

Toyne Inc.

CORPORATE OWNERSHIP OF MANUFACTURER

The manufacturer of the apparatus must be fully owned and managed by a Parent Company, Corporation, or Individual(s) that is 100% held by United States of America based Company, Corporation, or United States citizen(s).

Proposals from any manufacturer that is fully or partially owned and/or operated by a foreign company, Corporation or Individual(s) under any type of ownership, partnership, or any similar type of agreement will be immediately rejected.

CORPORATE CONTACT INFORMATION

The purchaser shall be provided with the following information to allow them to contact the President/CEO of the manufacturing company (not dealer) when deemed necessary:

- Name of Company President.
- Office address.
- Office telephone number.
- Email address.
- Home address.
- Home telephone number.
- 24/7 Cellular telephone number.

If the manufacturing company is a subsidiary of, division of, or owned by a different Company, the above information shall also be provided on the 'Parent' Company.

There will be no exception to this requirement.

FIRST CLASS # 1 QUALITY FIRE APPARATUS

If the manufacturer or bidder for the apparatus manufacturer represents two or more different lines of apparatus and/or operates two or more manufacturing plants, it should be clearly stated in the bid proposal.

In addition to this requirement, the bidder shall give a detailed explanation of why the particular line, brand, model or manufacturing facility will be used.

Manufacturer's or bidder's with multiple lines (two or more) or multiple manufacturing facilities (two or more) shall be required to submit bid proposals on only the first class, #1 quality brand/model or from the first class # 1 quality manufacturing facility.

It is the intention of the purchaser to purchase a top of the line, first class, #1 quality fire apparatus. Any bidder that submits a bid on a "lower end" line, brand, model or from a "lower end" manufacturing facility will be immediately rejected.

The purchaser is not interested in purchasing a manufacturer's or bidders "lower end" apparatus. Because of this, any bids submitted that do not comply with the above requirements will be immediately rejected.

CERTIFICATION OF NFPA 1901-2016 COMPLIANCE

As per NFPA 1901, the Purchaser shall assume the responsibility of determining, prior to the purchase of the

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apparatus, who will be responsible for ensuring that all aspects of NFPA 1901 are met. The manufacturer shall be responsible for providing or performing only the items requested by the purchaser in the documents provided to the manufacturer by the purchaser.

Written certification shall be provided by the manufacturer stating that the delivered apparatus complies with the NFPA 1901 Standard. If the purchaser has elected to provide, perform, outsource and/or contract with a third party or waive any item required by NFPA 1901, the manufacturer shall provide, upon delivery, a "Statement of Exceptions" per Chapter 4 of NFPA 1901 4.21.

This "Statement of Exceptions" shall include:

- A separate specification of the section of the NFPA Standard for which the apparatus is lacking compliance.
- A description of the particular aspect of the apparatus that is not compliant therewith or required equipment that is missing.
- A description of the further changes or modifications to the delivered apparatus which must be completed to achieve full compliance.
- An identification of the entity who will be responsible for making the necessary post-delivery changes or modifications or for supplying and installing any missing required equipment to the apparatus to achieve full compliance to the standard.

Prior to, or at the time of, delivery of the apparatus, the Statement of Exceptions shall be signed by an authorized agent of the entity responsible for the final assembly of the apparatus and by an authorized agent of the purchasing entity, indicating a mutual understanding and agreement between the parties regarding the substance thereof.

The purchaser shall not place the apparatus into active emergency service until fully compliant with NFPA 1901.

NFPA REQUIRED EQUIPMENT

The end user of this apparatus shall provide all other equipment and accessories that are required by NFPA 1901 but not specifically listed in these specifications.

MAXIMUM TOP SPEED

The maximum top speed of this apparatus shall be determined using the following NFPA 1901 Chapter 4 criteria:

- Apparatus with 1250 gallon combined water tank capacity shall not exceed 60 MPH.
- Apparatus with GVWR of over 50,000 lbs. shall not exceed 60 MPH.
- Apparatus weighing over 26,000 lbs. shall not exceed 68 MPH.

WATEROUS PB3030LE AUXILIARY PUMP

A Waterous model 3030LE auxiliary pump shall be provided and permanently mounted on the apparatus.

AUXILIARY PUMP MOUNTING

The auxiliary pump shall be permanently mounted in the driver's side forward compartment.

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AUXILIARY PUMP ENGINE

The pump shall be powered by a Kubota 24.8 BHP diesel engine.

The engine shall have a 12 volt electric start system. The electrical system shall be connected to the chassis battery system using a minimum of a 4 gauge insulated copper cable.

The auxiliary fire pump and engine assembly shall have a muffler and exhaust pipe. The exhaust pipe shall be directed out of the compartment and away from the pump operator. Additional guards shall be installed where the pipe is exposed to touch by an operator. The auxiliary pump exhaust shall be routed under the body.

AUXILIARY PUMP ENGINE FUEL SUPPLY

The fuel system for the auxiliary fire pump shall be plumbed to the chassis fuel system.

There shall be an electric fuel pump and fuel hose furnished between the chassis fuel tank and the auxiliary pump.

AUXILIARY PUMP TANK CONNECTION

The auxiliary fire pump shall be connected to the booster tank with a 2 1/2" tank to pump line with a full flow quarter turn ball valve, 2-1/2" piping, flex hose and stainless steel hose clamps. The valve control shall be accessible from the pump operation area and equipped with a nameplate on the handle.

PORTABLE PUMP PRIMER

Depending on pump capabilities, either an exhaust venturi type primer or hand primer shall be provided on the portable pump to allow priming of the pump.

AUXILIARY PUMP CONTROL PANEL

A control panel shall be provided for the auxiliary pump on a pump panel inside the pump compartment.

The following controls/items shall be located on the panel:

- Throttle control lever
- Priming control lever
- Master on/off pump ignition switch
- Low oil pressure warning light

IN CAB PRESSURE GAUGE

A pressure gauge shall be provided in the cab for use in pump and roll operations. The gauge 2 3/4" diameter and shall be glycerin filled (-40F to +150F), read from 0 - 400 psi, be accurate within +/- 1% and have a high impact

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resistant clear acrylic lens. The gauge dial shall be white with black markings. The needle shall match the color of the markings.

IN CAB AUXILIARY ENGINE RUN LIGHT

An indicator light shall be provided in the cab to indicate when the auxiliary pump engine light is running. The light shall be labeled " Pump Engine Running".

AUXILIARY PUMP MASTER DRAIN

A brass drain valve shall be provided to allow draining of the auxiliary pump and associated piping on the pump side of all valves.

2" TANK REFILL/RECIRCULATION DISCHARGE

A 2" tank refill and pump recirculation line shall be provided from the discharge side of the pump into the tank. The discharge shall be attached to the tank using flexible hose.

2 1/2" FNST SWIVEL STEAMER INTAKE

A 2 1/2" FNST swivel steamer intake (no valve) shall be provided and located in the pump compartment. The connection fitting shall be chrome plated with chrome plated plug with chain and integral screen.

INLET AND DISCHARGE VALVES

All auxiliary intake and discharge valves shall be brass with stainless steel ball. Each valve shall be properly labeled.

STAINLESS STEEL PIPING

All piping on the apparatus shall be stainless steel. A discharge manifold constructed of stainless steel shall be provided. All pump discharges shall be connected to the manifold.

VENTED LUG CAPS AND PLUGS

All intake and discharge plugs and caps and plugs shall be vented lug type designed to relieve trapped pressure and help reduce possible operator injuries.

HANNAY ELECTRIC REWIND BOOSTER REEL

A Hannay 12 volt electric rewind 1" booster reel shall be provided and mounted on the rear of the apparatus.

The booster tank upper right side corner on the rear shall be "notched" to allow reel mounting in this area under the hosebed. The reel shall be accessible through a hinged down aluminum treadbrite door.

A Hannay model 9939.0042-38 stainless steel 3 way roller and spool assembly shall be provided.

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The 'rewind' switch shall be located just below the roller assembly. The switch shall be a push button momentary switch and shall be properly labeled. A manual vertical rewind crank shall be provided in case of power failure. The removable crank handle shall be mounted inside the pump compartment.

REEL FINISH - SILVER-GRAY

The reel(s) shall be finish painted silver-gray on the entire surface of the reel, discs and mounting assembly.

100' 1" BOOSTER HOSE 800 PSI

A single 100 foot length of 1" booster hose shall be provided for the reel. The hose shall have a 800 psi rating and shall be coupled with chrome plated bar-way couplings.

FIRE DEPARTMENT PROVIDED BOOSTER REEL NOZZLE

The Fire Department shall provide the nozzle for the booster reel.

1 1/2" DRIVER'S SIDE CATWALK DISCHARGE WITH HOSEBED

A 1 1/2" discharge shall be provided on the driver's side catwalk above the low compartments. The control for the discharge shall be located within the pump compartment.

A hosebed compartment constructed of aluminum treadbrite shall be provided on the catwalk to hold 200' of 1 3/4" fire hose. The floor of the hosebed shall be gray Turtle Tile. The hose bed compartment shall be covered with webbing.

2 1/2" PUMP COMPARTMENT DISCHARGE

One 2 1/2" discharge shall be provided in the pump compartment. The control for the discharge shall be located within the pump compartment.

The 2" valve shall be an all brass valve with stainless steel ball.

INNOVATIVE CONTROLS SL PLUS TANK GAUGE

An Innovative Controls model SL Plus tank gauge shall be provided on or near the pump panel. The gauge shall feature a 180 degree highly visible wide view ultra-brite LED display showing the level of the booster tank.

Poly Booster Tank - Generic spec TRANS

3,000 GALLON BOOSTER TANK

The tank shall have the capacity of 3,000 U.S. gallons and shall have a LIFETIME warranty provided by the manufacturer of the tank.

The tank shall be constructed of 1/2" thick polypropylene sheet stock. This material shall be non-corrosive stress relieved thermoplastic U.V. stabilized for maximum protection. The booster tank shall be of a specific configuration

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and is so designed to be completely independent of the body and compartments. All joints and seams shall be nitrogen welded and tested for maximum strength and integrity. The top of the booster tank is fitted with removable lifting eyes designed with a 3 to 1 safety factor to facilitate easy removal.

The transverse swash partitions shall be manufactured of 3/8" polypropylene material. The longitudinal swash partitions shall be constructed of 3/8" polypropylene and extend through the cover to allow for positive welding and maximum integrity. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be de-signed to provide maximum water flow. All swash partitions shall interlock with one another and are welded to each other as well as to the walls of the tank.

The tank cover shall be constructed of 1/2" thick polypropylene stress relieved, UV stabilized material and shall incorporate a three piece locking design which will allow for individual removal of each section of necessary. The tank cover shall be recessed 3/8" from the top of the tank and shall be welded to both sides and longitudinal partitions of maximum integrity. Each of the covers shall have hold downs consisting of 2" polypropylene dowels spaced a maximum of 30" apart. These dowels shall extend through the covers and will assist in keeping the covers rigid under fast filling conditions. A minimum of two lifting dowels shall be drilled and tapped to accommodate the lifting eyes.

The sump shall be constructed of 1/2" polypropylene. The sump shall have a 3" NPT threaded outlet on the bottom for a drain plug. An anti-swirl plate shall be located approximately 2 1/2" above the sump.

The tank cradle assembly shall be designed to provide support to the tank. The assembly shall be approved by the manufacturer of the tank.

BOOSTER TANK FILL TOWER - LEFT SIDE FRONT

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of 1/2" polypropylene and shall be a minimum of **12" x 24"** outer dimension. The tower shall be located in the left front corner of the hosebed. The tower shall have a 1/4" thick removable polypropylene screen and polypropylene hinged type cover.

NOTE: Fill tower shall be "anti-surge" type. NO EXCEPTIONS.

6" TANK OVERFLOW

A 6" diameter tank vent/overflow shall be provided and integrated into the tank. The piping shall be a minimum of schedule 40 polypropylene designed to run through the tank and discharge behind the rear wheels.

1" TANK SUMP DRAIN

A 1" drain shall be provided in the bottom of the tank sump to fully drain the tank. The drain shall use 1" stainless steel piping with a 1" valve. The control for the valve shall be remoted to the driver's side of the apparatus just under and behind the side rub rail. The drain control handle shall be labeled "TANK DRAIN".

3" TANK SUMP CLEAN OUT PLUG

A 3" tank sump clean out plug drain shall be provided in the bottom of the tank sump.

NEWTON 10" DUMP VALVE WITH SWIVELING TELESCOPIC CHUTE

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A Newton model 1050-34-44-14 10" stainless steel dump valve shall be provided on the rear of the apparatus.

The valve controls shall be located on top of the dump valve.

A Newton model 6012SW-34 stainless steel swivel adapter shall be provided to allow use to either side or the rear.

A Newton model 4036-34-8x12 stainless steel 36" telescoping extension chute shall be provided.

NOTE: The swivel portion and the extension must be nested while the unit is in motion.

MANUAL DUMP VALVE CONTROL

The Newton swivel dump shall be manually operated on the rear of the apparatus.

SWIVEL DUMP VALVE MOUNTING

The swivel dump valve shall be mounted to the rear surface of the tank. The tank mounting flange shall not be recessed into the rear face of the tank.

4" RIGHT REAR TANK FILL

One 4" rear tank fill shall be provided on the right rear of the apparatus. The fill shall be located to the right and above the top of the dump valve.

The fill valve shall be connected to the tank with 4" stainless steel pipe.

The fill shall incorporate a 4" butterfly valve with handcrank control.

The fill shall terminate in a 4" MNST connection.

A 4" FNST chrome cap shall be provided on the rear tank fill.

2 1/2" TANK TO PUMP

A 2 1/2" tank to pump line shall be provided between the tank and the pump. The tank valve shall be an Akron 8000 series with control mounted in the pump compartment.

HOT DIPPED GALVANIZED SUB FRAME

The tank cradle and body substructure shall be constructed of high strength structural steel. The entire substructure shall be framed and jig welded together to insure a truly square assembly. The substructure shall be fastened to the chassis rails so that it may be easily removed from the chassis for repair, replacement or mounting to a new chassis.

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After complete assembly of the tank cradle substructure, the entire assembly shall be hot dipped galvanized for superior corrosion protection.

Due to the extreme duty that this apparatus will experience during its intended service life and to prevent rusting and corrosion from shortening the service life of this apparatus, sub-frames fabricated of painted/undercoated steel or aluminum tubing shall not be acceptable.

20 YEAR SUB-STRUCTURE WARRANTY

The tank cradle and body sub-structure shall have a 20 warranty covering failure due to corrosion perforation or structural design error.

This warranty shall be in effect for 20 years after delivery of the apparatus to the customer. **NO EXCEPTION.**

HYPER-FLEX BODY MOUNTING

The body module assembly shall be mounted to the chassis frame rails with "*Hyper-Flex*" vibration and shock isolators using a forward mounting system. Flexible neoprene pads, or U-springs especially developed for the expected weight and torsional flexing of the apparatus body, shall be incorporated into the system to eliminate chassis framerail flex from transmitting harmful loads and twisting onto the body.

ALUMINUM APPARATUS BODY

The entire apparatus body shall be constructed of 5052-H32 smooth aluminum sheeting with a minimum tensile strength of 33,000 psi and a yield strength of 32,000 lbs, 6061-T6 extrusions with a minimum tensile strength of 45,000 psi and a yield strength of 40,000 lbs., and 3003-H22 aluminum treadbrite with a minimum tensile strength of 30,000 psi and a yield strength of 28,000 lbs. Any material that does not meet these minimum requirements shall not be used. All aluminum welding shall be Mig Spray Pulse Arc type to insure proper weld performance.

APPARATUS BODY CONSTRUCTION

The entire apparatus body shall be formed by shearing and bending the sheet metal. **Metal tubular structures or extrusions shall not be used in the construction of the apparatus body.** All edges of the sheared metal shall be sanded to remove any sharp shear edges prior to bending the metal. After shearing and bending, the body shall be assembled on a jig table that is designed to hold all apparatus body parts securely in place to insure an accurately built apparatus body. After the fabricated body parts are secured on the jig, the body shall be welded together using a wire welder to insure proper weld penetration.

The entire apparatus body shall be welded together using only unexposed welding methods. No welds shall be visible on the exterior of the apparatus body. All welds on the exterior of the body shall be ground flush and filled with automotive body filler. Metal or rubber trims shall not be used to hide welds or seams.

COMPARTMENT FLOORS

All compartment floors shall be constructed of 1/8" 5052-H32 alloy aluminum sheeting with a minimum ultimate tensile strength of 32,000 psi. The floors shall have a minimum 1" upward flange on the rear wall of the compartment to prevent any possible moisture accumulation in this area. A drain port shall be provided in each rear corner of the compartment to allow any water that may collect on the floor to drain out. The sides of the floor must be welded the full depth of the compartment to eliminate moisture accumulation. These welds must be placed on the bottom exterior

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of the compartment so that they are not visible on the interior of the compartment. The front edge of the compartment shall consist of a minimum of four bends to provide additional strength in the compartment floor and shall then form the lower door jamb.

All compartment floors shall be sweep out design. This shall include the lower side compartments, any upper compartments, and shall also include the rear face compartment. Any exception to this requirement will cause immediate rejection of bid.

COMPARTMENT REAR WALLS/BODY SIDES

The compartment rear walls and the apparatus body sides shall be constructed of 1/8" 5052-H32 alloy aluminum sheeting with a minimum tensile strength of 32,000 psi. All four outer corners, two front and two rear, shall be double bent to provide additional strength. The corners shall be one piece construction from top to bottom and from the inner body panel to the outer face of the compartment to provide maximum strength.

Corners using structural support channels or extrusions that require two or more pieces to be welded together shall not be implemented.

FRONT COMPARTMENT FACE OVERLAY

The vertical surface of the front compartment face shall be overlaid with fire apparatus quality aluminum treadbrite. The overlay shall be one piece construction from top to bottom. The aluminum treadbrite shall be an overlay only and shall not form any structural part of the apparatus. It shall be fitted on the apparatus body with all holes drilled prior to painting. **Aluminum treadbrite that is welded or bolted to the apparatus and masked off during the paint process is not acceptable.** The back side of the aluminum treadbrite shall be fully covered with a high temperature polyurethane based sealer to prevent dissimilar metal oxidation.

SIDE/REAR COMPARTMENT TOPS AND CEILINGS

The side and rear compartment tops and ceilings shall be constructed of 1/8" 5052-H32 alloy aluminum sheeting with a minimum tensile strength of 32,000 psi. The ceiling of the lower side compartments in the extended depth section shall also be constructed of this material.

COMPARTMENT TOP OVERLAY

The compartment tops shall be overlaid with fire apparatus quality aluminum treadbrite. The aluminum treadbrite shall be an overlay only and shall not form any structural part of the apparatus. It shall be fitted on the apparatus body with all holes drilled prior to painting. **Aluminum treadbrite that is welded or bolted to the apparatus and masked off during the paint process is not acceptable.** The back side of the aluminum treadbrite shall be fully covered with a high temperature polyurethane based sealer to prevent dissimilar metal oxidation.

FENDERWELLS

The left and right side rear fender wells shall be constructed of 3/16" aluminum sheeting with a minimum tensile strength of 32,000 psi. A 1" gap shall be provided on the bottom of each side of the circular liner to allow drainage of water and for easy cleanout. Sufficient clearance shall be provided for tire chains. Before the booster tank is installed, the fender wells shall be thoroughly cleaned, all seams sealed, and automotive undercoated to prevent corrosion in the fender well area.

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PAINTED FENDERWELLS

The fender wells shall be finish painted the primary exterior color of the apparatus.

Two prevent potential corrosion points, aluminum treadbrite or bolted on overlapping panels shall not be implemented in the construction of the apparatus body.

REMOVABLE INNER FENDER LINER

The fender wells shall be radius cut and shall have a circular inner liner to prevent rust pockets and for ease of cleaning. The inner liner shall be constructed of high impact polypropylene material and shall be fully removable for chassis suspension access.

REMOVABLE INNER FENDER LINER - NO EXCEPTION

To prevent the build up of potential corrosive materials in the fender well area, there shall be no exception to inner fender liner.

STAINLESS STEEL FENDERETTE

The fender wells shall be trimmed with a polished stainless steel fenderette. The stainless steel fenderette shall be secured into place with stainless steel fasteners and shall be easily removable for replacement. A black rubber fender welting shall be provided between the fenderette and the inner liner surface. The fenderettes shall protrude from the apparatus body a maximum of 1".

REPLACEABLE FENDERETTE

The stainless steel fenderette shall be secured to the apparatus body with stainless steel fasteners and shall be easily removable for replacement.

Fenderettes that are welded to the apparatus body are not acceptable.

COMPARTMENT VENTILATION

Each compartment shall have a removable metal ventilation plate to allow for air movement in the compartment. A cleanable filter material shall be provided behind the plate.

Plastic cover plates will not be acceptable.

ROM ROLL UP COMPARTMENT DOORS

For all compartments requiring roll up doors, Robinson (ROM) roll up doors shall be installed.

The doors shall be constructed of aluminum extrusion slats and shall be fitted with a flexible, watertight seal between the slats at pivoting joints. Each slat shall be individually removable for replacement if damaged. The end caps and rollers shall be manufactured of type 6 nylon. The doors shall have a pre-tension operator in a sealed alloy drum that shall be positioned in the upper portion of the compartment providing maximum clearance and head room in the upper

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portion of the compartment.

Each door shall have a full door width lift bar latching handle which shall be spring loaded with two surface mounted latch points, mounted one on each end. The door shall be reinforced and the latch point with a "ledge" surface above the lift bar designed to provide a "push" surface when closing.

A drip rail shall be provided above all doors.

STAINLESS STEEL COATED FASTENERS

All fasteners used in the finish construction of the apparatus body shall be marine grade stainless steel. Fasteners that pass through a dissimilar metal panel shall be Magna-Gard, or equal, coated to help prevent metal reaction and corrosion.

As the Magna-Gard, or equal, coating is a "baked on" type coating providing for excellent adhesion to the fastener, spray on type coatings may be used in conjunction with the Magna-Gard, or equal, but not in place of it.

Because dissimilar metal corrosion is a common occurrence on all apparatus and the Magna-Gard (or similar "baked on" coatings) fasteners are commercially available to all manufacturer's and is not a proprietary product, there shall be no exception to this requirement.

LEFT SIDE COMPARTMENT

A compartment shall be provided ahead of the rear wheels on the left side with double, vertically hinged doors. The compartment shall be 36" high x 51" wide with the lower 28" **usable depth**. The compartment shall have a roll up door. The door opening shall be 28" high x 49" wide.

RIGHT SIDE COMPARTMENT

A compartment shall be provided ahead of the rear wheels on the right side with double, vertically hinged doors. The compartment shall be 36" high x 51" wide with the lower 28" **usable depth**. The compartment shall have a roll up door. The door opening shall be 28" high x 49" wide.

REAR STEP MATERIAL - NFPA ALUMINUM TREADBRITE

The rear step shall be constructed of NFPA complaint bright finish aluminum treadbrite.

22" REAR TAILBOARD STEP

A 22" depth rear tailboard step shall be provided on the apparatus. The step shall be spaced from the rear face of the apparatus body a minimum of 3/4" for easy wash out.

RUBRAILS - BRIGHT ANODIZED ALUMINUM

Extruded aluminum rub rails shall be provided on the apparatus body sides. The rub rails shall have a bright finish with anodized coating to protect the finish. The rub rails shall be spaced from the apparatus body a minimum of 1/4" with poly spacers.

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The rub rails must be bolted on to the apparatus body to allow easy replacement if damaged. Rub rails that are permanently fastened to the apparatus body by welding or any other permanent method will not be acceptable. **NO EXCEPTION WILL BE ALLOWED TO THIS REQUIREMENT.**

RUB RAIL ENDS

The rub rail ends shall be 'capped' with a high impact resistant black EPDM contoured block.

FOLD DOWN PORTABLE TANK RACK - RIGHT SIDE

A manual swing down hinged portable tank rack shall be provided and mounted on the right side of the apparatus above the low side compartments. The rack shall have an aluminum treadbrite housing on both ends with a minimum of 1 1/4" brushed stainless steel tubing connecting the two ends. The rack shall have two latches to hold the rack in the raised or travel position. The latches shall be located one on each end of the rack. Large rubber pads shall be provided and mounted on the aluminum treadbrite housings to keep the rack from contacting any painted surface of the apparatus body when the rack is lowered. The rack shall hinge down on heavy duty stainless steel hinges.

SYNTEX 3000 PORTABLE TANK - ALUMINUM FRAME

There shall be one (1) Syntex Industries model 3000 folding tank with aluminum square tube frame and 22 ounce vinyl coated nylon 3,000 gallon liner provided. A large, 10" diameter, folding discharge tube shall be provided for quick emptying. When set up, the tank shall measure 13'3" x 13'3" x 30" high.

PORTABLE TANK LINER - RED

The portable tank liner shall be red.

PORTABLE TANK DRAIN ASSIST HANDLES

The portable tank shall be equipped with a set of three grab handles that will aid in the drainage of the tank liner. These shall be webbing type handles that are attached to the liner.

PORTABLE TANK SECOND DISCHARGE SPOUT

A second discharge spout shall be provided in the tank liner.

ACCESS LADDER

An access ladder shall be provided on the rear of the apparatus to access the upper area of the apparatus. A minimum of 8 inches of clearance shall be provided between the rung and the body or any obstruction.

ACCESS LADDER LEFT SIDE MOUNTING

The rear access ladder shall be mounted on the left (driver) side of the rear of the apparatus.

REAR VERTICAL HAND RAILS

Two NFPA compliant handrails shall be provided, one each side of the apparatus body on the rear for boarding the

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rear step.

INTERMEDIATE REAR HORIZONTAL HAND RAIL

An intermediate horizontal handrail shall be provided on the rear of the apparatus.

NFPA 1901 CERTIFIED 12 VOLT ELECTRICAL SYSTEM

The 12-volt apparatus body electrical system shall be provided and shall be in compliance with NFPA 1901 testing and certification procedures as follows:

NFPA MINIMUM ELECTRICAL LOAD DEFINITION

The NFPA 1901 defined minimum electrical load shall consist of the total amperage required to simultaneously operate the following in a stationary mode:

1. Propulsion engine and transmission.
2. The clearance and marker lights.
3. Communication equipment. 5 amp default.
4. Illumination of all walking surfaces, the ground at all egress points, control and instrumentation panels and 50% of total compartment lighting.
5. Minimum warning lights required for "blocking right of way" mode.
6. The current to simultaneously operate and fire pump and all specified electrical devices.
7. Anything defined by the purchaser, in the advertised specifications, to be critical to the mission of the apparatus.

RESERVE CAPACITY TEST

The first electrical test to be performed will be the **Reserve Capacity Test**. All items listed in NFPA Minimum Load Definition shall be activated with the engine shut off. After 10 minutes of operation, the items 1-7 shall be deactivated. After deactivation, the battery system shall have ample reserve to start the engine.

ALTERNATOR PERFORMANCE TEST AT IDLE

The second electrical test to be performed shall be **Alternator Performance Test at Full Load**. All electrical loads shall be activated with the engine running up to the governed rpm for two hours. During the test, the system voltage shall not drop below 11.7 volts or have excessive battery discharge for more than 120 seconds. Any loads not

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defined in the NFPA Minimum Electrical Load may be load managed to pass test.

TEST CONDITIONS

All electrical testing shall be performed with the engine compartment at approximately 200 degrees.

12-VOLT WIRING SYSTEM

All 12-volt electrical wiring shall be SXL cross link rated to carry 125% of the maximum current for which the circuit is protected. The wire shall be of sufficient size so that voltage drop in any electrical device shall not exceed 10%. All wiring shall be color, number, and function coded with the number and function being printed every three inches along the entire length of all apparatus body wires (as required by NFPA 1901). All wiring shall be routed through heavy-duty PVC split loom, securely attached and protected against heat, oil, and physical damage. All locations where the wire passes through a body panel shall be protected with electrical grommets

All connections shall be made using mechanical connectors and be screwed to terminal or junction box with machine screws. Wire nut, insulation displacement, or piercing connections shall not be used.

All circuits shall be provided with properly rated low voltage over current protective devices of the automatic reset type.

A removable bulkhead shall that extends from the floor to the ceiling of both side rear compartments shall be provided to protect rear wiring.

MASTER BATTERY DISCONNECT

A Cole Hersee master battery disconnect switch shall be provided and mounted within easy reach of the driver when entering the apparatus.

A green 'battery on' indicator light shall be provided in clear view of the driver. The light shall be mounted in a manner that will not impair the driver's vision.

REAR LICENSE PLATE LIGHT/BRACKET

A chrome plated LED license plate light shall be provided on the rear of the apparatus.

A license plate mounting bracket shall be provided that spaces the license plate away from the apparatus body.

CLEARANCE LIGHTS/REFLECTORS

All apparatus body clearance lights shall be LED style. All lower clearance lights and reflectors shall be mounted in a manner that provides protection from damage, and shall comply with FMVSS-108 regulations.

MID-MOUNTED SIDE TURN SIGNAL - LED

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An amber LED side turn signal shall be provided in the mid section area of the apparatus on both sides.

ENGINE COMPARTMENT LIGHT

A light shall be provided and mounted over the engine on the engine compartment wall. An on/off switch shall be provided on the light to activate it.

TRACK TYPE LED COMPARTMENT LIGHTING

Each apparatus body compartment shall have one track type LED light vertically mounted on the forward wall of each compartment. The lights shall be constructed of an unbreakable type clear poly type flexible material housed in an aluminum extrusion.

The lights shall function automatically and independently of other compartments when the compartment door is opened. **Compartment lighting systems that are controlled by a single, dash mounted switch are not acceptable.**

COMPARTMENT LIGHT SWITCHES

Each hinged apparatus body door compartment shall have a magnetic style reed indicator switch.

Each roll up door shall have an integral door open indicator magnet in the lift bar. If the bar is not properly closed, it shall activate the "Door Open" light in the cab.

The compartment lights shall function automatically when the door is opened. A master compartment light switch shall not be acceptable.

DOOR AJAR INDICATOR - LED

A 1" X 2" red LED flashing light shall be provided in the cab in clear view of the driver to warn of an open compartment or personnel door.

A label shall be provided adjacent to the light that states "Do Not Move Apparatus When Light Is On".

PERIMETER GROUND LIGHTING five (5)

There shall be five (5) Truck-Lite model 40 underbody perimeter lights furnished and installed. The lights shall be have an unbreakable polycarbonate lens and housing. The lights shall be sealed to help prevent moisture entry.

The ground lights shall be activated with the parking brake.

LED APPARATUS BODY STEP LIGHTING

All apparatus body and pump steps and runningboards shall be illuminated using chrome plated or stainless steel LED lights. The lights shall function automatically with the park brake.

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GROUND/STEP LIGHTING CUTOFF SWITCH

A ground/step light cut off switch shall be provided in the cab to allow the driver to disable the ground lights and other lights that activate when the parking brake is set. The switch shall automatically re-set itself when the parking brake is released.

KUSSMAUL 20/20 BATTERY CHARGER

A Kussmaul Auto-Charge 20/20 fully automatic battery charger with 20 amp output shall be installed on the apparatus. Remote voltage sensing shall be provided to compensate the charger output for the voltage drop in the charging wires. A 0-25 ampere meter shall be provided on the charging unit to indicate charge rate.

KUSSMAUL AUTO-PUMP AIR COMPRESSOR

A Kussmaul Auto-Pump 120 volt air compressor shall be provided on the apparatus. The compressor shall have a .76 cfm open flow with a maximum pressure of 100 psi. The pressure switch shall be pre-set at 70 psi cut in and 90 psi cut out.

AUTO-EJECT SHORELINE CONNECTION

A Kussmaul 20 amp 120 volt Super Auto-Eject shall be provided. The unit shall automatically eject the connecting plug when the engine is cranked.

AUTO-EJECT COVER - YELLOW

The Auto-Eject shall have a spring loaded cover yellow in color.

AUTO-EJECT MATING PLUG

A NEMA 5-15P mating female cord end shall be shipped loose with the apparatus to allow the Fire Department to connect the cord end to a Fire Department provided charging cord.

120 VOLT SHORELINE CONNECTION LOCATION

The 120 volt shoreline connection shall be located under the driver's door.

WHELEN TRI-CLUSTER TAILLIGHTS - LED/INCANDESCENT

Whelen 60BTT4" x 6" LED taillights and 60A00TAR 4" x 6" LED turn signals shall be provided. The backup lights shall be 4" x 6" clear incandescent. A polished trim housing shall be provided, one each side for mounting the tail lights, turn signal lights, and backup lights.

BACKUP LIGHTS PARK FUNCTION

The backup lights shall automatically activate when the parking brake is set to provide work lighting at the rear of the apparatus.

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BACKUP ALARM

A minimum 97db backup alarm shall be provided and shall automatically activate when the apparatus transmission is placed into reverse.

The backup alarm shall exceed all NFPA1901 and SAE J994 Type D requirements and testing.

CONSOLE MOUNTED CONTROL PANEL

A control console shall be provided between the driver's and officer's seats for all warning/auxiliary light controls and pump shift.

WARNING LIGHT SWITCH - SINGLE

A single master optical warning device switch shall be provided that will activate all minimum optical warning lighting through a single switch. Individual switches shall not be provided for any minimum optical warning lighting to insure total compliance to the warning lighting requirements defined in NFPA 1901. All lighting controlled by this switch shall not be subject to load management.

Any warning lights that are installed on the apparatus that are not required to meet the minimum optical warning lighting requirements shall be subjected to load management and shall have individual switches to activate/de-activate the warning light.

All switches shall be clearly labeled as to their function.

CENTER CONSOLE MAP POCKET

A storage pocket shall be provided on the rear of the console for storing books, maps, etc.

CENTER CONSOLE CONSTRUCTION MATERIAL

The console shall be constructed of aluminum treadbrite.

CENTER CONSOLE PANEL MATERIAL

The console panel shall be constructed of brushed stainless steel.

ZONE A UPPER WARNING LIGHTING

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A Code 3 model 21TR58NFPA1 LED lightbar shall be mounted on the top of the cab roof. The lightbar shall be 58" in length and mounted with low profile stainless steel brackets.

The lightbar shall be divided into four sections:

The center two sections shall each have a red LED wide angle lighthouse.

The outer sections shall each have five red LED lighthouses.

ZONES C, B, & D UPPER WARNING LIGHTING

Zone C Rear Upper Lighting

Two Code 3 model 550 (B1276) rotating beacons with 50 watt fast rotators, one each side. The Drivers side lens shall be amber and the Officers side shall be red.

Zone B Right Side Upper Lighting

This area shall be covered by the outboard rotator of the lightbar in Zone A upper lighting and the 550 beacon in Zone C rear upper lighting.

Zone D Left Side Upper Lighting

This area shall be covered by the outboard rotator of the lightbar in Zone A upper lighting and the 550 beacon in Zone C rear upper lighting.

FRONT GRILLE WARNING LIGHTS

Two Code 3 model 468 Prizm 4"x 6" red LED lights shall be provided in the grille area on the apparatus. A chrome bezel shall be provided around the lights.

INTERSECTION WARNING LIGHTS - SIDES

One Code 3 model TRX6-R red LED light shall be provided on each side as low and far forward as possible on the apparatus. A chrome bezel shall be provided around the lights.

MID-SECTION WARNING LIGHTS - SIDES

One Code 3 model ULT6-R red LED light shall be provided on each side in the mid-section of the apparatus.

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SIDE FACING LOWER REAR WARNING LIGHTS

One Code 3 model ULT6-R red LED light shall be provided on each side of the apparatus as low and as far rearward as possible on the apparatus.

REAR FACING LOWER WARNING LIGHTS

Two Code 3 model 468 Prizm 4"x 6" red LED lights shall be provided on the lower rear of the apparatus. A chrome bezel shall be provided around the lights.

FEDERAL SIGNAL PA300 SIREN

A Federal Signal model PA300 siren shall be provided and mounted in the cab.

The siren shall have wail, yelp, priority, and air horn tones as well as public address (PA). A hard wired microphone shall be provided.

100 WATT SPEAKER

A 100 watt speaker shall be provided and recessed into the front bumper. The model of speaker installed shall be designed to fit bumper type.

CODE 3 81Z26 SCENELIGHTS

Six Code 3 model 81Z26 9" x 7" 26 degree scenelights shall be provided and mounted two on each side and two on the rear. The lights shall have a chrome plate trim bezel.

12 VOLT SCENELIGHT ACTIVATION SWITCH (1)

A single switch shall be located on the cab control console to activate the 12 volt scenelight(s).

FIRE HELMET MOUNTINGS

Fire helmets will be stored in an exterior compartment and will not be carried in the apparatus cab.

PAINT PROCEDURE - PPG DELFLEET BASE COAT/CLEAR COAT

After the apparatus body has been fully assembled and all mounting holes, etc. have been either punched, machined, or drilled, the apparatus shall be fully disassembled for the paint process.

Masking or taping off of any portion of the apparatus during the paint process shall not be acceptable. All

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compartment doors shall be painted separate from the apparatus body.

All seams or flanges on the apparatus body shall be caulked or properly sealed to prevent moisture accumulation in flanged areas.

APPARATUS BODY PAINTED OFF CHASSIS

The apparatus body shall be painted prior to being mounted on the chassis. Painting of the body off the chassis will prevent primer and paint overspray on the cab, framersails and other critical components of the apparatus and drivetrain.

There shall be no exception to this requirement.

PPG CERTIFIED 10 YEAR LIMITED PAINT WARRANTY

The apparatus body exterior finish paint shall have a 10 year limited warranty. The warranty shall be certified by the manufacturer of the paint. Documentation of this shall be provided to the end user. Any warranty that is extended by the apparatus manufacturer and not backed by the paint manufacturer will not be acceptable.

PPG Commercial OEM Product Warranty Coverage:

Warranty Inclusions:

- Delamination of the topcoat and/or other layers of paint.
- Cracking or checking due to failure of the product.
- Excessive loss of gloss caused by cracking, checking and hazing.

Warranty Exclusions:

- Paint deterioration caused by blisters, bubbles, flaking or other degradation due to rust or corrosion originating from the substrate.
- Hazing, chalking or loss of gloss caused by improper care, abrasive polishes, cleaning agents, heavy-duty pressure washing, or aggressive mechanical wash systems.
- Paint deterioration caused by abuse, scratches, chips, gloss reduction, accidents, acid rain, chemical fallout, road treatment materials/chemicals or acts of nature.
- Any paint that was not applied by Toyne, Inc.
- Claims presented without proper Warranty documentation.
- Failure on finishes performed by Non-PPG Commercial Certified Technicians.
- Failures on finishes due to inadequate film builds.
- Failures due to improper cleaning or surface preparation or failure to follow the product use instructions.

THESE ARE THE ONLY WARRANTIES THAT PPG MAKES, AND ALL OTHER EXPRESSED OR IMPLIED

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WARRANTIES, INCLUDING WITHOUT LIMITATIONS, ANY WARRANTY OF FITNESS FOR PARTICULAR PURPOSE OR USE, ARE DISCLAIMED BY PPG.

ELECTROLYSIS CORROSION CONTROL

The apparatus shall be assembled using ECK or electrolysis corrosion control, on all high corrosion potential areas, such as door latches, door hinges, trim plates, fenderettes, etc. This coating is a high zinc compound that shall act as a sacrificial barrier to help minimize electrolysis and corrosion between dissimilar metals. This shall be in addition to any other barrier material that may be used.

APPARATUS BODY UNDERCOATING

The apparatus body shall be undercoated after assembly is completed. A bituminous based automotive type undercoat shall be used. Care shall be taken to avoid undercoat application to items that would hinder normal maintenance.

APPARATUS BODY COMPARTMENT INTERIOR FINISH

The interior of all apparatus body compartments shall be finished with a gray textured coating.

TIRE PRESSURE VISUAL INDICATORS

Real Wheels model RWTG1234 valve stem mounted visual indicators shall be provided on each tire. The LED indicators shall flash when the tire pressure drops 8 psi.

LETTERING

The Fire Department shall provide and install all vehicle lettering and numbering.

4" NFPA REFLECTIVE STRIPE

A 4" reflective stripe shall be applied to the apparatus. The stripe shall be applied to a minimum of 50% of the length of the apparatus on each side and 25% across the front of the apparatus. The stripe shall comply with NFPA 1901 requirements.

PRIMARY REFLECTIVE STRIPE COLOR - WHITE

The primary reflective stripe shall be 680-10 white.

REFLECTIVE STRIPE - HORIZONTAL

The reflective stripe shall be applied in a straight horizontal line from front to rear. The height of the stripe on the chassis cab and the body shall be as close as possible.

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INNER CAB DOOR REFLECTIVE STRIPING - 2 DOOR

A minimum of 100 square inches of reflective material shall be provided on the inner door liner of each cab door.

REAR CHEVRON STRIPING - DIAMOND GRADE

A minimum of 50 percent of the rear vertical surface of the apparatus shall be covered with 6 inch alternating 983-71 red and 983-23 fluorescent yellow green "Diamond Grade" retro-reflective striping. The striping shall slope downward away from the centerline of the apparatus at a 45 degree angle.

The retro-reflective material shall conform to the requirements of ASTM D 4956 "Standard Specification for Retro-Reflective Sheeting for Traffic Control", Type I or better.

ENGINE HORIZONTAL EXHAUST

Shielding shall be provided between the apparatus body and the exhaust pipe if necessary to deflect heat away from the body. The exhaust system shall be designed and installed to comply with EPA equipment requirements and shall not be modified.

CAB ENTRY STEP COVER

The OEM provided cab entry step on the side opposite the fuel tank shall be removed from the chassis provided brackets and replaced with a fabricated aluminum treadbrite step assembly.

FUEL TANK/STEP COVER

The OEM provided cab entry step on the same side as the fuel tank shall be removed from the chassis provided brackets and replaced with a fabricated aluminum treadbrite step assembly.

REAR MUDFLAPS

Heavy duty black rubber mudflaps shall be provided on the rear wheels. The mudflaps shall be attached to the apparatus in the rear wheel well area using heavy duty stainless steel retention straps that are secured into place using stainless steel fasteners.

FRONT/REAR AXLE NUT COVERS AND BABY MOONS

The front and tandem rear axles shall have stainless steel nut covers and baby moons.

FRAMERAIL TOW EYES - CHROME PLATED

Two 3/4" chrome plated steel tow eyes shall be attached direct to the end of the framerails on the rear of the apparatus. The eyes shall have a minimum of a 3" diameter pass through. Each eye shall be attached to the framerail with a minimum of four 3/4" hardened steel bolts with locking nuts.

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BATTERY DANGERS LABEL - FAMA01

A permanent label shall be provided near the battery location that warns of potential injury or death that could be caused by the batteries. The label shall also state precautions that should be taken while working on or around the batteries.

ROTATING SHAFTS DANGER LABEL - FAMA02

A permanent label shall be provided on each side of the framerail and in any other location(s) where rotating shaft hazards are apparent. The label shall warn of potential injury or death that could be caused by the movement of the shaft(s) as well as precautions that should be taken while working on or around them.

HOT SURFACE DANGERS LABEL - FAMA03

A permanent label shall be provided near any hot surface that warns of potential injury or death that could be caused by contact with the surface. The label shall also state precautions that should be taken while working on or around the surface.

HOT EXHAUST DANGERS LABEL - FAMA04

A permanent label shall be provided near any hot exhaust surface that warns of potential injury or death that could be caused by contact with the surface. The label shall also state precautions that should be taken while working on or around the surface.

SPINNING ENGINE FAN DANGER LABEL - FAMA05

A permanent label shall be provided on both sides of the engine fan. The label shall warn of potential injury or death that could be caused by the movement of the fan as well as precautions that should be taken while working on or around them.

SEATED AND BELTED WARNING LABEL - FAMA07

A permanent label shall be provided that is visible to all occupants that states that they should be seated and belted while the apparatus is in motion. The label shall also state potential injuries or death that could be caused if the safety belts are not used properly.

AIR CONDITIONING REFRIGERANT WARNING LABEL - FAMA09

If the apparatus is equipped with any type of air conditioning system, a permanent label shall be provided that is located in an area that would be visible to service personnel. The label shall state that the system contains R134A, the necessary precautions that should be taken and the dangers of working on or around the system.

CAB INTERIOR EQUIPMENT MOUNTING DANGER LABEL - FAMA10

A permanent label shall be provided inside of the cab warning of the dangers of unsecured equipment inside the cab. The label shall state that all equipment shall be properly secured and also warn of potential injury or death that could be caused by failing to do so.

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FIRE SERVICE TIRE RATING LABEL - FAMA12

A permanent label shall be provided inside of the cab in view of the driver while entering the cab warning of the dangers of improper use of the tires on the apparatus. The label shall also warn of potential injury or death that could be caused by improper tire use or condition.

ELECTRONIC STABILITY CONTROL LABEL - FAMA13

A permanent label shall be provided inside of the cab in view of the driver warning of the dangers of improper operation of the apparatus and the importance of safe driving. The label shall also warn of potential injury or death that could be caused by improper operation of the apparatus.

MAXIMUM OCCUPANCY LABEL - FAMA14

A permanent label shall be provided inside of the cab in view of the driver stating the maximum number of personnel that can ride in the apparatus. The label shall also warn of potential injury or death that could be caused by exceeding the stated capacity.

DO NOT WEAR HELMET LABEL - FAMA15

A permanent label shall be provided inside of the cab in view of all seated positions stating that helmets should not be worn in cab. The label shall also warn of potential injury or death that could be caused by wearing helmet in cab.

VEHICLE BACKING LABEL - FAMA17

A permanent label shall be provided inside of the cab in view of the driver advising of proper procedures to following when the apparatus is in reverse motion. The label shall also warn of potential injury or death that be caused by failing to follow proper procedures.

INTAKE/DISCHARGE CAP PRESSURE LABEL - FAMA18

A permanent label shall be provided in all areas that intakes and discharges are capped. The label shall give instruction on how to properly remove the cap. The label shall also warn of potential dangers, injury or death that be caused by failing to follow proper cap removal procedures.

PORTABLE TANK RACK WARNING LABEL - FAMA21

A permanent label shall be provided on the front and rear area of the portable tank rack to provide warning to stay clear of area around the moving rack and that the equipment could cause injury or death.

HOSE RESTRAINT LABEL - FAMA22

A permanent label shall be provided near any hose storage area. The label shall instruct the operator to insure that all hose is properly secured prior to placing the apparatus in motion and to provide warning of potential dangers, including injury or death, in failing to do so.

ACCESS STEPS/LADDER LABEL - FAMA23

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A permanent label shall be provided at any area of the apparatus where personnel will be boarding or exiting the apparatus. The label shall instruct the operator in the proper method of climbing into or onto the apparatus as well as exiting and provide indication of potential injury or death that could occur in failing to do so.

DO NOT RIDE ON REAR STEP WARNING LABEL - FAMA24

A permanent label shall be provided at the rear step area stating that riding in this area while the vehicle is in motion is prohibited and shall warn of the potential dangers, including injury or death, in doing so.

TRAINED OPERATOR ONLY LABEL - FAMA25

A permanent label shall be provided on the pump panel that states that only properly trained personnel should operate the apparatus and shall indicate that injury or death could occur as a result.

NOT A STEP WARNING LABEL - FAMA26

A permanent label shall be provided in any horizontal location that a firefighter may feel tempted to use as a step but is not designed, constructed or intended to be a stepping, standing or walking surface. The label state that the surface is not intended for this purpose and indicate potential injury or death in doing so.

COMPARTMENT TOP WARNING LABEL - FAMA26

A permanent label shall be provided on the front and rear of the compartment tops on both sides warning that the area is not designed, constructed or intended to be a stepping, standing or walking surface. The label state that the surface is not intended for this purpose and indicate potential injury or death in doing so.

SIREN NOISE WARNING LABEL - FAMA42

A permanent label shall be provided inside the driver's door warning of potential injury that could be received from the noise of the siren. The label shall also state safety precautions that should be taken when the siren is in use.

FLUID CAPACITY LABEL

A permanent plate shall be mounted in the driver's compartment specifying the quantity and type of the following fluids used in the apparatus (if applicable) for normal maintenance:

- Engine oil.
- Engine coolant.
- Chassis transmission fluid.
- Pump transmission fluid.
- Pump primer fluid.
- Drive axle fluid.
- Air conditioning refrigerant.
- Air conditioning lubrication oil.
- Power steering fluid.
- Cab tilt mechanism fluid.
- Transfer case fluid.
- Equipment rack fluid.
- CAFS compressor system lubricant.

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- Generator system lubricant.
- Front tire cold pressure.
- Rear tire cold pressure.
- Maximum tire speed ratings.

LENGTH, HEIGHT, WEIGHT LABEL

A permanent plate or label shall be provided in the cab stating the overall length, height and the gross vehicle weight rating (GVWR), in tons, of the completed apparatus.

The wording on this label shall indicate that the information on the plate/label was current at the time of manufacture and if the overall height of the apparatus changes while the vehicle is in service, the purchaser shall revise the height dimension on the plate.

AUXILIARY PUMP RATING LABEL - NFPA

A permanent label shall be provided at the pump operator's location showing the rated flow and pressure capacities of the auxiliary pump system.

AUXILIARY PUMP HYDROSTATIC TEST CERTIFICATION

The auxiliary pump shall be hydrostatically tested to NFPA 1901 17.13. Certification of test shall be provided with the completed apparatus.

OPTICAL WARNING LIGHT CERTIFICATION

The emergency warning light system shall be certified using one of the available methods provided for in NFPA 1901 13.8.16.

SIREN CERTIFICATION

The Siren manufacturer shall certify the siren to NFPA 1901 13.9.1.1.

ELECTRICAL SYSTEM PERFORMANCE CERTIFICATION

A written load analysis and the results of the electrical system performance test shall be provided with the completed apparatus. The load analysis shall include the following:

- Nameplate rating of the alternator.
- The alternator rating under the conditions specified in NFPA 1901 13.3.2.
- Each of the component loads specified in NFPA 1901 13.3.3 that make up the minimum continuous electrical load.
- Additional electrical loads that, when added to the minimum continuous electrical load, determine the total continuous electrical load.
- Each individual intermittent electrical load.

BOOSTER TANK CAPACITY CERTIFICATION

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The manufacturer shall certify the capacity of the booster tank. Certification shall be documented on the Manufacturer's Record of Construction document.

NPFA SLIP RESISTANCE CERTIFICATION

Any materials used as a stepping, standing or walking surface shall be certified to be compliant with NFPA 1901 15.7.4. Documentation shall be provided with the completed apparatus.

WEIGHT CERTIFICATION

Documents from a certified scale showing actual loading on the front, rear and overall apparatus shall be provided. The apparatus shall be scaled with the water tank full but without personnel, equipment and hose.

VEHICLE ROLLOVER STABILITY

The apparatus chassis shall be equipped with a stability control system and shall be certified to NFPA 1901 Rollover Stability requirements.

MANUFACTURER'S RECORD OF APPARATUS CONSTRUCTION

All information required to comply with NFPA 1901 4.20.1 shall be provided with the completed apparatus.

OPERATIONS AND SERVICE DOCUMENTATION

The apparatus shall be complete with all operation and service documentation covering the apparatus as delivered and accepted. The documentation shall address the inspection, service and operations of the apparatus and all major components as required in NFPA 1901 4.20.2.

"AS BUILT" APPARATUS BODY OWNERS MANUALS (2)

Two "as built" apparatus body owner's manual USB drive's shall be provided with the apparatus. All apparatus body electrical schematics shall be provided as well as all instructional and maintenance manuals on components provided and permanently mounted on the apparatus. A copy of the final apparatus body build specifications shall also be included on the drive. The USB shall be "read only" and shall not allow modification.

To eliminate component confusion, generic documentation with equipment that is not provided on the apparatus body shall not be acceptable.

FAMA FIRE APPARATUS SAFETY GUIDE

One (1) FAMA Fire Apparatus Safety Guide(s) shall be provided with the completed apparatus.

STATEMENT OF EXCEPTION - NFPA MISCELLANEOUS REQUIRED EQUIPMENT

The customer shall be responsible for providing all NFPA required miscellaneous equipment that is not contained within these specifications. All required equipment must be properly installed on the apparatus and in working condition prior to the apparatus being placed into service.

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FAMILIARIZATION AND DEMONSTRATION

Upon completion of the new apparatus, an authorized properly trained representative of the manufacturer shall perform a "Familiarization and Demonstration" overview of the apparatus and related components.

The Department shall provide the representative with a written list, by full proper names, of the individual(s) that are to receive the overview. Upon completion of the overview, each person in attendance will be required to acknowledge, by signature, that they understand the operation of the apparatus and all related components.

The following items shall be covered during the familiarization and demonstration overview:

Chassis:

Familiarization of the apparatus shall include the following:

- How to locate gauges or indicators and check all fluid levels and operational use of the apparatus.
- How to tilt the chassis cab or hood assembly for access to the engine, fire pump (if applicable), or aerial control (if applicable), or any other device to allow access to fluids or for required maintenance.
- Interior cab controls, instruments, mirrors, safety devices or alarms, brake operations, transmission control, pump controls (if applicable) exhaust regeneration (if applicable), seat adjustments, warning light engagement and other operational equipment.

Post acceptance training requirements:

After apparatus acceptance, the Department shall be responsible for ongoing training of personnel. The Department should not allow untrained or undertrained personnel to operate the apparatus or any included feature of the apparatus.