluminum extrusions in all locations where the aluminum has been penetrated. All hardware used in mounting steps, hand rails, doors, lights, or other specified components shall be individually treated with the corrosion inhibiting pre-treatment.

After the paint process is complete, the gloss rating of the unit shall be tested with a 20 degree gloss meter. Coating thickness shall be measured with a digital MIL gauge and the orange peel with a digital wave scan device.

Paint Cab Two-Tone Color

The upper section of the cab shall be painted FLNA4006 White.

The paint process of the secondary cab color shall be the same as the primary color.

Paint Body Small

The apparatus body shall be painted Sikkens FLNA3225E-1 Red. The paint process shall meet or exceed current state regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water, and soil. Contractor shall, upon demand, provide evidence that the manufacturing facility is in compliance with State EPA rules and regulations.

The aluminum body exterior shall have no mounted components prior to painting to assure full coverage of metal treatments and paint to the exterior surfaces of the body. Any vertically or horizontally hinged smooth-plate compartment doors shall be painted separately to assure proper paint coverage on body, door jambs and door edges.

Paint process shall feature Sikkens high solid LV products and be performed in the following steps:

- Corrosion Prevention all aluminum surfaces shall be pre-treated with the Alodine 5700 conversion coating to provide superior corrosion resistance and excellent adhesion of the base coat.
- Sikkens Sealer/Primer LV acrylic urethane sealer/primer shall be applied to guarantee excellent gloss hold-out, chip resistance and a uniform base color.
- Sikkens High Solid LVBT650 (Base coat) a lead-free, chromate-free high solid acrylic urethane base coat shall be applied, providing excellent coverage and durability. A minimum of two (2) coats shall be applied.
- Sikkens High Solid LVBT650 (Clear coat) high solid LV clear coat shall be applied as the final step in order to ensure full gloss and color retention and durability. A minimum of two (2) coats shall be applied.

Any location where aluminum is penetrated after painting, for the purpose of mounting steps, hand rails, doors, lights, or other specified components shall be treated at the point of penetration with a corrosion inhibiting pre-treatment (ECK Corrosion Control). The pre-treatment shall be applied to the aluminum sheet metal or aluminum extrusions in all locations where the aluminum has been penetrated. All hardware used in mounting steps, hand rails, doors, lights, or other specified components shall be individually treated with the corrosion inhibiting pre-treatment.

After the paint process is complete, the gloss rating of the unit shall be tested with a 20 degree gloss meter. Coating thickness shall be measured with a digital MIL gauge and the orange peel with a digital wave scan device.

INTERIOR PAINT

Cab Interior Paint

The interior of the cab shall be painted Zolatone gray #20-64. Prior to painting, all exposed interior metal surfaces shall be pretreated using a corrosion prevention system.

STRIPING

Striping

Reflective striping shall be provided and installed by the dealer/customer.

Scotchlite Chassis Stripe

Scotchlite chassis stripe shall be 3/4" Black Scotchlite. Stripe shall be centrally located and shall contour with the chassis, following the paint break.

Rear Body Scotchlite Striping

Printed chevron style Scotchlite striping shall be provided on the rear of the apparatus. The stripes shall consist of 6" Yellow/Red alternating stripes in an "A" pattern. The striping shall be

located on the rear facing extrusions, panels, doors and inboard/outboard of the beavertails if applicable.

Designated Standing / Walking Area Indication

A 1" wide yellow line shall be applied to indicate the outside perimeter of designated standing and walking areas above 48" from the ground in compliance with 2016 NFPA 1901. Steps, ladders and areas with a railing or structure at least 12" high are excluded from requiring the line.

WARRANTY / STANDARD & EXTENDED

Standard 1 Year Warranty

The apparatus manufacturer shall provide a full 1-year standard warranty. All components manufactured by the apparatus manufacturer shall be covered against defects in materials or workmanship for a 1-year period. All components covered by separate suppliers such as engines, transmissions, tires, and batteries shall maintain the warranty as provided by the component supplier. A copy of the warranty document shall be provided with the proposal.

Lifetime Frame Warranty

The apparatus manufacturer shall provide a full lifetime frame warranty. This warranty shall cover all apparatus manufacturer designed frame, frame members, and cross-members against defects in materials or workmanship for the lifetime of the covered apparatus. A copy of the warranty document shall be provided with the proposal. Frame warranties that do not cover cross-members for the life of the vehicle shall not be acceptable.

10 Year 100,000 Mile Structural Warranty

The apparatus manufacturer shall provide a comprehensive 10 year/100,000 mile structural warranty. This warranty shall cover all structural components of the cab and/or body manufactured by the apparatus manufacturer against defects in materials or workmanship for 10 years or 100,000 miles, whichever occurs first. Excluded from this warranty are all hardware, mechanical items, electrical items, or paint finishes. A copy of the warranty document shall be provided with the proposal.

10 Year Stainless Steel Plumbing Warranty

The apparatus manufacturer shall provide a full 10-year stainless steel plumbing components warranty. This warranty shall cover defects in materials or workmanship of apparatus manufacturer designed foam/water plumbing system stainless steel components for 10 years. A copy of the warranty document shall be provided with the proposal.

10 Year Paint and Corrosion Warranty

The apparatus manufacturer shall provide a 10-year limited paint and corrosion perforation warranty. This warranty shall cover paint peeling, cracking, blistering, and corrosion provided the vehicle is used in a normal and reasonable manner.

The paint shall be prorated for 10 years as follows:

Topcoat & Appearance: Gloss, Color Retention, Cracking		Coating System, Adhesion & Corrosion: Includes Dissimilar metal corrosion, Flaking, Blistering, Bubbling		
0 to 72 months 73 to 120 months	100% 50%	0 to 36 months 37 to 84 months 85 to 120 months	100% 50% 25%	

Corrosion perforation shall be covered 100% for 10 years. Corrosion perforation is defined as complete penetration through the exterior metal of the apparatus.

The warranty period shall begin upon delivery of the apparatus to the original user-purchaser. A copy of the warranty document shall be provided with the proposal.

UV paint fade shall be covered in a separate warranty supplied by Akzo Nobel (Sikkens) and shall be for a minimum of 10 years.

25 Year Frame Rail Corrosion Warranty

The chassis manufacturer shall provide a 25 year corrosion warranty on the chassis frame rails. This warranty shall cover the chassis frame rails, including frame rail liners (if equipped), for a period of 25 years after the date on which the vehicle is delivered to the original purchaser. A copy of the warranty document shall be provided with the proposal. Please refer to warranty document for complete details and exclusions.

SUPPORT, DELIVERY, INSPECTIONS AND MANUALS

Approval Drawings

A general arrangement drawing depicting the vehicles appearance shall be provided. The drawing shall consist of left side, right side, front, and rear elevation views.

Vehicles requiring pump controls shall include a general arrangement view of the pump operator`s position, scaled the same as the elevation views.

Electronic Manuals

Two (2) copies of all operator, service, and parts manuals MUST be supplied at the time of delivery in electronic format (CD-ROMs) -NO EXCEPTIONS! The electronic manuals shall include the following information:

- Operating Instructions, descriptions, specifications, and ratings of the cab, chassis, body, aerial (if applicable), installed components, and auxiliary systems.
- Warnings and cautions pertaining to the operation and maintenance of the fire apparatus and fire fighting systems.
- Charts, tables, checklists, and illustrations relating to lubrication, cleaning, troubleshooting, diagnostics, and inspections.
- Instructions regarding the frequency and procedure for recommended maintenance.
- Maintenance instructions for the repair and replacement of installed components.
- Parts listing with descriptions and illustrations for identification.
- Warranty descriptions and coverage.

The CD-ROM shall incorporate a navigation page with electronic links to the operator's manual, service manual, parts manual, and warranty information, as well as instructions on how to use the manual. Each copy shall include a table of contents with links to the specified documents or illustrations.

The CD must be formatted in such a manner as to allow not only the printing of the entire manual, but to also the cutting, pasting, or copying of individual documents to other electronic media, such as electronic mail, memos, and the like.

A find feature shall be included to allow for searches by text or by part number.

These electronic manuals shall be accessible from any computer operating system capable of supporting portable document format (PDF). Permanent copies of all pertinent data shall be kept file at both the local dealership and at the manufacturer's location.

NOTE: Engine overhaul, engine parts, transmission overhaul, and transmission parts manuals are not included.

Fire Apparatus Safety Guide

Fire Apparatus Safety Guide published by FAMA, latest edition. This safety manual is intended to point out some of the basic safety situations that may be encountered during the normal operation and maintenance of a fire apparatus and to suggest possible ways of dealing with these situations. This manual is NOT a substitute for the E-ONE's fire apparatus operator and maintenance manuals or commercial chassis manufacturer's operator and maintenance manuals.



Fire Apparatus Quotation for: PEMBROKE PINES FIRE RESCUE



Quotation Number:	80703 Rev: 68			
Unit Description:	PMPR-TYPH			
Quote Description:	Pumper, Typhoon	Sales	person:	RWILSON
Salescode	Extended Description	Qty		
FRAME ASSEMBLY				
1250-0011	Rear underbody support frame.	1		
1250-0080	Frame assembly with 10.25 x 3.5 x .375 powder coated galvanized rails.	1		
1250-0083	Frame liner 9.375 x 3.125 x .375, galvanized and powder coated.	1		
AXLE OPTIONS				
1025-0017	Meritor RS-25-160 single rear axle 27,000 lb. capacity.	1		
1025-0028	Koni shock absorbers for front axle - adjustable.	1		
1025-0123	Meritor FL941 front axle 19,840 lb.	1		
SUSPENSIONS				
1070-0027	Rear suspension FIREMAAX EX model FMX-272 27,000 lb. single axle air ride.	1		
TIRE OPTIONS				
1060-0005	Four Michelin 12R tires model XZE highway tread for rear axle.	1		
1060-0047	Two Michelin 385 tires model XFE for front axle.	1		
1060-0053	PressurePro tire pressure monitoring system for single rear axle units. Includes bail mounted display in cab.	1		
BRAKE SYSTEMS				
1100-0001	Meritor EX225H 17" disc brakes for front axle.	1		
1100-0002	ArvinMeritor 16-1/2" x 7" S-cam brakes with cast brake drums for a single rear axle.	1		
1100-0005	Brake system air 4X2/4X4.	1		
1100-0006	Parking brake release mounted on the driver's side lower dash.	1		
1100-0020	Compression fittings for all air brake system lines. Includes cab interior air lines as applicable.	1		
		1		

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Salescode	Extended Description	Qty	
BRAKE SYSTEMS			
1100-0024	G4 Electronic Stability Control (4x2), Includes RSC and ATC. Not available on 4x4, commercial chassis or tiller.	1	
TESTING COMPLIANCE S	TANDARD		
1001-0065	The E-ONE supplied components of the vehicle shall meet the requirements of NFPA 1901, 2016 edition.	1	
3090-0002	OAH. Unit has no overall height restrictions.	1	
3090-0004	OAL. Unit has no overall length restrictions.	1	
3090-0007	Hosebed hoseload allowance on the apparatus shall be 1200 lbs.	1	
3340-1137-12C	Equipment allowance on the apparatus shall be 2500 lbs. This allowance is in addition to the weight of the hoses and ground ladders listed in the shop order as applicable.	1	
BUMPER TRAYS			
1150-0292	Bumper tray with no slats extending full width of the bumper as applicable based on outboard options. Includes notched frame extensions to provide at least 6" tray depth directly above the extensions. Tray to have multiple depth to meet customer specific requirements.	1	
1150-0302	Raised diamond plate lid with dual chrome grab handles, stainless steel butterfly latches and gas shocks. The lid shall be full width (as applicable based on outboard options) and high enough to accomodate reels, rescue tools and equipment as applicable per customer specific requirements.	1	
BUMPERS			
1160-0001	Bumper 12" high swept back stainless steel.	1	
1160-0008	3/16" Front Bumper Gravel Shield.	1	
1160-0015	24" Front Bumper Gravel Shield Extension.	1	
WHEEL OPTIONS			
1050-0007	Front axle wheel trim kit. Includes stainless steel lug nut covers (chrome plated plastic if applicable) and center cap with E-ONE logo. Note: Center cap will have an inspection port IPO a logo if equipped with Stemco oil seals.	1	
1050-0008	Rear axle (single) wheel trim kit. Includes stainless steel lug nut covers (chrome plated plastic if applicable) and center cap with E-ONE logo. E-ONE custom chassis w/steel wheels will have chrome plated plastic lug covers.	1	
1050-0044	Accuride aluminum wheels for front axle (2).	1	
1050-0045	Accuride aluminum wheels for rear axle (4).	1	

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Salescode	Extended Description	Qty	
AIR SYSTEM OPTIONS			
1110-0000-001	Inlet for air system. Location: driver door jamb.	1	
1110-0002	Air dryer Bendix AD-9.	1	
1110-0005	Automatic moisture ejectors, heated.	1	
1110-0006	Air lines nylon.	1	
1110-0027	Isolated air tank. Includes pressure protection valve.	1	
1110-0041	Air horns Grover recessed in bumper (PR).	1	
1110-0043	Auxiliary air tank to be plumbed to the following optional accessories (if equipped): Chassis air horns, brake system air outlet, air reel, light tower, air primer and or customer/dealer supplied pneumatic add-on(s).	1	
ENGINES & TRANSMISSI	ONS		
1200-0017	Push-button transmission shift selector.	1	
1200-0020	TransSynd synthetic transmission fluid for EVS3000.	1	
1200-0097	Electronic limiting of speed to 68 MPH maximum. Note: Max speed may be set at 65 MPH due to tire rating.	1	
1200-0341	Eng/Trans Cummins L9 450HP/EVS3000 2017 EPA compliant engine.	1	
SECONDARY BRAKING			
1125-0002	Jacobs engine compression brake.	1	
1125-0023	Transmission to seek second gear when Jacobs engine brake or Telma retarder is engaged. N/A with Trans retarder.	1	
COOLING PACKAGE			
1800-0013	Cooling system for use with Cyclone II X, Typhoon X, and Quest chassis. For use with 2010 / 2013 / 2016 EPA engines. Includes coolant recovery system.	1	
FUEL SYSTEMS			
1350-0003	Fuel system 50 gallon.	1	
1350-0008	Fuel water separator Fuel-Pro 382 (Cummins FH2309). Filter is top serviceable.	1	
1350-0009	Fuel line hose braided. Includes fuel pick-up (if applicable).	1	
1350-0012-E69	Fuel shut-off valve. Location: one (1) inlet side of fuel/water separator.	1	
ALTERNATOR			
1700-0005	Alternator Leece Neville 320 amp. 320 amp SAE/275 amp NFPA.	1	
BATTERIES			
1400-0002	Battery four group 31 1000 CCA.	1	

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Salescode	Extended Description	Qty	
CHASSIS OPTIONS			
1680-0005	Thermatic fan clutch.	1	
1680-0006	Drivelines 1710.	1	
1680-0008	Tow eyes front painted below bumper/cab (PR).	1	
1680-0011	Tow eyes rear below body, painted.	1	
1680-0250-M58	Diesel Exhaust Fluid (DEF) 5 gallon tank for 2013 / 2016 EPA engines. Location: left side below rear of cab.	1	
1680-0284	Radiator mounted power steering cooler.	1	
CAB MODEL			
1520-0021	Typhoon X long cab with 67.5" CA. Includes barrier style doors.	1	
CAB ROOF TYPE			
1615-0010	Cab roof to be "flat" (non-vista).	1	
CAB BADGE PACKAGE			
1610-0000	Cab and body to have applicable E-ONE logos.	1	
GRILLE			
1620-0006	CIIX stainless steel grille for Typhoon X.	1	
CAB DOOR OPTIONS			
1550-0003	Rear crew cab doors in the medium position.	1	
1550-0005	Driver and officer cab door windows. Include forward vent windows.	1	
1550-0013	Driver and Officer door windows. Includes electric roll-down actuation. Each door to have individual control at door position and the driver door is to have master control for all power window locations.	1	
1550-0024	All cab doors shall have exterior paddle latches.	1	
1550-0038-658	(4) LED cab step area lighting. Locate each light in the cab step well area. Lights to be switched with door ajar.	1	
1550-0072	Cab door panels aluminum painted Zolatone gray.	1	
1550-0077	Interior cab door locks - manual. Will have manual actuation from each respective door. Includes barrel style key lock on each exterior cab door.	1	
1550-0083	All cab exterior access doors to have CH751 keyed locks.	1	
1550-0102	Rear crew cab door windows with rear fixed panel. Includes electric roll-down actuation. Each door to have individual controls. For use with paddle style door latching.	1	

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Salescoue	Extended Description	QLy	
CAB DOOR OPTIONS			
1550-0114	Map pockets cab front doors aluminum plate painted Zolatone gray.	1	
1550-0178-000-J7	Red/Fluorescent Yellow Green Reflexite V98 chevron "A" stripe on lower cab door panel approx 12" high. Stainless steel/painted door panels only. TyphoonX, CIIX and QST2 only.	1	
CAB STEP OPTIONS			
1640-0045-158	Step below cab door. Open back style with angled corners. Located driver's front door. Steps under front cab doors shall not interfere with approach angle.	1	
1640-0045-159	Step below cab door. Open back style with angled corners. Located officer's front door. Steps under front cab doors shall not interfere with approach angle.	1	
1640-0045-160	Step below cab door. Open back style with angled corners. Located driver's rear door. Steps under front cab doors shall not interfere with approach angle.	1	
1640-0045-161	Step below cab door. Open back style with angled corners. Located officer's rear door. Steps under front cab doors shall not interfere with approach angle.	1	
1640-0047	Lower steps to extend 3.5" past cab. Barrier doors only.	1	
MIRRORS			
1670-0001-274	Ramco 6001FFR mirrors. Remote controlled with top CAS750 convex. Location: mounted on front corners of cab.	1	
1670-0031	2" extension for Ramco mirrors.	1	
MISC EXTERIOR CAB OP	TIONS		
1550-0020	Windows cab side fixed driver's side.	1	
1550-0033	Windows cab side fixed officer's side.	1	
1675-0022	Pair of 18" handrails located just behind driver and officer front door one each side.	1	
1675-0023	Pair of 18" handrails located just behind driver and officer rear door (ALS doors if equipped) one each side.	1	
1675-0030	Mud flaps, front, black with E-ONE logo.	1	
1675-0049	Rear cab wall to be smooth 3/16" aluminum plate with a diamond plate overlay.	1	
1675-0212	Mounting plate for battery charger receptacle, indicator, air inlet, etc (if applicable). Plate to be removable polished stainless steel.	1	
1675-0254	Rear cab and vista glass (if so equipped) to be dark tint (smoked glass with approx 30% light transmittance) IPOS. Includes all glass rearward of front cab doors.	1	
HVAC			
1515-0017	Air conditioning for the Typhoon X, CII X and Quest with Cummins ISC/ISL	1	
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Salescode	Extended Description	Qty	
HVAC			
	engine and radiator mounted condenser.		
1515-0045	Controls for heating and air conditioning shall be located in the center dash area	1	
	upper tier offset to driver side. For use with severe duty dash only.		
SEATS			
1510-0004	Seats, Bostrom brand.	1	
1510-0008	Seat color gray.	1	
1510-0037	Seat cover material Durawear.	1	
1510-0043	Driver seat to be Bostrom air ride.	1	
1510-0046	Officer seat to be Bostrom air ride SCBA.	1	
1510-0054	Rear facing Bostrom seat with SCBA driver's side.	1	
1510-0057	Rear facing Bostrom seat with SCBA officer's side.	1	
1510-0116-130	Fold-down seat located driver's side outboard.	1	
1510-0116-132	Fold-down seat located officer's side outboard.	1	
1510-0117-147	Bostrom SecureAll mechanical air pack bottle bracket (EA). Location: officer's seat.	1	
1510-0117-148	Bostrom SecureAll mechanical air pack bottle bracket (EA). Location: rear facing driver's side.	1	
1510-0117-215	Bostrom SecureAll mechanical air pack bottle bracket (EA). Location: rear facing officer's side.	1	
1510-0123-131	Fold down seat with Bostrom SCBA back located driver's side inboard.	1	
1510-0123-133	Fold down seat with Bostrom SCBA back located officer's side inboard.	1	
1510-0131-152	Bostrom SecureAll mechanical air pack bottle bracket (EA) for bench / fold-down seat. Location: inboard officer's side rear wall.	1	
1685-0035	Seating capacity tag of eight occupants.	1	
MISC INTERIOR CAB OP	TIONS		
1685-0000	Cab interior gray. Does not include engine cover or seat color.	1	
1685-0005	Lexan sun visors, driver and officer's side overhead.	1	
1685-0084	3/16" Aluminum plate on top engine access door. To have swirl finish and be spaced up approx 1/2".	1	
1685-0187	Severe duty engine cover, molded polyurethane.	1	
1685-0369	Severe duty dash package with low profile officer side dash. Includes smooth plate alum center and officer side dash and lower kick panels; all painted to match cab interior.	1	

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Salescode	Extended Description	Qty	
CAB ELECTRICAL OPTI	ONS		
1750-0013-172	Turn signal Whelen 600 LED amber arrow pair located upper headlight bezel.	1	
1750-0016	Pump hourmeter in cab.	1	
1750-0022	Battery charger Kussmaul 40 amp model 1200 with air compressor.	1	
1750-0024-179-04	Auto-Eject receptacle inlet 20 amp located outside driver's door next to handrail with a Yellow cover.	1	
1750-0027	Control push-button switch officer dash for Q2B siren.	1	
1750-0046-195	Cab Headlights. Position: lower.	1	
1750-0061	Control push-button switch officer dash for air horns.	1	
1750-0072-545	12 VDC (or 24VDC) electrical outlet in the cab wired battery hot. Location: In cab driver side on 3 x 3 post rear facing just above engine cover.	1	
1750-0072-592	12 VDC (or 24VDC) electrical outlet in the cab wired battery hot. Location: driver side dash.	1	
1750-0072-593	12 VDC (or 24VDC) electrical outlet in the cab wired battery hot. Location: officer side dash.	1	
1750-0075	English dominant main cab gauge cluster.	1	
1750-0198-A31	Battery charger to be located behind driver's seat.	1	
1750-0199-A31	Air compressor to be located behind driver's seat.	1	
1750-0429-545	Dual USB charging ports in the cab wired battery hot. Location: In cab driver side on 3 x 3 post rear facing just above engine cover.	1	
1750-0429-592	Dual USB charging ports in the cab wired battery hot. Location: driver side dash.	1	
1750-0429-593	Dual USB charging ports in the cab wired battery hot. Location: officer side dash.	1	
1750-0435	Halogen cab headlights. TyphoonX, CIIX and QST2 only.	1	
1750-0449	Momentary DPF regeneration override switch.	1	
5400-0057	Dome Its red/white 4" LED (4). Lights to be located two front and two rear. White light wired through door and light assembly mounted rocker switch. Red light through light assembly mounted rocker switch.	1	
BODY COMPT LEFT SID	DE		
3100-0161	Driver side body with 42" wide x 30" high wide forward lower compartmentation and 42" wide x 34.75" high forward upper compartmentation. 42" wide full height rearward compartmentation. Includes (1) 56" wide compartment over the wheel well.	1	
BODY COMPT RIGHT S	IDE		
3120-0193	Officer side body with full height 42" wide forward and 42" wide rearward	1	
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Salescode	Extended Description	Qty	
BODY COMPT RIGHT SI	DE		
	compartmentation. Includes (1) 56" wide compartment over the wheel well and one (1) storage tunnel.		
BODY COMPT REAR			
3110-0013	Full Height Rear Compartment with Officer Side Storage Tunnel. Includes smooth plate panels and storage access door with push button latch.	1	
3340-0116	Bolt-on diamond plate 14" tailboard (full width of body). Includes (2) squared off beavertails (no stanchions) with removable outer panels and handrails- (2) vertical on trailing edge of body and horizontal mounted handrail(s) below hosebed.	1	
DOORS			
3300-0008-003	Door double vertical hinged painted. Location(s): L1.	1	
3300-0017-004	Door roll up short (up to 45") with satin finish ROM. Location(s): L2.	1	
3300-0017-005	Door roll up short (up to 45") with satin finish ROM. Location(s): L3.	1	
3300-0017-016	Door roll up short (up to 45") with satin finish ROM. Location(s): R2.	1	
3300-0019-006	Door roll up tall (greater than 45") with satin finish ROM. Location(s): L4.	1	
3300-0019-015	Door roll up tall (greater than 45") with satin finish ROM. Location(s): R1.	1	
3300-0019-017	Door roll up tall (greater than 45") with satin finish ROM. Location(s): R3.	1	
3300-0019-027	Door roll up tall (greater than 45") with satin finish ROM. Location(s): B1.	1	
3300-0063-003	Keyed roll-up compartment door with #1250 key. Location(s): L1.	1	
3300-0063-004	Keyed roll-up compartment door with #1250 key. Location(s): L2.	1	
3300-0063-005	Keyed roll-up compartment door with #1250 key. Location(s): L3.	1	
3300-0063-015	Keyed roll-up compartment door with #1250 key. Location(s): R1.	1	
3300-0063-016	Keyed roll-up compartment door with #1250 key. Location(s): R2.	1	
3300-0063-017	Keyed roll-up compartment door with #1250 key. Location(s): R3.	1	
3300-0063-027	Keyed roll-up compartment door with #1250 key. Location(s): B1.	1	
SHELVES		· · ·	
3370-0052-003	Adjustable shelf (J-Style) for non-transverse compartments 16" or greater in depth. Location: L1.	2	
3370-0052-027	Adjustable shelf (J-Style) for non-transverse compartments 16" or greater in depth. Location: B1.	1	
3370-0052-073	Adjustable shelf (J-Style) for non-transverse compartments 16" or greater in depth. Location: R1 lower.	2	

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Salescode	Extended Description	Qty	
SHELVES			
3370-0052-075	Adjustable shelf (J-Style) for non-transverse compartments 16" or greater in depth. Location: R3 lower.	2	
3370-0053-074	Adjustable shelf (C-Style) for non-transverse compartments up to 15.99" in depth. Location: R1 upper.	1	
3370-0054-003	Tracks for adjustable shelf and/or adjustable tray in compartments 16" or greater in depth. Location: L1.	1	
3370-0054-004	Tracks for adjustable shelf and/or adjustable tray in compartments 16" or greater in depth. Location: L2.	1	
3370-0054-005	Tracks for adjustable shelf and/or adjustable tray in compartments 16" or greater in depth. Location: L3.	1	
3370-0054-027	Tracks for adjustable shelf and/or adjustable tray in compartments 16" or greater in depth. Location: B1.	1	
3370-0054-073	Tracks for adjustable shelf and/or adjustable tray in compartments 16" or greater in depth. Location: R1 lower.	1	
3370-0054-075	Tracks for adjustable shelf and/or adjustable tray in compartments 16" or greater in depth. Location: R3 lower.	1	
3370-0055-074	Tracks for adjustable shelf in shallow compartments up to 15.99" deep. Location: R1 upper.	1	
TRAYS / TOOLBOARDS		· · ·	
3380-0015-016	Fixed back wall mounted toolboard. Toolboard to be spaced off wall a half inch. Location(s): R2.	1	
3380-0023-004	Adjustable mounted roll-out/tilt-down tray. Location(s): L2. For use in single depth or rescue style compartments.	1	
3380-0023-005	Adjustable mounted roll-out/tilt-down tray. Location(s): L3. For use in single depth or rescue style compartments.	1	
3380-0049-135	Running board suction tray (floating style). Includes tapered 3" front corner and removable slats in bottom of tray. Location(s): driver side running board.	1	
3380-0049-136	Running board suction tray (floating style). Includes tapered 3" front corner and removable slats in bottom of tray. Location(s): officer side running board.	1	
3380-0076-005	Tray, floor mounted roll-out with gas spring. 500 lbs. capacity. Location: L3.	1	
3380-0076-015	Tray, floor mounted roll-out with gas spring. 500 lbs. capacity. Location: R1.	1	
3380-0076-017	Tray, floor mounted roll-out with gas spring. 500 lbs. capacity. Location: R3.	1	
3380-0076-027	Tray, floor mounted roll-out with gas spring. 500 lbs. capacity. Location: B1.	1	
3380-0077-005	Tray, adjustable roll-out with 500 lbs. capacity and a gas shock. Location(s): L3.	1	
COVERS		·	

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BidSync

Salescode	Extended Description	Qty	
COVERS			
3305-0023	Nylon black cargo net at rear of diamond plate or vinyl hose bed cover or similar.	1	
3305-0027	Nylon black cargo net on sides of speedlay - one pair per speedlay.	3	
3305-0064-135	Nylon black strap with aluminum quick-release buckle for hose tray. Strap to attach to side walls of tray down low as applicable. Location: driver side running board.	1	
3305-0064-136	Nylon black strap with aluminum quick-release buckle for hose tray. Strap to attach to side walls of tray down low as applicable. Location: officer side running board.	1	
3305-0219	(2) piece light weight aluminum hose bed cover. Includes center hose bed divider with notched rear (as applicable), fill tower(s) access door(s) and handles (as applicable), gas shocks, positive hold opens/hold closed at rear, (2) grab handles front and (2) hand rails rear.	1	
PUMP MODULE			
3130-0167	Pump module to be 76" wide (side to side). Includes upper, lower, crosswalk, speedlay and tranverse module(s) if applicable.	1	
3130-0525	Top mount pump module with walkway and integral double speedlays (9" W). Extruded aluminum with runningboards. Includes formed walkway access steps.	1	
3130-0532	Pump panel opening is 39" wide. Pumper / tanker only.	1	
3130-0552	Pump module height is 85". Pumper / tanker only.	1	
3130-0671	The walkway step(s) shall be offset to the rear to accommodate pole/tripod light or other options located on the back of the cab. If equipped, the tool storage compartment door(s) shall be reduced in size.	1	
PUMP PANELS			
3134-0015	Stainless steel TM control panel, driver and officer side pump panels.	1	
3134-0133	Driver and officer side upper pump access panels to be horizontal hinged with stainless steel doors. Includes (2) push-button latches and (2) hold opens for each.	1	
MISC PUMP PANEL OPT	IONS		
4460-0000-282	Air outlet w/snubber valve. Location: driver's side pump panel.	1	
4460-0000-283	Air outlet w/snubber valve. Location: officer's side pump panel.	1	
4460-0003	Pump panel tags color coded per NFPA compliance.	1	
PUMP MODULE OPTION	S		
3136-0000-372	Air horn switch at pump panel. Switch to be labeled "Evacuation Alert". Location: top mount control panel.	1	
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Salescode	Extended Description	Qty	
PUMP MODULE OPTIONS	5		
3136-0011	P-Rubber in flex joint(s) between pump module and/or body modules.	1	
3136-0032	Spacer plate for quartz lights. Requires 4" additional cab to body gap.	1	
3136-0058	E-ONE logo mounted one each side on pump module/preconnect panels. Logos to be sized as applicable to available space on panels.	1	
3136-0073	Removable Poly Speedlay Tray(s). The floor of the tray(s) to be slotted to prevent the accumulation of water and allow for ventilation of wet hose. Includes vertical slotted hand hold cutouts on each end to facilitate easy removal of the hose tray.	2	
3136-0138	Pump module storage pan.	1	
3136-0146	Compartments for TM walkway (PR). Includes hinged door each side with push button latch and LED compartment light. Requires TM pump module with walkway.	1	
WATER TANK			
4010-0099	Fill tower(s) to be located offset to officer side of water tank.	1	
4010-0177	780 Gallon "R" Water Tank. UPF Poly III color fill towers. Note: Any foam cell(s) and/or storage options through the tank will reduce the overall water capacity.	1	
TANK PLUMBING			
4450-0010	2" tank fill Akron manual valve.	1	
4450-0119	3" tank to pump Akron manual valve w/4" tank connection.	1	
Foam tank			
4100-0037-590-16	50 gallon integral foam tank for Class A foam. UPF Poly III Green fill tower. Foam tank capacity will reduce the water tank capacity.	1	
LADDER STORAGE / RAC	CKS		
3365-0028	Hard Suction Storage Rack. Driver side compartment top. Includes spring hold downs and scuff plates behind spring mounts (as applicable).	1	
3365-0035	Hard Suction Storage Rack. Officer side compartment top. Includes spring hold downs and scuff plates behind spring mounts (as applicable).	1	
3365-0049	Brand of ladders capable of being carried on unit to be Alco-Lite.	1	
3365-0087-Z71	The length of ladders capable of being stored shall be the following: 24' 2-section, 14' roof ladder and 10' attic ladder w/shoes.	1	
3365-0149-097	Storage tunnel capable of holding: (1) 2-section, (1) roof, (1) attic, (2) pike poles, (1) backboard in Officer.	1	
HANDRAILS / STEPS			

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Salescode	Extended Description	Qty	
HANDRAILS / STEPS			
3330-0035	Recessed folding step box. Officer side rear. To accommodate all steps as applicable.	1	
3330-0073	Step rear intermediate embossed tread plate. Locate rear body. Includes handrail (in place of horizontal hosebed handrail).	1	
3330-0277	Innovative Controls dual lighted LED folding steps rear NFPA. Includes folding steps on driver side rear of the body. (staggered stepped as applicable with tailboard depth) for NFPA hosebed access and handrail mounted on driver side upper hosebed side (as applicable).	1	
3330-0278	Innovative Controls dual lighted LED folding steps rear NFPA. Includes folding steps on officer side (staggered stepped as applicable with tailboard depth) for additional hosebed access and handrail mounted on officer side upper hosebed side (as applicable).	1	
3330-0279-060	Innovative Controls dual lighted LED folding step. Location: officer side front compartment face. Each location requires a minimum of (1) handrail per NFPA.	4	
3330-0279-062	Innovative Controls dual lighted LED folding step. Location: driver side front compartment face. Each location requires a minimum of (1) handrail per NFPA.	4	
MISC BODY OPTIONS			
3340-0004	Hosebed above the booster tank. Includes forward hosebed and tower(s) cover plate work (as applicable). Hosebed adjustable divider extrusion rearward of the furthest tower is to run full width of the hosebed (as is practical with other hosebed mounted equipment).	1	
3340-0015	Diamond plate single axle wheel well. Includes bolt-on composite wheel well liners and aluminum trim fenderettes.	1	
3340-0035	Divider Long. To run full length of hose bed (front to rear).	1	
3340-0058	Recessed fuel fill driver side wheel well.	1	
3340-0063	Divider short. To run full length of hose bed (front to rear) behind dual fill towers or single set back fill tower.	2	
3340-0074	Body mainframe and hosebed side assemblies for a 85" high body.	1	
3340-0089-000-13	Turtle Tile Brand Black Floor Matting covering all applicable Compartment Floors, Shelves, and Rollout Trays.	1	
3340-0093	Mud flaps, rear, black with E-ONE logo.	1	
3340-0110	The rear of each hose bed divider to have a hand hold cut-out(s).	1	
3340-0145	Rub rail for the body and pump area module(s).	1	
3340-0681	Body mainframe layout line to be 24". Includes body and all applicable modules.	1	
SCBA BOTTLE STORAGE			

FI-16-0	1
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Salescode	Extended Description	Otv	
SCBA BOTTI E STORAGE		24	
2220 0100	Stran(a) loop style to retain SCRA bottle(c) Locate and par bottle in each	1	
5520-0100	exterior storage compartment.		
3320-0185-495	Fire Shopp brand (1) SCBA bottle storage with hinged door and push button	1	
	latch. Door shall have a brushed stainless steel finish. Door shall NOT cover the		
	recessed fuel fill if located adjacent to the SCBA storage. Location: driver side rear		
	wheel well offset forward		
3320-0185-497	Fire Shopp brand (1) SCBA bottle storage with hinged door and push button	1	
	latch. Door shall have a brushed stainless steel finish. Door shall NOT cover the		
	recessed fuel fill if located adjacent to the SCBA storage. Location: driver side rear		
	wheel well offset rearward		
3320-0185-498	Fire Shopp brand (1) SCBA bottle storage with hinged door and push button		
	latch. Door shall have a brushed stainless steel finish. Door shall NOT cover the		
	recessed fuel fill in located adjacent to the SCDA storage. Location.onicel side		
3320-0185-500	Fire Shopp brand (1) SCRA bottle storage with binged door and push button	1	
5526 0105 500	latch. Door shall have a brushed stainless steel finish. Door shall NOT cover the		
	recessed fuel fill if located adjacent to the SCBA storage. Location:officer side		
	rear wheel well offset rearward		
PUMPS			
4005-0032	Rating 1750 GPM	1	
4005-0196	Hale QMAX 1000-2250 GPM single stage pump. Requires primer option.	1	
PUMP CERTIFICATION			
4475-0000	Pump certification 750-2250 GPM	1	
PUMP OPTIONS		· · ·	
4015-0008	Zinc anodes for Hale pump (PR), (1) discharge side and (1) intake side.	1	
4015-0012	Pump shift override, side panel mounted.	1	
4015-0016	Thermal relief valve, Hale TRVL-120.	1	
4015-0038	Pump seal packing for Hale pump.	1	
4015-0053-198	Steamers to be Flush + 1". Location: driver's side.	1	
4015-0053-199	Steamers to be Flush + 1". Location: officer's side.	1	
4015-0098	Manual operated master pump drain. The master drain shall be clearly marked	1	
4015 0210	and placed in accessible location on pump panel.		
4012-0210	Pump cooler with innovative control 1/4 turn valve with a mandle and label.		
4015-0242	Indent primer W/3 barrel push button control. For use with 1250 GPM and larger		
		Page 13 of 20	2/14/2017

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Salescode	Extended Description	Otv	
PUMP OPTIONS		20	
	pumps. Requires 15.6 CFM or large engine air compressor.		
INTAKES		I	
4440-0004-202	2.5" side suction top mount control handle Akron manual valve. Location: driver side pump panel.	1	
4440-0004-203	2.5" side suction top mount control handle Akron manual valve. Location: officer side pump panel.	1	
4440-0015	5" Front Intake w/5" Air Actuated Valve and Relief.	1	
INTAKE OPTIONS			
4445-0004	Front intake swivel 5" polished chrome.	1	
4445-0016	Intake relief valve, Hale 2.5".	1	
DISCHARGES AND PREC	CONNECTS	· · · ·	
4415-0008	1.5" front bumper discharge Akron manual valve.	1	
4415-0014-581	2.5" Left Pump Panel Discharge Akron Manual Valve. Location: left side discharge 1.	1	
4415-0014-582	2.5" Left Pump Panel Discharge Akron Manual Valve. Location: left side discharge 2.	1	
4415-0016-584	2.5" Right Pump Panel Discharge Akron Manual Valve. Location: right side discharge 2.	1	
4415-0022-350	2.5" Left Rear Discharge Akron Manual Valve. Location: left rear discharge.	1	
4415-0022-678	2.5" Left Rear Discharge Akron Manual Valve. Location: left rear discharge 2 (inboard or below).	1	
4415-0041	3" Deck Gun Discharge, Akron manual valve.	1	
4415-0057-583	5" Right Pump Panel Discharge with 3" Akron Manual Valve. Location: right side discharge 1.	1	
4415-0065	1.5" Double Speedlay with Akron Manual Valves.	1	
4415-0178-531	Polished Stainless Steel Swivel Located on Top of Bumper driver's side of center tray for Front Bumper Discharge.	1	
4417-0106-L65	Deck gun piping to be positioned centered in deck gun channel.	1	
DISCHARGE OPTIONS			
4417-0176	Innovative Controls 3/4" bleeder/drain valve include lift lever with ergonomic grip.	10	
4417-0182	TM Valve controls to be Innovative Controls T-handles with grip activated lock.	16	
4417-0186	Innovative Controls discharge and intake bezels with color code and verbiage for	1	
	1	Page 14 of 20	2/14/2017

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Salescode	Extended Description	Otv	
DISCHARGE OPTIONS		20	
	top mount nump panel		
PRESSURE GOVERNORS			
4465-0011	Class 1 TPG pressure governor. Includes water oil volt and tachometer	1	
GAUGES			
4435-0002	Class 1 Intelli- I ank foam tank level gauge. On pump panel.	1	
4435-0026-356	Flowminder System. Discharge: deck gun.	1	
4435-0034	Fuel level gauge on pump operator's panel.	1	
4435-0067-527	Class 1/Whelen PSTank Water Tank Level Gauge Package. Location of Whelen PSTank Strip-Lights: each side of cab rear of front doors.	1	
4435-0246	2.5" Innovative Controls stainless steel case pressure gauge (0-400) with color code bezel.	10	
4435-0247	4" Innovative Controls stainless steel case master pressure gauges with bezel. Intake 30-0-400, and discharge 0-400.	1	
4435-0273	Class 1 flow meter totalizer button. Location Pump operator panel.	1	
FOAM SYSTEMS			
4430-0047-562	125 GPM Akron foam eductor. Location: 1.5 first speedlay.	1	
4430-0079	The foam system performance shall be tested and certified in compliance with the applicable NFPA 1901 requirements.	1	
FOAM SYSTEM OPTIONS	i		
4432-0054-562	Akron Quick Disconnect Foam Pickup Tube on Driver's Side Pump Panel for Eductor. Located on: 1.5 first speedlay.	1	
ELECTRICAL SYSTEMS			
5010-0013-Y83	Vehicle data recorder - 2009 / 2016 NFPA compliant. Includes occupant detection with display. Display location: inboard on driver's side overhead console.	1	
5010-0036	V-MUX Electrical system for pumper / tanker / rescue.	1	
5010-0059-339	VFD Text display for V-MUX electrical system. Location: center of dash.	1	
LIGHT BARS		· · · ·	
5300-0505	Whelen MK8H 5" high mount for front light bar (PR).	1	
5300-0506-000-4T	Light bar LED color: Red with clear lenses	1	
5300-0507	Light bar Whelen Freedom IV Model F4X7 72" with 14 LED modules. Location: Centered on the front cab roof.	1	
5300-0508-036	Whelen Mini-Freedom IV side facing light bars (PR) 21.5" with 4 LED modules.	1	
		Page 15 of 20	2/14/2017

Salescode	Extended Description	Qty	
LIGHT BARS			
	Location: centered above rear cab doors.		
5300-0519	Whelen MK8H 5" high mount for mini side facing light bars (4).	1	
WARNING LIGHT PACKA	GES		
5550-0149-534	Whelen M6 Super LED lower level warning light package. Includes (10) red M6R	1	
	LED light heads w/chrome flanges. Locate side facing lights: at forward most		
	position, centered in rear wheel well, and on side of beavertail.		
WARNING LIGHTS			
5600-0078-479-06	Whelen Super LED beacon (PR) model L31H with Red domes. Location rear	1	
	upper body on aerial style brackets.		
5600-0099-439	Warning light Whelen 600 series Super LED (PR) red. Location: (1) each side	1	
5600-0099-464	Warning light Whelen 600 series Super LED (PR) red. Location: (1) each side of	1	
	cab down low just ahead of rear doors.		
5600-0099-467	Warning light Whelen 600 series Super LED (PR) red. Location: (1) each side	1	
	above tail lights.		
5600-0105-170	Hazard (door ajar) light 2" LED. Location: center overhead.	1	
5600-0241-457	Warning light Whelen M6R series Linear Super LED (PR) red. Location: (1) each side of body rear facing up high.	1	
5600-0302-471	Warning light Whelen M2 Super LED warning lights. Includes (2) red M2RC LED light heads with clear lenses and chrome flanges (if applicable). Location: (1) each side just behind rear wheels in rubrail if equipped.	1	
5600-0302-742	Warning light Whelen M2 Super LED warning lights. Includes (2) red M2RC LED light heads with clear lenses and chrome flanges (if applicable). Location: (1) each side in pump module rubrail if equipped.	1	
DIRECTIONAL LIGHT BA	RS	·	
3340-0125	Directonal light bar to be recess mounted. Located on rear area of body.	1	
5310-0017	Whelen Traffic Advisor model TAL65 LED - 36" long.	1	
5310-0020-846	Directional light bar control is to be located in the center overhead console offset to driver side.	1	
5310-0025	Directional light circuit wiring through upper level warning.	1	
SIRENS			
5500-0011-209	Federal Q2B siren - Pedestal mounted on bumper. Location: driver side front bumper.	1	
5500-0017	Whelen model 295HFSM1 siren with mechanical siren tone and microphone. N/A	1	

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Salescode	Extended Description	Qty	
SIRENS			
	in California.		
5500-0024-170	The electronic siren control is to be located on the center overhead.	1	
SPEAKERS			
5510-0007-209	Speaker Cast Products SA2401 100W thru bumper. Location: driver side front bumper.	1	
5510-0007-211	Speaker Cast Products SA2401 100W thru bumper. Location: officer side front bumper.	1	
DOT LIGHTING			
5150-0017	License plate light LED with chrome housing located at the rear of the body.	1	
5150-0056	Whelen 600 series LED vertical mount tail lights. Includes LED stop/tail, arrow turn and back-up lights with vertical Cast 3 housing and weatherproof connectors.	1	
5150-0068	Marker lights Britax LED amber/red rubber housed mounted on the rear body corners angled down.	1	
5150-0151	Marker light package cab / body LED. Body lights to be .75" Dia TecNiq for custom pumpers and tankers.	1	
LIGHTS - COMPARTM	ENT, STEP & GROUND		
5380-0032	Ground light package LED - large.	1	
5380-0252	Compartment light package ROM V4 LED for medium bodies. Includes two lights per compartment (four if transverse).	1	
5380-0281	Light recessed step TecNiq T440 4" LED. Locate one each side of top mount walkway.	1	
5380-0323	The auxiliary steps below the cab doors to have EON LED lights to illuminate the stepping surface and ground below (IPO lights indicated in the main ground light package).	1	
LIGHTS - DECK AND S	SCENE		
5390-0007	Deck/scene light circuit wiring through chassis reverse. Requires rear deck or scene light.	1	
5390-0036	Hose bed light circuit wiring through chassis reverse. Requires hose bed light.	1	
5390-0087-396	Whelen M6 Linear Super LED scene lights (PR). Switched in cab (lights mtd on the sides of apparatus to be switched separately). Locate (1) each side rear compartment face up high.	1	
5390-0089	Hose bed light Whelen PFBP12C LED. Locate center front of hose bed. Switched with work light switch in cab.	1	

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City of Pembroke Pines		FI-16-01
Extended Description	Qty	
IE		
Deck Lights - Optronics Model TLL44 (PR). Location: rear body/beavertail area on the trailing edge up high.	1	
Engine compartment light (EA).	1	
LED pump compartment light (EA).	1	
Map light, Sunnex at officer's A post.	1	
Golight model 2049 remote control spotlight with black housing. If one is selected it will be located centered on cab roof on a pedestal to rear of light bar. If two are selected, they will be located one each side of cab roof to rear of light bar.	1	
Weldon pump panel LED light package - top mount. Includes (2) lights per side pump panel and (3) lights for top mount panel. Side pump panels over 45" wide may require additional lights. Top mount only.	1	
Weldon LED pump panel light - additional (EA). Location: top mount control panel.	1	
Foot switch to control air horns located driver's side.	1	
Foot switch to control Q2B located driver's side.	1	
Camera back-up Safety Vision LCD model SV-CLCD70BA-625B with audio. For use	1	
with up to 2 cameras.		
The back-up camera monitor is to be located on the center dash offset driver.	1	
Safety Vision officer's side camera SV-622RS w/ SV-512 cable. Requires Safety Vision back-up camera option. Camera to be located on front cab corner (approx 31" bottom of camera to bottom of cab) interlocked with right turn signal.	1	

LIGHTS - NON-WAR	NING		
5400-0003	Engine compartment light (EA).	1	
5400-0011	LED pump compartment light (EA).	1	
5400-0042-166	Map light, Sunnex at officer's A post.	1	
5400-0061	Golight model 2049 remote control spotlight with black housing. If one is selected it will be located centered on cab roof on a pedestal to rear of light bar. If two are selected, they will be located one each side of cab roof to rear of light bar. bar.	1	
5400-0107	Weldon pump panel LED light package - top mount. Includes (2) lights per side pump panel and (3) lights for top mount panel. Side pump panels over 45" wide may require additional lights. Top mount only.	1	
5400-0109-372	Weldon LED pump panel light - additional (EA). Location: top mount control panel.	1	
CONTROLS / SWITC	CHES		
5100-0000-198	Foot switch to control air horns located driver's side.	1	
5100-0006-198	Foot switch to control Q2B located driver's side.	1	
CAMERAS / INTERC	ОМ		
5350-0001	Camera back-up Safety Vision LCD model SV-CLCD70BA-625B with audio. For use with up to 2 cameras.	1	
5350-0103-X09	The back-up camera monitor is to be located on the center dash offset driver.	1	
5350-0182	Safety Vision officer's side camera SV-622RS w/ SV-512 cable. Requires Safety Vision back-up camera option. Camera to be located on front cab corner (approx 31" bottom of camera to bottom of cab) interlocked with right turn signal. Camera only - does not include monitor.	1	
MISC ELECTRICAL			
1750-0082-762	12V power distribution module. Includes (6) battery hot and (6) switched hot circuits. 100 amps max (IATS). Location: behind officer's seat.	1	
5110-0017	Back-up alarm 97 dB.	1	
LIGHTS - QUARTZ			
5450-0122-190	Light Whelen Pioneer Plus model PFP2 12V with brow mount (EA). Includes switch in cab accessible to driver (driver and officer side facing lights switched	1	
		Page 18 of 20	2/14/2017

Salescode LIGHTS - DECK AND SCENE

5390-0215-395

Salescode	Extended Description	Qty	
LIGHTS - QUARTZ			
	separately). Location(s): center of front cab brow.		
5450-0262-063	Light Whelen Pioneer model PFP2 12V with external bottom raise pole mount.	1	
	Includes switch accessible to driver. Location(s): officer side back of cab.		
5450-0262-064	Light Whelen Pioneer model PFP2 12V with external bottom raise pole mount.	1	
	Includes switch accessible to driver. Location(s): driver side back of cab.		
GROUND LADDERS			
7800-0007	Alco-Lite PRL-14' roof ladder.	1	
7800-0016	Alco-Lite PEL-24' 2-section extension ladder.	1	
7800-0032	Alco-Lite FL-10, 10' folding ladder w/safety shoes.	1	
MISC LOOSE EQUIPMEN	T		
7900-0014	DOT Required Drive Away Kit - Kit includes three (3) triangular warning reflectors	1	
	with carrying case. This kit is for the end user and is to remain with the truck.		
7900-0277	Wheel chocks 44" NFPA compliant, pair (PR) of Zico AC-44. Up to 44" diameter	1	
	tires.		
EXTERIOR PAINT			
8100-0064	Cab paint break - standard with dip to grille. Break is 31.5" inches below the drip	1	
	rail on Typhoon X and CII X cabs. Pre-07' emission Typhoon cab break is 33.5"		
	below the drip rail.		
8100-0065-000-17	Paint chassis frame rails, springs, cross-members, fire pump, drivelines, fuel and	1	
	air tanks, axles, front bumper extensions with brackets and front suction piping		
8100-0084	(If applicable) shall be painted: FLINA3225E-1 Red.		
0100-0004	finish. Includes upper and lower pump modules, crosswalk module and/or		
	speedlav/pre-connect module (as applicable). Rear mounted body/pump module		
	to be painted job color.		
8100-0116	Rear body surface to have a sanded finish (not painted job color). Includes	1	
	hinged doors that do not have discrete sales codes and removable panels.		
8100-0176-000-17	Paint E-ONE chassis cab - Sikkens paint. Color: FLNA3225E-1 Red.	1	
8100-0177-000-18	Paint cab Sikkens two-tone. Upper area of cab to be painted FLNA4006 White.	1	
8100-0182-000-17	Paint Body - Small - For Pumpers, Rear Mounts, S/A Tankers/Wetsides and	1	
	Rescues. Sikkens paint. Color: FLNA3225E-1 Red.		
INTERIOR PAINT			
8150-0011	The interior of the cab to be painted Zolatone gray.	1	
8150-0024	The lower area of the painted cab interior door panels to be masked off and left	1	
	I	Page 19 of 20	2/14/2017

Salescode	Extended Description	Qty	
INTERIOR PAINT			
	un-painted for reflective material.		
STRIPING			
8300-0001	NFPA required reflective striping to be dealer/customer applied.	1	
8300-0042	White rubrail scotchlite insert.	1	
8300-0273-000-J7	Chevron "A" style 6" Reflexite V98 striping on front bumper. Colors to be Red/Fluorescent Yellow Green.	1	
8300-0274-000-J7	Chevron "A" style 6" Reflexite V98 striping full width on rear of body. Includes rear facing extrusions, panels and doors. Colors to be Red/Fluorescent Yellow Green.	1	
8300-0313	Yellow line to indicate designated standing / walking areas above 48" high in compliance with 2016 NFPA 1901. Line to be 1" wide. Steps, ladders and areas with a railing or structure at least 12" high are excluded from requiring the line.	1	
WARRANTY / STANDAR	D & EXTENDED		
9100-0003	Lifetime Frame Warranty.	1	
9100-0004	10 Year/100,000 Mile Structural Warranty for Alum Cab / Body - Statement of Warranty.	1	
9100-0005	10 Year Stainless Steel Plumbing Warranty - Statement of Warranty.	1	
9100-0019	10 Year Limited Paint and Perforation Warranty - For Sikkens Paint.	1	
9100-0039	1 year full warranty.	1	
9100-0090	25 Year frame rail corrosion warranty. Includes liners (if equipped).	1	
SUPPORT, DELIVERY, IN	ISPECTIONS AND MANUALS		
9300-0009	Manuals, Operator and Service CD-ROM.	1	
9300-0016	Approval Drawings-Standard.	1	
9300-0316	Fire Apparatus Safety Guide published by FAMA, latest edition.	1	
Dealer Supplied Equipm	ent		



PEMBROKE PINES FIRE RESCUE PEMBROKE PINES, FL Q80703 RESCUE CAR42 PUMPER

1750 000			H	OSE L	OAD:		
TTO GPM I	HALE QMAX		NFPA				
TO GALLON	N WAIER						
SU GALLON	IN TEGRAL (LASS A	A FUAM				
COMPT.	OPENI	NG	INTER	IOR I	DIMEN	ISION	
L1	42W	30H	42W	3	ОН	26D	
L2	40W	25H	42W 42W	3H 22H	12 D 26 D	UPPER LOWER	
L3/R2	54W	25H	56W 56W	3H 22H	12 D 26 D	UPPER LOWER	
L4	40W	59H	42W 42W	3H 56H	12 D 26 D	UPPER LOWER	
R1/R3	40W	59H	42W 42W	3H 56H	12 D 26 D	UPPER LOWER	
B1	36W	46H	38W	5	6H	26D	
THIS DRAWING IS FOR REFERENCE PURPOSES. ALL DIMENSIONS ARE SUBJECT TO MINOR VARIATIONS DUE TO MANUFACTURING PROCESSES.							







PEMBROKE PINES FIRE RESCUE *DEMBROKE PINES, FL DEMBROKE PINES,*

THIS DRAWING IS FOR REFERENCE PURPOSES. ALL DIMENSIONS ARE SUBJECT TO MINOR VARIATIONS DUE TO MANUFACTURING PROCESSES.

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ZSCHULTZ A INITIAL RELEASE 2017-FEB-10 ZSCHULTZ DRAWN BY REV DESCRIPTION DATE APPROVED

Hall-Mark RTC

Item: Pre-Payment Discount Option

Attachments

Signed Vendor Information and W9.pdf



(OFFICE USE ONLY) Vendor number:

Please complete this vendor information form entirely along with the

IRS Form W-9, scan and upload it to the www.bidsync.com

Vendor Information Form

Operating Name (Payee)	REV RTC d/b/a Hall-Mark RTC				
Legal Name (as filed with IRS)	REV RTC d/b/a Hall-Mark RTC				
Remit-to Address (For Payments)	725 SW 46th AVE				
	Ocala, FL 34474				
Remit-to Contact Name:	Jorge Troyano	Title:	Sales Rep		
Email Address:	jtroyano@hall-markfire.	com			
Phone #:	(954) 235-4799	Fax #	(352) 629-2018		
Order-from Address (For purchase orders)	725 SW 46th Ave				
	Ocala, FL 34474				
Order-from Contact Name:	Dee Daniels	Title:	Director of Sales		
Email Address:	dee.daniels@revrtc.com				
Phone #:	(352) 629-6305	Fax #	(352) 629-6305		
Return-to Address (For product returns)	725 SW 46th Ave				
	Ocala, FL 34474				
Return-to Contact Name	Dee Daniels	Title:	Director of Sales		
Email Address:	dee.daniels@revrtc.com				
Phone #:	(352) 629-6305	Fax #	(352) 629-2018		
Payment Terms:	Net 30				

Type of Business (please check one and provide Federal Tax identification or social security Number)

✓ Corporation	Federal ID Number:	47-4454880
Sole Proprietorship/Individual	Social Security No.:	
Partnership		
Health Care Service Provider		
LLC – C (C corporation) – S (S corporation) – P	(partnership)	
Other (Specify):]	
Name of Applicant / Signature Dee Daniels	Digitall Date: 2	y signed by Dee Daniels 017.02.02 09:19:23 -05'00'
Title of Applicant Director of Sales		Date 2-2-17



Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

					_		_		_							
	1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.															
	REV RTC, Inc. I/K/ ASV RTC, Inc															
N	2 Business name/disregarded entity name, if different from above															
age	မ္တ d/b/a Hall-Mark RTC															
/pe ons on pa	3 Check appropriate box for federal tax classification; check only one of the following seven boxes: ☐ Individual/sole proprietor or ⑦ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate single-member LLC L Individual/sole proprietor or ⑦ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate									e 4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):						
nt or ty istructi	Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner.								ting							
C Pri	Other (see instructions)		_	(Applie	s to ace	s to accounts maintained outside the U.S.)										
ciţi	5 Address (number, street, and apt. or suite no.) Requester's name					ame and address (optional)										
ě	725 SW 46th Ave															
e g	6 City, state, and ZIP code															
Se	Ocala, FL 34474															
	7 List account number(s) here (optional)															
Par	t I Taxpayer Identification Number (TIN)															
Enter	your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoi	id Soc	cial s	ecurity	numt	ber		_								
backu reside entitie <i>TIN</i> or	p withholding. For individuals, this is generally your social security number (SSN). However, for nt alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other s, it is your employer identification number (EIN). If you do not have a number, see <i>How to get</i> a page 3.	ra a or		-			-									
Note.	If the account is in more than one name, see the instructions for line 1 and the chart on page 4	for Emp	ploy	er identi	ficati	on n	umb	er								
guide	nes on whose number to enter.	4	7	- 4	4	5	4	8	8	0						

Part II Certification

Under penalties of perjury, I certify that:

- 1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- 2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- 3. I am a U.S. citizen or other U.S. person (defined below); and
- 4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the

instruction	is on page 3.			
Sign Here	Signature of U.S. person ►	W	V	_{Date} ▶ 2-2-17

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at www.irs.gov/fw9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- · Form 1099-INT (interest earned or paid)
- · Form 1099-DIV (dividends, including those from stocks or mutual funds)
- · Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- · Form 1099-S (proceeds from real estate transactions)
- · Form 1099-K (merchant card and third party network transactions)

- . Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- · Form 1099-C (canceled debt)
- · Form 1099-A (acquisition or abandonment of secured property)
- Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding? on page 2.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued).

2. Certify that you are not subject to backup withholding, or

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and

4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See What is FATCA reporting? on page 2 for further information.

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Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

An individual who is a U.S. citizen or U.S. resident alien;

• A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;

An estate (other than a foreign estate); or

A domestic trust (as defined in Regulations section 301,7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership to conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

• In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;

 In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and

 In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporally present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding," Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,

 You do not certify your TIN when required (see the Part II instructions on page 3 for details), 3. The IRS tells the requester that you furnished an incorrect TIN,

 The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt* payee code on page 3 and the separate instructions for the Requester of Form W-9 for more information.

Also see Special rules for partnerships above.

What is FATCA reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code* on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment,

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. Individual. Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application,

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation. Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. Other entities. Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(o)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the Gisregarded entity is a foreign person, the u.S. The owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "S" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code.

 Generally, individuals (including sole proprietors) are not exempt from backup withholding.

 Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.

 Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.

 Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2-The United States or any of its agencies or instrumentalities

3-A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5-A corporation

6-A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

 $7{-}{\rm A}$ futures commission merchant registered with the Commodity Futures Trading Commission

8-A real estate investment trust

 $9-\mbox{An entity}$ registered at all times during the tax year under the Investment Company Act of 1940

10-A common trust fund operated by a bank under section 584(a)

11—A financial institution

12-A middleman known in the investment community as a nominee or custodian

13-A trust exempt from tax under section 664 or described in section 4947 The following chart shows types of payments that may be exempt from backup

withholding. The chart applies to the exempt payees listed above, 1 through 13.

THEN the payment is exempt for				
All exempt payees except for 7				
Exempt payees 1 through 4 and 6 through 11 and all C corporations, S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.				
Exempt payees 1 through 4				
Generally, exempt payees 1 through 5 ²				
Exempt payees 1 through 4				

¹See Form 1099-MISC, Miscellaneous Income, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank, Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B-The United States or any of its agencies or instrumentalities

C-A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D-A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E-A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F-A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G-A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I-A common trust fund as defined in section 584(a)

J-A bank as defined in section 581

K-A broker

L-A trust exempt from tax under section 664 or described in section 4947(a)(1) M-A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on this page), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at *www.ssa.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/businesses* and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S, entity that has a foreign owner must use the appropriate Form W-8.

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Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9, You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code* earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
 Individual Two or more individuals (joint account) 	The individual The actual owner of the account or, if combined funds, the first individual on the account
 Custodian account of a minor (Uniform Gift to Minors Act) 	The minor ²
 4. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law 	The grantor-trustee' The actual owner'
 Sole proprietorship or disregarded entity owned by an individual 	The owner ³
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i) (A))	The grantor*
For this type of account:	Give name and EIN of:
 Disregarded entity not owned by an individual 	The owner
8. A valid trust, estate, or pension trust	Legal entity ⁴
 Corporation or LLC electing corporate status on Form 8832 or Form 2553 	The corporation
 Association, club, religious, charitable, educational, or other tax- exempt organization 	The organization
 Partnership or multi-member LLC A broker or registered nominee 	The partnership The broker or nominee
13. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
 Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i) (B)) 	The trust

List first and circle the name of the person whose number you furnish. If only one person on a

joint account has an SSN, that person's number must be furnished.

² Circle the minor's name and furnish the minor's SSN

You must show your Individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line, You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN,

⁴ List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships* on page 2.

*Note. Grantor also must provide a Form W-9 to trustee of trust,

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed,

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- · Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov*. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: *spam@uce.gov* or contact them at *www.ftc.gov/idtheft* or 1-877-IDTHEFT (1-877-438-4338).

Visit IRS.gov to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.



(OFFICE USE ONLY) Vendor number:

Please complete this vendor information form entirely along with the

IRS Form W-9, scan and upload it to the www.bidsync.com

Vendor Information Form

Operating Name (Payee)	REV RTC d/b/a Hall-Mark RTC			
Legal Name (as filed with IRS)	REV RTC d/b/a Hall-Mark RTC			
Remit-to Address (For Payments)	725 SW 46th AVE			
142	Ocala, FL 34474			
Remit-to Contact Name:	Jorge Troyano	Title:	Sales Rep	
Email Address:	jtroyano@hall-markfire.c	com	M	
Phone #:	(954) 235-4799	Fax #	(352) 629-2018	
Order-from Address (For purchase orders)	725 SW 46th Ave			
	Ocala, FL 34474			
Order-from Contact Name:	Dee Daniels	Title:	Director of Sales	
Email Address:	dee.daniels@revrtc.com			
Phone #:	(352) 629-6305	Fax #	(352) 629-6305	
Return-to Address (For product returns)	725 SW 46th Ave			
4	Ocala, FL 34474			
Return-to Contact Name	Dee Daniels	Title:	Director of Sales	
Email Address:	dee.daniels@revrtc.com			
Phone #:	(352) 629-6305	Fax #	(352) 629-2018	
Payment Terms:	Net 30			

Type of Business (please check one and provide Federal Tax identification or social security Number)

Title of Applicant Director of Sales		Date2-2-17	
Name of Applicant / Signature Dee Daniels	Digitalı Date: 2	y signed by Dee Daniels 2017.02.02 09:19:23 -05'00'	
Other (Specify):			
LLC – C (C corporation) – S (S corporation) – F	(partnership)		
Health Care Service Provider			
Partnership			
Sole Proprietorship/Individual	Social Security No.:		
Corporation	Federal ID Number:	47-4454880	

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ACORD CERT	IFI	CA		ITY	' INSUF	RANCE	7/1/2017	DATE 1/	(MM/DD/YYYY) 30/2017
THIS CERTIFICATE IS ISSUED AS A MA CERTIFICATE DOES NOT AFFIRMATIVE BELOW. THIS CERTIFICATE OF INSUR REPRESENTATIVE OR PRODUCER, AND	TTEF LY O ANCE THE	R OF I R NE DOE CER	NFORMATION ONLY AND GATIVELY AMEND, EXTEN ES NOT CONSTITUTE A CO TIFICATE HOLDER.	CONFI ID OR ONTRA	ERS NO RIGH ALTER THE (CT BETWEEN	TS UPON TH COVERAGE A THE ISSUIN	E CERTIFICATE HOLDER AFFORDED BY THE POLI IG INSURER(S), AUTHOR	R. THIS CIES RIZED	
IMPORTANT: If the certificate holder is a If SUBROGATION IS WAIVED, subject to this certificate does not confer rights to	an Al the the c	DDITK terms ertific	ONAL INSURED, the policy and conditions of the policities and conditions of the policities of such a	(ies) m icy, cei endors	ust have ADI rtain policies ement(s).	DITIONAL INS may require a	SURED provisions or be o an endorsement. A state	endorsed ment on	I.
PRODUCER Lockton Companies	_			CONT	ACT				
Three City Place Drive, Suite 90	0			PHON (A/C,	E No, Ext):		FAX (A/C, N	o):	
(314) 432-0500				E-MA	L ESS:				
					IN	SURER(S) AFF	ORDING COVERAGE		NAIC #
				INSUR	RERA: First S	pecialty Insur	rance Corporation		34916
1356298 725 SW 46th Ave.				INSUF	RER B : Traveler	s Property Casualt	y Co of America		25674
Ocala FL 34474				INSUF	RERC: AXIS	Surplus Ins	urance Company		26620
				INSUR	RER D: Ine C	narter Oak Fit	re insurance Company		25615
				INSUF					
COVERAGES ALLSP CER	TIFI	CATE	ENUMBER: 14488711	INSUR	ERF:		REVISION NUMBER	XXX	VVVV
THIS IS TO CERTIFY THAT THE POLICIES INDICATED. NOTWITHSTANDING ANY RE CERTIFICATE MAY BE ISSUED OR MAY F EXCLUSIONS AND CONDITIONS OF SUC	S OF EQUIPERT H PO	INSU REME AIN, LICIE	RANCE LISTED BELOW HA INT, TERM OR CONDITION THE INSURANCE AFFORDI S. LIMITS SHOWN MAY H	AVE BE OF AN ED BY AVE BE	EN ISSUED IY CONTRAC THE POLICIE EN REDUCE	TO THE INSU T OR OTHER S DESCRIBE D BY PAID C POLICY EXP	RED NAMED ABOVE FOR DOCUMENT WITH RESP D HEREIN IS SUBJECT T LAIMS.	R THE PO PECT TO O ALL T	DLICY PERIOD WHICH THIS HE TERMS,
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CLAIMS-MADE X OCCUR	I	I I	1(02001584-05		//1/2010	//1/2017	DAMAGE TO RENTED	\$ 1,00	000
							MED EXP (Apy one person)	\$ 500	000
							PERSONAL & ADV INJURY	\$ 1.00	00.000
GEN'L AGGREGATE LIMIT APPLIES PER:							GENERAL AGGREGATE	s 4.00	00.000
X POLICY PRO- LOC							PRODUCTS - COMP/OP AGO	s 4.00	00.000
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							BODILY INJURY (Per person)	\$ XX	XXXXX
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D WORKERS COMPENSATION		N	TC20UB118D488216		7/1/2016	7/1/2017	Y PER OTH	• <u>^</u>	ΛΛΛΛΛ
AND EMPLOYERS' LIABILITY Y/N ANY PROPRIETOR/PARTNER/EXECUTIVE	NI / A		1020001100400210		//1/2010	//1/2017	A STATUTE I ER	s 1.00	0.000
OFFICER/MEMBER EXCLUDED?	N/A						EL DISEASE - EA EMPLOYEE	\$ 1.00	0,000
If yes, describe under DESCRIPTION OF OPERATIONS below							E.L. DISEASE - POLICY LIMIT	\$ 1,00	00,000
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ACORD 25 (2016/03)	_	-			©19	88-2015 AC	ORD CORPORATION	All riah	ts reserved

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City of Pembroke Pines

LICENSE CERTIFICATE

STATE OF FLORIDA DEPARTMENT OF HIGHWAY SAFETY AND MOTOR VEHICLES DIVISION OF MOTORIST SERVICES

REV RTC INC 725 SW 46TH AVE OCALA, FL 34474-8587

License

FOR AN INDEPENDENT DEALER IN MOTOR VEHICLES

EFFECTIVE DATE

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THIS CERTIFIES, THAT

REV RTC INC HALL-MARK RTC LICENSE NUMBER VI/1101217/1 PRIMARY LOT

EXPIRATION DATE

04/30/2018

AT 725 SW 46TH AVE

OCALA, FL 34474-8587

IS HEREBY LICENSED UNDER THE PROVISIONS OF SECTION

320.27, FLORIDA STATUTES TO CONDUCT AND CARRY ON BUSINESS AS AN INDEPENDENT DEALER IN MOTOR VEHICLES AT THE ABOVE DESCRIBED LOCATION

GIVEN UNDER MY HAND AND SEAL THE ABOVE DATE WRITTEN.

Julie W. Gentry

BUREAU CHIEF



DIRECTOR

STATE OF FLORIDA

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Hall-Mark RTC

Item: Trade-In Value Option for a: 1997 E-One Hush XLT (VIN # 4ENBAAA81V1007640)

Attachments

THE CITY OF PEMBROKE PINES Insurance requirements.pdf

			City of Pe	embroł	e Pines				FI-16-
ACORD CERT	IFI	CA	TE OF LIABIL	ITY.	INSUF	RANCE	7/1/2017	DATE 1/.	(MM/DD/YYYY) 30/2017
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PRODUCER Lockton Companies	•			CONTA NAME:	АСТ				
St. Louis MO 63141-7081	0			(A/C, N	o, Ext):		(Á/Ĉ, No):	
(314) 432-0500				ĀDDRE	SS:				
					ED A · First S	SURER(S) AFFO	ance Corporation		3/016
NSURED REV RTC. Inc. /F/K/A Hallmark				INSUR	FRB: Travelers	Property Casualty	y Co of America		25674
356298 725 SW 46th Ave.				INSUR	ERC: AXIS	Surplus Ins	urance Company		26620
Ocala FL 34474				INSUR	ER D: The Cl	narter Oak Fir	e Insurance Company		25615
				INSUR	ER E :				
				INSUR	ER F :				
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A X COMMERCIAL GENERAL LIABILITY	Y	Y	IRG2001384-03		7/1/2016	7/1/2017	EACH OCCURRENCE	\$ 1,0	00,000
CLAIMS-MADE X OCCUR							DAMAGE TO RENTED PREMISES (Ea occurrence)	\$ 300	,000
							MED EXP (Any one person)	\$ 5,0	00
							PERSONAL & ADV INJURY	\$ 1,0	00,000
GEN'L AGGREGATE LIMIT APPLIES PER:							GENERAL AGGREGATE	\$ 4,0	00,000
							PRODUCTS - COMP/OP AGG	\$ 4,0	00,000
	N	N	TC21CAP8E082581TH 16	5	7/1/2016	7/1/2017	COMBINED SINGLE LIMIT	° 1 0	00.000
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								\$ XX	XXXXX
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X EXCESS LIAB CLAIMS-MADE	-						AGGREGATE	\$ 5,0	00,000
DED RETENTION \$								\$ XX	XXXXX
D WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N		Ν	TC20UB118D488216		7/1/2016	7/1/2017	X STATUTE OTH	-	
ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED?	N/A						E.L. EACH ACCIDENT	\$ 1,0	00,000
(Mandatory in NH)							E.L. DISEASE - EA EMPLOYEE	\$ 1,0	00,000
DÉSCRIPTION OF OPERATIONS below							E.L. DISEASE - POLICY LIMIT	<u>\$</u> 1,0	00,000
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BidSync

COMMERCIAL GENERAL LIABILITY CG 20 10 07 04

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

SCHEDULE

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

Any person or organization for As per written contract. whom you are performing operations when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy.	Name Of Additional Insured Person(s) Or Organization(s):	Location(s) Of Covered Operations
	Any person or organization for whom you are performing operations when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy.	As per written contract.

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

- A. Section II Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:
 - 1. Your acts or omissions; or
 - 2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

- 1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
- 2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

BidSync

COMMERCIAL GENERAL LIABILITY CG 24 04 05 09

WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

SCHEDULE

Name Of Person Or Organization:

Any person or organization when you and such person or organization have agreed in writing in a contract or agreement that you will waive any right of recovery against such person or organization.

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

The following is added to Paragraph 8. Transfer Of Rights Of Recovery Against Others To Us of Section IV – Conditions:

We waive any right of recovery we may have against the person or organization shown in the Schedule above because of payments we make for injury or damage arising out of your ongoing operations or "your work" done under a contract with that person or organization and included in the "products-completed operations hazard". This waiver applies only to the person or organization shown in the Schedule above.

Supplier: Hall-Mark RTC



City of Pembroke Pines

Attachment A

CONTACT INFORMATION FORM

IN ACCORDANCE WITH **"IFB # FI-16-01"** dated **January 17, 2017** titled **"Fire Engine / Pumper Truck"** attached hereto as a part hereof, the undersigned submits the following:

<u>A) Contact Information</u>

The Contact information form shall be electronically signed by one duly authorized to do so, and in case signed by a deputy or subordinate, the principal's properly written authority to such deputy or subordinate must accompany the proposal. This form must be completed and submitted through www.bidsync.com as part of the bidder's submittal. The vendor must provide their pricing through the designated lines items listed on the BidSync website.

COMPANY INFORMATION:

COMPANY: **REV RTC d/b/a Hall-Mark RTC** STREET ADDRESS: **725 SW 46th Ave** CITY, STATE & ZIP CODE: **Ocala, FL 34474**

PRIMARY CONTACT FOR THE PROJECT:

NAME: Jorge Troyaon TITLE: Sales Rep E-MAIL: jtroyano@hall-markfire.com TELEPHONE: (954) 235-4799FAX: (352) 629-2018

AUTHORIZED APPROVER:

NAME: Dee Daniels TITLE: Director of Sales E-MAIL: dee.daniels@revrtc.com TELEPHONE: (352) 629-6305FAX: (352) 629-2018 SIGNATURE: Dee Daniels

B) Proposal Checklist

Are all materials, freight, labor and warranties included?	Yes 🗹 No 🗌
Does the proposal include two trips for four people to the plant; one trip for a pre-build meeting and the other trip for final inspection?	Yes 🗹 No 🗌
Is a "Contractor's Specifications", as requested in section 1.4.1 of the bid package, included in your submission?	Yes 🗹 No 🗌
Do you have any exceptions to the specifications?	Yes 🗌 No 🗹
1.4.6 of the bid package, included in your submission?	Yes 🗌 N/A 🗌
Pursuant to section 1.4.10, has the manufacturer been in business of making similar apparatus for a minimum of forty-five (45) years?	Yes 🗌 No 🗹
Pursuant to section 1.4.10, has the manufacturer built at least thirty (30) of similar units in the last five years?	Yes 🗹 No 🗌
Pursuant to section 1.4.10, is a list of five (5) departments in Florida with similar units, included in your submittal?	Yes 🗹 No 🗌
Pursuant to section 1.4.10, does the manufacturer have a licensed Full Service Center in Florida, preferably within Broward County and within (2.5) hours from the City of Pembroke Pines?	Yes 🗹 No 🗌
In addition, does the service center have mobile warranty service?	Yes 🗹 No 🗌
Pursuant to section 1.4.11, how many years has the manufacturer been producing their own chasis and body?	33 years.
Pursuant to section 1.4.12, is the manufacturer a current member of the Fire Apparatus Manufacturer's Association?	Yes 🗹 No 🗌
Pursuant to section 1.10.12, is a letter stating successful completion of the specified test on the brand of cab being supplied, included in the bid submittal?	Yes 🗹 No 🗌
Pursuant to section 1.10.13, is a copy of the certification letter of the seat belt testing included in the bid submittal?	Yes 🗹 No 🗌

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C) Sample Proposal Form

The following sample price proposal is for information only. The vendor must provide their pricing through the designated lines items listed on the BidSync website.

Item	Description	Cost
1)	Fire Engine / Pumper Truck Cost (including all parts, materials &	Price to be Submitted
	labor to furnish and deliver, as specified in the solicitation.)	via BidSync
2)	Pre-Payment Discount Option	Price to be Submitted
		via BidSync
3)	Trade-In Value Option for a: 1997 E-One Hush XLT (VIN #	
	4ENBAAA81V1007640) with approximately 61,000 miles and	Price to be Submitted
	1,900 hours (along with an In-frame Engine rebuild less than	via BidSync
	10,000 miles ago) (City Vehicle # 7757)	
	Total Cost Including	Price to be Submitted
	Pre-Payment Discount and Trade-In Value Options	via BidSync

Proposed Equipment and Maintenance Shop				
Fire Engine/Pumper Truck	E-ONE RESCUE PUMPER 2018 TYPHOON RESCUE			
Year. Make and Model	PUMPER 42/56			
,				
Maintenance Shop:	REV RTC DBA HALL-MARK RTC			
Name and Location				
(Must be located in				
Broward County)				
*If vendor takes exception to having a shop located in Broward County and within 2.5 hours from the				
City of Pembroke Pines, the vendor must have a dedicated Fire Apparatus repair facility (not an RV				

City of Pembroke Pines, the vendor must have a dedicated Fire Apparatus repair facility (not an RV repair shop) within a 150 mile radius of the municipal boundaries of Pembroke Pines and must provide mobile/road service. Vendor is required to provide full disclosure on their capabilities for providing road/mobile service, response time to regular calls, response time to emergency service calls, the number of service technicians on staff than are SAE or EVT certified, how many vehicles dedicated to road/mobile service, and approach to handling major repairs such as transmissions, front axels, rear axels, radiators, etc. This information can be provided in a separate document that must be uploaded to www.bidsync.com as part of the proposal package.

Timeline	
NUMBER OF CALENDAR DAYS TO COMPLETE AND FURNISH	
THE FIRE ENGINE / PUMPER TRUCK	280 Days

Please note: If you have any exceptions to the specifications listed in the solicitation, you must attach a detailed explanation, of each exception, to this proposal form.

Supplier: Hall-Mark RTC



Attachment C

NON-COLLUSIVE AFFIDAVIT

BIDDER is the **Officer**,

(Owner, Partner, Officer, Representative or Agent)

BIDDER is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

Such Bid is genuine and is not a collusive or sham Bid;

- Neither the said BIDDER nor any of its officers, partners, owners, agents, representative, employees or parties in interest, including this affidavit, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other BIDDER, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted; or to refrain from bidding in connection with such Contract; or have in any manner, directly or indirectly, sought by agreement or collusion, or communications, or conference with any BIDDER, firm, or person to fix the price or prices in the attached Bid or any other BIDDER, or to fix any overhead, profit, or cost element of the Bid Price or the Bid Price of any other BIDDER, or to secure through any collusion conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Contract;
- The price of items quoted in the attached Bid are fair and proper and are not tainted by collusion, conspiracy, connivance, or unlawful agreement on the part of the BIDDER or any other of its agents, representatives, owners, employees or parties in interest, including this affidavit.

Printed Name/Signature William D. Alm

Title VP / GM

Name of Company REV RTC /Hall-Mark RTC

Supplier: Hall-Mark RTC



Attachment D

SWORN STATEMENT ON PUBLIC ENTITY CRIMES UNDER FLORIDA STATUTES CHAPTER 287.133(3)(a).

- 1. This sworn statement is submitted **REV RTC d/b/a Hall-Mark RTC** (name of entity submitting sworn statement) whose business address is **725 SW 46th Ave, Ocala, FL 34474** and (if applicable) its Federal Employer Identification Number (FEIN) is **47-4454880**. (If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement: .)
- 2. My name is **William D. Alm** and my (Please print name of individual signing)

relationship to the entity named above is **VP / GM**.

- 3. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), <u>Florida Statutes</u>, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid, proposal, reply, or contract for goods or services, any lease for real property, or any contract for the construction or repair of a public building or public work, involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.
- 4. I understand that a "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), <u>Florida</u> <u>Statutes</u>, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.
- 5. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), <u>Florida Statutes</u>, means:
 - 1. A predecessor or successor of a person convicted of a public entity crime: or
 - 2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The Cityship by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.
- 6. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means any

FI-16-01

natural person or any entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts let by a public entity, or which otherwise transacts or applies to transact business with a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

7. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies.)

☑ A) Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.

□ B) The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989, <u>AND</u> (Please indicate which additional statement applies.)

 \square B1) There has been a proceeding concerning the conviction before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. (**Please attach a copy of the final order.**)

 \square B2) The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order.)

B3) The person or affiliate has not been placed on the convicted vendor list. (Please describe any action taken by or pending with the Department of General Services.)

William D. Alm	REV RTC d/b/a Hall-Mark	2-2-17
	RTC	
Bidder's Name/Signature	Company	Date

Supplier: Hall-Mark RTC



Attachment E

LOCAL VENDOR PREFERENCE CERTIFICATION

SECTION 1 GENERAL TERM

LOCAL PREFERENCE

The evaluation of competitive bids is subject to section 35.36 of the City's Procurement Procedures which, except where contrary to federal and state law, or any other funding source requirements, provides that preference be given to local businesses. To satisfy this requirement, the vendor shall affirm in writing its compliance with either of the following objective criteria as of the bid or proposal submission date stated in the solicitation. A local business shall be defined as:

 "Local Pembroke Pines Vendor" shall mean a business entity which has maintained a permanent place of business with full-time employees within the City limits for a minimum of one (1) year prior to the date of issuance of a bid or proposal solicitation. The permanent place of business may not be a post office box. The business location must actually distribute goods or services from that location. In addition, the business must have a current business tax receipt from the City of Pembroke Pines.

OR;

2. "Local Broward County Vendor" shall mean or business entity which has maintained a permanent place of business with full-time employees within the Broward County limits for a minimum of one (1) year prior to the date of issuance of a bid or proposal solicitation. The permanent place of business may not be a post office box. The business location must actually distribute goods or services from that location. In addition, the business must have a current business tax receipt from the Broward County or the city within Broward County where the business resides.

A preference of five percent (5%) of the total evaluation point, or five percent (5%) of the total price, shall be given to the **Local Pembroke Pines Vendor(s)**; A preference of two and a half percent (2.5%) of the total evaluation point for local, or two and a half percent (2.5%) of the total price, shall be given to the **Local Broward County Vendor(s)**.

COMPARISON OF QUALIFICATIONS

The preferences established in no way prohibit the right of the City to compare quality of supplies or services for purchase and to compare qualifications, character, responsibility and fitness of all persons, firms or corporations submitting bids or proposals. Further, the preference established in no way prohibit the right of the city from giving any other preference permitted by law instead of the preferences granted, nor prohibit the city to select the bid or proposal which is the most responsible and in the best interests of the city.

SECTION 2 AFFIRMATION

LOCAL PREFERENCE CERTIFICATION:

Place a check mark here only if affirming bidder meets requirements above as a Local Pembroke Pines Vendor. In addition, the business must attach a current business tax receipt from the City of Pembroke Pines along with any previous business tax receipts to indicate that the business entity has maintained a permanent place of business for a minimum of one (1) year.

Place a check mark here only if affirming bidder meets requirements above as a Local Broward County Vendor. In addition, the business must attach a current business tax receipt from the Broward County or the city within Broward County where the business resides along with any previous business tax receipts to indicate that the business entity has maintained a permanent place of business for a minimum of one (1) year.

Place a check mark here only if affirming bidder does not meet the requirements above as a Local Vendor.

Failure to complete this certification at this time (by checking either of the boxes above) shall render the vendor ineligible for Local Preference. This form must be completed by/for the proposer; the proposer <u>WILL NOT</u> qualify for Local Vendor Preference based on their sub-contractors' qualifications.

COMPANY NAME: REV RTC DBA HALL-MARK RTC

PRINTED NAME / AUTHORIZED SIGNATURE: DEE DANIELS

Supplier: Hall-Mark RTC



Attachment F

VETERAN OWNED SMALL BUSINESS (VOSB) PREFERENCE CERTIFICATION

SECTION 1 GENERAL TERM

VETERAN OWNED SMALL BUSINESS (VOSB) PREFEREENCE

The evaluation of competitive bids is subject to section 35.37 of the City's Procurement Procedures which, except where contrary to federal and state law, or any other funding source requirements, provides that preference be given to veteran owned small businesses. To satisfy this requirement, the vendor shall affirm in writing its compliance with the following objective criteria as of the bid or proposal submission date stated in the solicitation. A veteran owned small business shall be defined as:

1. "Veteran Owned Small Business" shall mean a business entity which has received a "Determination Letter" from the United States Department of Veteran Affairs Center for Verification and Evaluation notifying the business that they have been approved as a Veteran Owned Small Business (VOSB).

A preference of two and a half percent (2.5%) of the total evaluation point, or two and a half percent (2.5%) of the total price, shall be given to the **Veteran Owned Small Business (VOSB)**. This shall mean that if a **VOSB** submits a bid/quote that is within 2.5% of the lowest price submitted by any vendor, the **VOSB** shall have an option to submit another bid which is at least 1% lower than the lowest responsive bid/quote. If the **VOSB** submits a bid which is at least 1% lower than that lowest responsive bid/quote. If the **VOSB** submits a bid which is at least 1% lower than that lowest responsive bid/quote. If the lowest responsive bid/quote. If the lowest responsive and responsible bidder IS a **"Local Pembroke Pines Vendor" (LPPV)** or a **"Local Broward County Vendor" (LBCV)** as established in Section 35.36 of the City's Code of Ordinances, entitled "Local Vendor Preference", then the award will be made to that vendor and no other bidders will be given an opportunity to submit additional bids as described herein.

If there is a LPPV, a LBCV, and a VOSB participating in the same bid solicitation and all three vendors qualify to submit a second bid, the LPPV will be given first option. If the LPPV cannot beat the lowest bid received by at least 1%, an opportunity will be given to the LBCV. If the LBCV cannot beat the lowest bid by at least 1%, an opportunity will be given to the VOSB. If the VOSB cannot beat the lowest bid by at least 1%, then the bid will be awarded to the lowest bidder.

If multiple VOSBs submit bids/quotes which are within 2.5% of the lowest bid/quote and there are no LPPV or LBCV as described in Section 35.36 of the City's Code of Ordinance, entitled "Local Vendor Preference", then all VOSBs will be asked to submit a **Best and Final Offer (BAFO)**. The award will be made to the VOSB submitting the lowest **BAFO** providing that that **BAFO** is at least 1% lower than the lowest bid/quote received in the original solicitation. If no **VOSB** can beat the lowest bid/quote by at least 1%, then the award will be made to the lowest responsive bidder.

COMPARISON OF QUALIFICATIONS

The preferences established in no way prohibit the right of the City to compare quality of supplies or services for purchase and to compare qualifications, character, responsibility and fitness of all persons, firms or corporations submitting bids or proposals. Further, the preference established in no way prohibit the right of the city from giving any other preference permitted by law instead of the preferences granted, nor prohibit the city to select the bid or proposal which is the most responsible and in the best interests of the city.

SECTION 2 AFFIRMATION

VETERAN OWNED SMALL BUSINESS (VOSB) PREFEREENCE CERTIFICATION:

Place a check mark here only if affirming bidder meets requirements above as a Veteran Owned Small Business. In addition, the bidder must attach the "Determination Letter" from the U.S. Dept. of Veteran Affairs Center.

Place a check mark here only if affirming bidder does not meet the requirements above as a VOSB.

Failure to complete this certification at this time (by checking either of the boxes above) shall render the vendor ineligible for VOSB Preference. This form must be completed by/for the proposer; the proposer <u>WILL NOT</u> qualify for VOSB Preference based on their sub-contractors' qualifications.

COMPANY NAME: REV RTC d/b/a Hall-Mark RTC

PRINTED NAME / AUTHORIZED SIGNATURE: Dee Daniels
Supplier: Hall-Mark RTC



Attachment G

EQUAL BENEFITS CERTIFICATION FORM FOR DOMESTIC PARTNERS AND ALL MARRIED COUPLES

Except where federal or state law mandates to the contrary, a Contractor awarded a Contract pursuant to a competitive solicitation shall provide benefits to Domestic Partners and spouses of its employees, irrespective of gender, on the same basis as it provides benefits to employees' spouses in traditional marriages.

The Contractor shall provide the City and/or the City Manager or his/her designee, access to its records for the purpose of audits and/or investigations to ascertain compliance with the provisions of this section, and upon request shall provide evidence that the Contractor is in compliance with the provisions of this section upon each new bid, contract renewal, or when the City Manager has received a complaint or has reason to believe the Contractor may not be in compliance with the provisions of this section. Records shall include but not be limited to providing the City and/or the City Manager or his/her designee with certified copies of the Contractor's records pertaining to its benefits policies and its employment policies and practices.

The Contractor must conspicuously make available to all employees and applicants for employment the following statement:

"During the performance of a contract with the City of Pembroke Pines, Florida, the Contractor will provide Equal Benefits to its employees with spouses, as defined by Section 35.39 of the City's Code of Ordinances, and its employees with Domestic Partners and all Married Couples".

The posted statement must also include a City contact telephone number and email address which will be provided to each contractor when a covered contract is executed.

SECTION 1 DEFINITIONS

- 1. Benefits means the following plan, program or policy provided or offered by a contractor to its employees as part of the employer's total compensation package which may include but is not limited to sick leave, bereavement leave, family medical leave, and health benefits.
- 2. Cash Equivalent mean the amount of money paid to an employee with a domestic partner or spouse in lieu of providing benefits to the employee's domestic partner or spouse. The cash equivalent is equal to the employer's direct expense of providing benefits to an employee for his or her spouse from a traditional marriage.
- 3. Covered Contract means a contract between the City and a contractor awarded subsequent to the date when this section becomes effective valued at over \$25,000 or the threshold amount required for competitive bids as required in section 35.18(A) of the Procurement Code.
- 4. Domestic Partner shall mean any two (2) adults of the same or different sex who have registered as domestic partners with a governmental body pursuant to state or local law authorizing such registration, or with an internal registry maintained by the employer of at least one of the domestic partners. A contractor may institute an internal registry to allow for the provision of equal benefits to employees with domestic partners who do not register their partnerships pursuant to a governmental body authorizing such registration, or who are

located in a jurisdiction where no such governmental domestic partnership registry exists. A contractor that institutes such registry shall not impose criteria for registration that are more stringent than those required for domestic partnership registration by the City of Pembroke Pines.

- 5. Equal benefits means the equality of benefits between employees with spouses and/or dependents of spouses and employees with domestic partners and/or dependents of domestic partners, and/or between spouses of employees and/or dependents of spouses and domestic partners of employees and/or dependents of domestic partners.
- 6. **Spouse** means one member of a married pair legally married under the laws of any state within the United States of America or any other jurisdiction under which such marriage is legally recognized, irrespective of gender.
- 7. Traditional marriage means a marriage between one man and one woman.

SECTION 2 CERTIFICATION OF CONTRACTOR

The firm providing a response, by virtue of the signature below, certifies that it is aware of the requirements of Section 35.39 "City Contractors providing Equal Benefits for Domestic Partners and all Married Couples" of the City's Code of Ordinances, and certifies the following (**Check only one box below**):

A. Contractor currently complies with the requirements of this section; or

B. Contractor will comply with the conditions of this section at the time of contract award; or

- **C.** Contractor will not comply with the conditions of this section at the time of contract award: or
- D. Contractor does not comply with the conditions of this section because of the following allowable exemption (Check only one box below):

☐ 1. The Contractor does not provide benefits to employees' spouses in traditional marriages;

□ 2. The Contractor provides an employee the cash equivalent of benefits because the Contractor is unable to provide benefits to employees' Domestic Partners or spouses despite making reasonable efforts to provide them. To meet this exception, the Contractor shall provide a notarized affidavit that it has made reasonable efforts to provide such benefits. The affidavit shall state the efforts taken to provide such benefits and the amount of the cash equivalent. Cash equivalent means the amount of money paid to an employee with a Domestic Partner or spouse rather than providing benefits to the employee's Domestic Partner or spouse. The cash equivalent is equal to the employer's direct expense of providing benefits to an employee's spouse;

□ 3. The Contractor is a religious organization, association, society, or any non-profit charitable or educational institution or organization operated supervised or controlled by or in conjunction with a religious organization, association, or society;

4. The Contractor is a governmental agency;

The certification shall be signed by an authorized officer of the Contractor. Failure to provide such certification (by checking the appropriate boxes above along with completing the information below) shall result in a Contractor being deemed non-responsive.

COMPANY NAME: REV RTC d/b/a Hall-Mark RTC

Supplier: Hall-Mark RTC



City of Pembroke Pines

PROPOSER'S QUALIFICATIONS STATEMENT

PROPOSER shall furnish the following information. Failure to comply with this requirement will render Bid non-responsive and shall cause its rejection. Additional sheets shall be attached as required.

PROPOSER'S Name and Principal Address:

REV RTC d/b/a Hall-Mark RTC 725 SW 46th Ave Ocala, FL 34474

Contact Person's Name and Title: Jorge Troyano - Sales Rep

Contact Person's E-mail Address: jtroyano@hall-markfire.com

PROPOSER'S Telephone and Fax Number: (352) 629-6305 (352) 629-2018

PROPOSER'S License Number: VI/1101217/1 (Please attach certificate of status, competency, and/or state registration.)

PROPOSER'S Federal Identification Number: 47-4454880

Number of years your organization has been in business 24

State the number of years your firm has been in business under your present business name 1 year 3 months

State the number of years your firm has been in business in the work specific to this solicitation: 24

Names and titles of all officers, partners or individuals doing business under trade name: **Title VP**

BAMATTER, PAUL 330 Madison Ave, Flr 28 New York, NY 10017

Title PCEO

SULLIVAN, TIM 4776 NEW BROAD STREET #200 ORLANDO, FL 32814

Title Secretary

Attachment H

Krop, Pamela S 4776 NEW BROAD STREET #200 ORLANDO, FL 32814

Title CFO

Nolden, Dean J 4776 NEW BROAD STREET #200 ORLANDO, FL 32814

The business is a: Sole Proprietorship \square Partnership \square Corporation \square

IF USING A FICTITIOUS NAME, SUBMIT EVIDENCE OF COMPLIANCE WITH FLORIDA FICTITIOUS NAME STATUTE. (ATTACH IN PROPOSER EXHIBIT SECTION)

Under what former name has your business operated? Include a description of the business. Failure to include such information shall be deemed to be intentional misrepresentation by the City and shall render the proposer RFP submittals non-responsive.

Hall-Mark Fire Apparatus, Inc.

At what address was that business located? 3431 NW 27th Ave Ocala, FL 34474

Name, address, and telephone number of surety company and agent who will provide the required bonds on this contract: Lockton Three CityPLace Drive, Suite 900 St. Louis, MO 63146

Have you ever failed to complete work awarded to you. If so, when, where and why? **No**

Have you personally inspected the proposed WORK and do you have a complete plan for its performance? **Yes**

Will you subcontract any part of this WORK? If so, give details including a list of each sub-contractor(s) that will perform work in excess of ten percent (10%) of the contract amount and the work that will be performed by each subcontractor (s).

No

The foregoing list of subcontractor(s) may not be amended after award of the contract without the prior written approval of the Contract Administrator, whose approval shall not be reasonably withheld.

List and describe all bankruptcy petitions (voluntary or involuntary) which have been filed by or against the Proposer, its parent or subsidiaries or predecessor organizations during the past five (5) years. Include in the description the disposition of each such petition.

None

List and describe all successful Bond claims made to your surety (ies) during the last five (5) years. The list and descriptions should include claims against the bond of the Proposer and its predecessor organization(s). **None**

List all claims, arbitrations, administrative hearings and lawsuits brought by or against the Proposer or its predecessor organizations(s) during the last (10) years. The list shall include all case names; case, arbitration or hearing identification numbers; the name of the project over which the dispute arose; and a description of the subject matter of the dispute. **None**

List and describe all criminal proceedings or hearings concerning business related offenses in which the Proposer, its principals or officers or predecessor organization(s) were defendants. **None**

Has the Proposer, its principals, officers or predecessor organization(s) been CONVICTED OF A Public Entity Crime, debarred or suspended from bidding by any government entity? If so, provide details. **No**

Are you an \square Original provider \square sales representative \square distributor, \square broker, \square manufacturer \square other, of the commodities/services proposed upon? If other than the original provider, explain below. We are the dealer for all E-ONE product in the state of Florida

Have you ever been debarred or suspended from doing business with any governmental agency? If yes, please explain: **No**

Describe the firm's local experience/nature of service with contracts of similar size and complexity, it the previous three (3) years:

We have been in Ocala, FL since 1993 providing sales and service of Emergency Vehicles to cities and counties in the state of Florida.

The PROPOSER acknowledges and understands that the information contained in response to this Qualification Statement shall be relied upon by CITY in awarding the contract and such information is warranted by PROPOSER to be true. The discovery of any omission or misstatement that materially affects the PROPOSER'S qualifications to perform under the contract shall cause the CITY to reject the Bid, and if after the award, to cancel and terminate the award and/or contract.

REV RTC d/b/a Hall-Mark RTC

(Company Name) William D. Alm (Printed Name/Signature)

Supplier: Hall-Mark RTC

REFERENCES FORM

Provide specific examples of similar contracts. References should be should be capable of explaining and confirming your firm's capacity to successfully complete the scope of work outlined herein. <u>This form</u> should be duplicated for each reference and any additional information that would be helpful can be attached.

Reference Contact Information:

Name of Firm, City, County or Agency: TOWN OF DAVIE

Address: 6901 ORANGE DR. 33314

City/State/Zip: DAVIE, FL

Contact Name: FRANK SURIANO Title: ASST. CHIEF

E-Mail Address: FRANK.SURIANO@DAVIE-FL.GOV

Telephone: 954 797 1085 Fax: 954 797 1213

Project Information:

Name and location of the project: **RESCUE PUMPER/OCALA,FL**

Nature of the firm's responsibility on the project: BUILDING OF TRUCK

Project duration: ON GOING Completion (Anticipated) Date: VARIES

Size of project: **PUMPERS**Cost of project: **450000**

Work for which staff was responsible: **PUMPER DEVELOPMENT**

Contract Type: FSA

The results/deliverables of the project: **PUMPERS**

Provide specific examples of similar contracts. References should be should be capable of explaining and confirming your firm's capacity to successfully complete the scope of work outlined herein. This form should be duplicated for each reference and any additional information that would be helpful can be attached.

Reference Contact Information:

Name of Firm, City, County or Agency: SUNRISE FIRE RESCUE

Address: 10440 W OAKLAND PARK BLVD

City/State/Zip: SUNRISE,FL

Contact Name: THOMAS DIBERNARDO Title: FIRE CHIEF

E-Mail Address: tdibernardo@sunrisefl.com

Telephone: 954-746 3120 Fax: 954 797 3455

Project Information:

Name and location of the project: **RESCUE PUMPER/OCALA,FL**

Nature of the firm's responsibility on the project: BUILDING OF TRUCK

Project duration: ON GOING Completion (Anticipated) Date: VARIES

Size of project: RESCUE PUMPERCost of project: 525000

Work for which staff was responsible: **PUMPER DEVELOPMENT**

Contract Type: FSA

The results/deliverables of the project: **ON GOING**

Provide specific examples of similar contracts. References should be should be capable of explaining and confirming your firm's capacity to successfully complete the scope of work outlined herein. This form should be duplicated for each reference and any additional information that would be helpful can be attached.

Reference Contact Information:

Name of Firm, City, County or Agency: MIRAMAR FIRE RESCUE

Address: 14801 SW 27TH ST

City/State/Zip: MIRAMAR,FL

Contact Name: PALMER Title: FIRE CHIEF

E-Mail Address: MIRAMARFIRE@MIRAMARFD.ORG

Telephone: 954 602 4802 Fax: 954 602 4802

Project Information:

Name and location of the project: **RESCUE PUMPER**

Nature of the firm's responsibility on the project: BUILDING OF TRUCK

Project duration: 6 MONTHSCompletion (Anticipated) Date: FEB 20

Size of project: RESCUE PUMPERCost of project: 490000

Work for which staff was responsible: **PUMPER DEVELOPMENT**

Contract Type: FSA

The results/deliverables of the project: **FEB 20**

Provide specific examples of similar contracts. References should be should be capable of explaining and confirming your firm's capacity to successfully complete the scope of work outlined herein. <u>This form</u> should be duplicated for each reference and any additional information that would be helpful can be attached.

Reference Contact Information:

Name of Firm, City, County or Agency: MARTIN COUNTY FIRE RESCUE

Address: 4725 SE DIXIE HWY

City/State/Zip: STUART,FL 34997

Contact Name: ED STAGMILLER Title: FLEET DIRECTOR

E-Mail Address: estagmil@martin.fl.us

Telephone: 772 221 2342 Fax: 772 288 5400

Project Information:

Name and location of the project: rescue pumpers /ocala,fl

Nature of the firm's responsibility on the project: BUILDING OF TRUCK

Project duration: 8 MTHS Completion (Anticipated) Date: 7/16

Size of project: **RESCUE PUMPER**Cost of project: **534000**

Work for which staff was responsible: **PUMPER DEVELOPMENT**

Contract Type: FSA

The results/deliverables of the project: 7/16

Provide specific examples of similar contracts. References should be should be capable of explaining and confirming your firm's capacity to successfully complete the scope of work outlined herein. This form should be duplicated for each reference and any additional information that would be helpful can be attached.

Reference Contact Information:

Name of Firm, City, County or Agency: CITY OF HIALEAH

Address: 83 E 5TH ST

City/State/Zip: HIALEAH,FL 33010

Contact Name: FREDDY PEREZ Title: DIVISION CHIEF

E-Mail Address: hlperez@hialeahfl.gov

Telephone: 786 525 3562 Fax: 305 883 5800

Project Information:

Name and location of the project: **RESCUE PUMPER/OCALA, FL**

Nature of the firm's responsibility on the project: BUILDING OF TRUCK

Project duration: 7 MTHSCompletion (Anticipated) Date: 12/16

Size of project: PUMPERCost of project: 454000

Work for which staff was responsible: **PUMPER DEVELOPMENT**

Contract Type: FSA

The results/deliverables of the project: 12/16