3000 Gallon Stock Unit All-Poly® Series Tanker-Pumper Specifications

Prepared for: Job #3215S

<City, State>

Midwest Fire Rep:

December 23, 2021

Notes:

Date	Change Order #	Op Number	Description	Rev

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SECTION 1: BOOSTER TANK

1.00 “T” Tank with a Lifetime Warranty from Its Manufacturer

The All-Poly Series features a polypropylene "T" style tank. The top of this tank may be used as a hose bed, with optional dividers (see section 14). Hose beds stretch the full width and full length of the tank.

“T”-style tank fabricated from non-corrosive, stress-relieved virgin copolymer polypropylene thermoplastic material. All exterior tank joints and seams are extrusion welded. All welds conform to DVS and AWS standards. All joints, seams, and welds tested for integrity and leaks and are certified to be free from defects. The top of the tank is white with a textured finish and is fitted with removable lifting eyes designed with a 3-to-1 safety factor to facilitate easy removal.

The upper rear of the tank has a transverse internal bulkhead isolated from the water carrying portion of the tank. This area may be used for wiring connections and for installing lights and grab handles. The use of external blocks for mounting equipment will be kept to a minimum providing a pleasant appearance. Wire tubes will be installed inside the tank, originating in the transverse bulkhead, and terminating at the bottom of the tank. Wires for lights and equipment will not be visible from the outside of the tank.

The material thickness will be dependent upon its function. The sides, top and ends will be 3/4" (.75) thick. The baffles and fill tower will be 3/8 to 1/2" (.50) thick.

The transverse swash partitions extend approximately 4” off the floor to just under the cover. The longitude swash partitions extend from the floor to the tank through the cover to allow for positive welding and maximum integrity. All partitions are equipped with vent and air holes to permit movement of air and water between compartments. The partitions are designed to provide maximum water flow. All swash partitions interlock with one another and are welded to each other as well to the walls of the tank. This baffling system will be fully compliant with NFPA and the DOT regulations.

There will be a sump located on the bottom of the tank with a ¾” drain valve at the lowest point. A 3” minimum removable clean out plug is installed at the bottom rear and bottom front of the tank.

Tank fill couplings backed with flow deflectors to disperse the stream of water entering the tank, and capable of withstanding sustained fill rates of up to 1,000 G.P.M. at 100 PSI maximum.

All auxiliary outlets and inlets must meet NFPA 1900 guidelines in effect at the time of manufacture.

1.01 Tank Size

1.01.05 All-Poly Series 3000 gallon

1.02 Rear Fill Tower

Tank has an overhead fill tower with lid, located at the rear of tank. Fill tower is constructed of 1/2" polypropylene with minimum dimensions of 16" square. The tower has a 1/4" removable Poly screen and a polypropylene hinged-type cover with a vent overflow. An internal overflow system is to be inside in the tank and discharge behind the rear wheels. This allows air to enter the tank when dumping water.

1.02.00 Center

THE TANK WILL CARRY A LIFETIME WARRANTY FROM ITS MANUFACTURER

SECTION 2: HYDRANT FILLS AND TANK LEVEL

2.00 Street Side Hydrant Fill

Hydrant fill at the rear of the apparatus is equipped with a valve, a 30-degree elbow, bleeder valve, plug or cap holder with a tether chain.

2.00.01 Street Side 2 ½" NST

2.02 Tank Level Gauge

- Pressure transducer mounted on the outside of the tank in an easily accessible area. Sealed foam tanks (if so equipped) will require zero pressure vacuum vents.
- Super bright LED display viewable from 180 degrees with a visual indication at multiple accurate levels.
- Weather resistant connectors to connect to the digital display, the pressure transducer, and the apparatus power. Additional displays are easily integrated and will receive data from the same source as the Master Display; no additional transducers required.
- Tank level gauge indicates the liquid level on easy-to-read LED display.

2.02.04 One (1) Innovative Controls SL Plus Series Water Tank Level Gauge

2.02.04.01 Installed on the street side pump panel.

2.02.04.03 Installed at the rear street side.

2.03 Spanner Wrenches

One (1) adjustable hydrant wrench and two (2) spanner wrenches with holder.

2.03.01 Installed on the street side rear panel.

SECTION 3: DUMP VALVES AND CHUTES

Newton 10" square stainless-steel Kwick-Dump Gate style (full flow) dump valves with stainless-steel flip chutes and telescopic chutes. For improved water flow, the dump valve is attached directly to the tank and not by use of a rear manifold system.

3.00 Manual Dump Valves

Manual dump valves will have a locking control handle.

3.00.01 Rear dump valve with 12" flip chute.

3.00.01.03 Top handle

3.00.03 Street side rear dump valve with 36” telescoping chute.
3.00.04 Curb side rear dump valve with 36” telescoping chute.

SECTION 4: PORTABLE TANK CARRIER

4.00 Manual Tip-down Portable Tank Carrier

One (1) manual tip-down portable tank carrier for loading/unloading of a folding water tank located above the catwalk and designed to fold down over the body side. When in the up position the tank, carrier will be secured with heavy duty locking DeStaco latches. The tank carrier is constructed of 1 1/4" 14-gauge stainless-steel square tubing.

A red “Carrier down" flashing LED warning light visible to the driver will illuminate when the portable tank carrier is not in the stowed position.

4.00.08 3000 gallons, curb side

4.01 Manual Carrier Enclosure Option

Portable tank carrier enclosure is enclosed on three sides and is equipped with two grab rails, except for the wind deflector. If equipped, the wind deflector option is installed on the tank carrier towards the front, and only has one grab rail.

4.01.01 Portable Tank Carrier with front aluminum Tread-brite wind deflector.

4.06 Portable Tank

The portable tank frame will be constructed with the requested material below. The tank liner is constructed of nylon -coated material, 23 oz. side walls and a 30 oz. floor with handles installed in the floor for ease of folding. All portable tanks will have two outlets.

4.06.08 3000 Gallons, Aluminum Frame, Red, 159”x 29”

SECTION 5: BODY AND COMPONENTS

Sub-frame

- Integral to the tank cradle and constructed using extruded .25” thick aluminum tubing.
- Designed to support the body structure and to provide maximum support for the weight of the body and all stored equipment.

Body

- The body will be attached to the sub-frame using hat channels.
- The mounting system provides secure attachment of the body to the sub-frame while allowing enough range of movement between the two assemblies.
- The body will be enclosed on all sides and incorporate closed wheel wells and finished storage compartments.
- Stainless-steel corner guards to protect from damage on road and fire scene.
- Front lower vertical surface of body protected with aluminum Tread-brite.

Tank

- The tank is affixed to the cradle utilizing hat channel mounting brackets constructed of ¼" thick stainless-steel. The channels are mounted beneath the center of the tank before and after the cross members of the cradle. The channel is surrounding these members and is bolted directly to the bottom of the tank thereby securing the tank to the cradle.
- This mounting system provides a free-floating connection of the tank to the cradle which allows the chassis frame's normal movement and twist to introduce no stress upon the tank or body.

Fenders

- Fenders will be integral with the side of the body.
- Fender wells are constructed with full circular copolymer polypropylene thermoplastic inner liners for ease of cleaning and maintenance.

Materials

- The entire body is fabricated from non-corrosive, stress-relieved virgin copolymer polypropylene thermoplastic material.
- All exterior body joints and seams are extrusion welded.
- All welds will conform to DVS and AWS standards.
- All joints, seams, and welds will be tested for integrity and are certified to be free from defects.
- All joints and are 100 percent welded inside and out; no skip welding is permitted.

THE BODY WILL CARRY A LIFETIME WARRANTY FROM ITS MANUFACTURER

5.00 Fenderettes

Bright polished aluminum fenderettes are installed on the wheel wells to prevent splash and enhance appearance. The fenderettes extend approximately 1" beyond the body side and are designed to be replaced. All fasteners will not be exposed to the exterior of the fenderettes or body.

5.01 Rub Rail

The bottom edge of the entire apparatus will have an aluminum rub-rail installed including the pump house, and rear step. The rub-rail is replaceable, made from solid extruded aluminum and features a reflective stripe at the rail center.

5.01.01 Red/White Stripe

5.02 Tow Eye

Attached to the rear of the chassis frame is a black powder coated steel support system that provides extra strength to the rear body with integrated tow eyes.

5.03 Cradle

An all-aluminum cradle is engineered and constructed to connect the chassis frame with the copolymer tank and body. The cradle is constructed using extruded aluminum tubing .25" thick and extruded aluminum flats .375" thick. Cradle cross members are spaced to restrict unsupported portions of the

tank between cross members to a maximum of 550” squared. There are cushioned rubber extrusions placed over all tank support areas to isolate the tank from the aluminum cradle.

SECTION 6: BODY COMPARTMENTS

6.00 Street Side Compartments

- A sweep-out style compartment provided on the street side, integral to the body, constructed using white copolymer material.
- Each compartment will have an anodized aluminum roll-up door, door activated LED compartment lights, corrosion resistant vents, black Turtle Tile plastic dry decking, and floor drains.
- Compartments at wheel height or below (located ahead or behind rear wheels) are 25” deep.
- Full height compartments have stepped depth: 12” above the wheel wells and 25” at wheel height or below.
- Compartments located above the wheel wells are 12” deep.

6.00.01 Street Side Front Low Compartment

Compartment is located on the street side, ahead of the rear wheels. Approximate inside dimensions are 60” wide by 32” tall by 25” deep. (50” roll-up door)

6.01 Curb Side Compartments

- A sweep-out style compartment provided on the curb side, integral to the body, constructed using white copolymer material.
- Each compartment will have an anodized aluminum roll-up door, door activated LED compartment lights, corrosion resistant vents, black Turtle Tile plastic dry decking, and floor drains.
- Compartments at wheel height or below (located ahead or behind rear wheels) are 25” deep.
- Full height compartments have stepped depth: 12” above the wheel wells and 25” at wheel height or below.
- Compartments located above the wheel wells are 12” deep.

6.01.01 Curb Side Front Low Compartment

Compartment is located on the curb side, ahead of the rear wheels. Approximate inside dimensions are 52” wide by 32” tall by 25” deep. (50” roll-up door)

SECTION 7: RUNNING BOARDS, CATWALKS, AND REAR STEP

7.00 Running Boards

A 12” wide running board is located at the base of the pump house and is made from embossed aluminum tread plate and includes a replaceable extruded aluminum rub rail.

7.01 Catwalks

Catwalks are located above the street and curb side compartments, made of embossed aluminum tread plate, and bent at a 30-degree angle to provide a drip rail.

7.02 Rear Step

The 12” deep rear step is NFPA compliant and made of embossed aluminum tread plate with a 7" tall kick plate. Rounded polished aluminum castings installed on the corners of the step.

SECTION 8: GRAB RAILS AND FOOTSTEPS

8.00 Grabs Rails

The grab rails are made of 1 ¼ " diameter extruded aluminum tubing with knurled finish and chrome plated stanchion brackets.

8.00.01 Rear Grab Rails

Vertical grab rail(s) provided at the rear.

8.00.01.01 Two (2) Grab Rails, One (1) on each side.

8.00.04 Front Grab Rail - Street side

There is one (1) grab rail located on street side of tank in the upper front corner for ease of loading and unloading hose cross lays.

8.00.05 Front Grab Rail - Curb side

There is one (1) grab rail located on curb side of tank in the upper front corner of tank for ease of loading and unloading hose cross lays.

8.00.08 Hose Bed Grab Rail

One (1) horizontal grab rail located below the hose bed at the rear of the truck.

8.01 Access Steps

As per NFPA 1901 standards, all steps are a minimum of 35" square.

8.01.01 Upper-Level Hose Bed Folding Steps

There are large chrome plated steps with polished kick-plates provided at the rear of tank for access to the hose bed area.

8.01.01.05 Folding Steps, Two (2) Curb Side, Two (2) Street Side

8.01.02 Front Folding Steps - Street side

Large chrome plated illuminated folding steps are provided at the front on the street side, for access to the catwalk area. The steps are a minimum of 35" square.

8.01.02.01 Quantity one (1)

8.01.03 Front Folding Steps - Curb side

Large chrome plated illuminated folding steps provided at the front on the curb side, for access to the catwalk area. The steps are a minimum of 35" square.

8.01.03.01 Quantity one (1)

8.01.04 Lower-Level Rear Steps

Large chrome-plated illuminated steps provided at the rear for access to the catwalk area. The steps are a minimum of 35" square with polished kick-plates.

8.01.04.03 Folding Steps, Two (2), One (1) Curb Side, One (1) Street Side

SECTION 9: ELECTRICAL EQUIPMENT

9.00 Electrical System

- The apparatus is equipped with a battery disconnect “Master Switch” mounted inside the chassis cab.
- The electrical system will utilize Class1 Inc. ES-Key™ technology, UltraView™ displays and Smart Touch switch modules, where applicable.
- The apparatus is equipped with a Class 1 ES-Key Management System for controlling electrical system devices. This management system can perform load management functions, system switching, monitoring, and reporting, and be fully programmable for a standardized electrical system utilizing the ES-Key Professional software program.
- The ES-Key system incorporates the functions of the Vehicle Data Recorder and Seat Belt Monitor, eliminating the need for a separate system.
- The ES-Key system utilizes a Controller Area Network (J1939) protocol to provide multiplexed control signals for "real time" operation. The system consists of a main control module (Universal System Manager or Supernode II) and the appropriate combination of Power Distribution Module(s) (PDM), Switch Input Module(s) (SIM), and other I/O modules as required for the application.
- Optional system enhancements may include the UltraView™ 700 display, the UltraView 450 display and Smart Touch switch modules for increased graphic user interface.
- Supernode II™

  The apparatus is equipped with a Class1 ES-Key™ system with a Supernode II™ high density input output node. The Supernode II™ has (24) inputs, (24) outputs, a Universal System Manager, a data logger, programmable special utilities, and select J1939 engine and drive train message reception with ES-Key™ I/O association. It must be sealed to IP-67 and have integrated power connections.

  The Supernode™ has (18) positive and (6) negative outputs. Each positive output is capable of 13-amps continuous duty. The negative outputs are capable of 2-amps continuous duty. Supernode II™ outputs contain features such as digital circuit breaker, flash capability, PWM capability and open load detection.

The Supernode II™ special utility functions include timers (delay on/off and one shot), counters, bi-stable switches, and select J1939 broadcast messages. The Supernode II™ has an integrated USB port to allow for direct connection to the ES-Key system without additional interface devices.

- Voltage Monitor: A voltage monitor is built into the ES-Key electrical system. A warning alarm is activated when the alternator output voltage falls below any desired voltage (usually 11.5 volts). Alarm mounted inside the chassis cab.

- UltraView™ 700 Display

  The apparatus is equipped with the UltraView™ 700 display (UV700). The UV700 is a 7-inch, full color LCD display, with (14) buttons and touch screen capability with (2) J1939 CAN Bus connections and (3) NTSC/PAL video inputs. It is bonded for direct sunlight viewing, sealed to IP67, and mounted in either the flush, pedestal, or rear-mount position.

  The UV700's switches are configured to allow for the control of emergency master and non-emergency master functions and are completely configurable via the ES-Key™ Professional software. Switches are set to act as momentary, maintained, or three-way switches without any physical hardware change. All switches and or indicators may be configured as touch screen inputs into the ES-Key™ system. The (14) buttons are blue LED backlit.

- Smart Touch Switch Modules

  The apparatus is equipped with the appropriate quantity of Smart Touch switch modules for enhanced device activation. The Smart Touch switch module has an 8-button, configuration to accommodate specific apparatus requirements. Individual switches are backlit with symbol labels. Switch panels are sealed to IP67 and have dual LED indicators. Each switch position's back light may be individually controlled allowing for the specific switch position to be used as an indicator.

9.01 DOT Lighting Details

- A total of nine (9) LED clearance lights and seven (7) red LED lights installed at the rear.
- Two (2) amber LED lights are installed on the front street and curb sides.
- Reflectors are installed per DOT specifications.
- A red warning light visible to the driver in the chassis cab that illuminates when a compartment door is ajar/open.
- An illuminated license plate bracket installed at rear.

9.02 Lower-Level Rear Lighting

9.02.01 Quad cluster Taillight Package

Two (2) LED Quad-Cluster combination include: red LED stop/tail, clear LED backup light, amber LED arrow type turn signal, and LED warning light, installed at the rear. Light assemblies provided in chrome plated housing.

9.02.01.01 Whelen SurfaceMax C6 Series Quad-Cluster

9.02.03 Side Mount Turn Signals

LED side-mounted DOT approved turn signal repeaters, mounted in the rear wheel area on the body to provide visible lateral turn warning.

9.06 Power Distribution Options

9.06.06 12V Power Strip

A 12V Battery Power, 6 position overload/short protected terminal strip will be installed in the upper front sill of the compartment unless specified otherwise.

9.06.06.09 Inside Center Console, Wired to Chassis Battery

9.06.06.10 Inside Center Console, Wired to Master Switch

SECTION 10: EMERGENCY SIREN AND LIGHTING EQUIPMENT

10.00 Apparatus Control Center

All emergency lighting, options, and accessories are controlled at a master control center in the cab.

The apparatus control center:

- Controls all warning lights and scene lights.
- Includes an "Open Door" and other optional indicator lights.
- UV700 Multiplex display – If equipped.
- Controls other optional functions if equipped. (I.E. Electric Dump Valves, Pump Shift)
- Mounted Electronics, Sirens, and Radios – If equipped.
- Features lighted identification plates on a non-glare panel face that clearly identify each switch and its function.
- Removable lid on console for maintenance and adding additional items.
- Control Centers will require that there be no seat in between the driver and passenger seats.

All warning packages are fully NFPA compliant and certified by the lighting component manufacturer to meet all requirements.

10.00.01 Center Console for Freightliner Chassis

10.01 Light Bar:

The light bar is mounted on the cab roof.

10.01.01 Whelen model JE2NFPA Justice Series light bar

Whelen model JE2NFPA Justice Series, Super-LED low-profile, 56” long. Covers front and front side zones. The light bar has four (4) linear corner modules with nine (9) Super-LED light heads per module, and six (6) CON3 modules with three (3) CON3 Super-LED light heads per module.

10.01.01.01 Whelen JE2NPFA Justice Series, Red

10.02 Siren:

10.02.01 Whelen Siren

Whelen Siren 200-watt, six (6) function Class A electronic siren, mounted in the chassis cab in a location convenient to the driver. The electronic siren includes full function, 17 Scan-Lock siren tones, and hard-wired microphone. The siren control is lighted for easy night operation. Cast aluminum speaker available with three (3) siren mounting locations.

10.02.01.02 Whelen 295SLSA1 siren w/ speaker flush mounted street side

10.04 Lower-Level Lights

10.04.03 Front/Rear Whelen SurfaceMax C6 Series LED

Two (2) Whelen SurfaceMax C6 series lights mounted to the grill of the chassis and two (2) mounted on the rear of the body in the taillight cluster with a chrome trim ring. Lights will have clear lenses.

10.04.03.01 Front/Rear Flashers, Red, SurfaceMax C6 LED

10.05 Intersection Lights

All lights mounted 18” above the ground, and no higher than 60”. One (1) positioned as far forward as possible, and one (1) positioned as close to the rear of the truck. With three (3) lights one (1) positioned behind the cab, but in front of the rear wheels. Lights will include a chrome bezel. Lights will have clear lenses.

10.05.02 Intersection, Red, SurfaceMax C6 Series LED, Three (3) each side

10.06 Upper-Level Side/Rear Warning Lights

10.06.08 Whelen M9V2R

Whelen M9V2R Series Combination LED Scene Light/Flasher with chrome bezel. Lights will have clear lenses.

10.06.08.02 Side/Rear, Scene/Flashers, Red, M9V2R Series, Two (2) each side of the tank in the front and rear upper corners, with two (2) on the rear of apparatus in the upper corners. (Six (6) Total)

10.07 Scene lights

Scene Lights are controlled from the control center located in the chassis cab and a One Touch switch pack located on the pump panel. Lights will include a chrome bezel.

10.07.05 Automatic Reverse Scene Wiring

Rear scene lights will be wired to illuminate when chassis is placed in reverse.

10.09 Ground Lights

10.09.02 Six (6) ground lights

There are six (6) LED ground lights installed to illuminate the area below the apparatus. Two (2) lights are installed on street and curb side below the chassis steps, two (2) lights are installed on street and curb side below the pumphouse step, and two (2) lights are installed on street and curb side below the rear step area. Grounds lights will be activated when parking brake is applied.

10.10 Accessory Lights

10.10.06 Step Lights

10.10.06.01 Four (4) Step Lights

There are four (4) LED step lights installed to illuminate the chassis steps. Two (2) lights are installed on the street and curb side below the chassis doors, one (1) per step. Two (2) lights are installed on the street and curb side below the top chassis step to illuminate the bottom step, one (1) per step. Step lights will be activated when parking brake is applied.

SECTION 11: PAINTING, LETTERING, STRIPING, AND SIGNS

11.00 Painting process

The entire tank, body, and components will be washed, sanded, prepped for primer, cleaned, and primed with PPG urethane primer filler. The body will be hand sanded and color match painted using a PPG Deltron base coat/clear coat paint. After paint is applied and properly cured the apparatus will be color sanded and buffed to a high gloss. The paint process is approved by PPG.

11.00.01 Color Match Red

11.00.01.04 Color Matched, 3000 gallon

10-YEAR WARRANTY ON PAINTED BODY PARTS

11.01 ID plate

There is a permanent plate located in the chassis cab with the following information:

Quantity and type of fluids used in the vehicle. This plate includes:

- Engine oil, quantity.
- Engine coolant, quantity.
- Chassis transmission fluid, quantity.
- Pump transmission fluid, quantity.
- Drive axle lubrication fluid, quantity.
- Air conditioning refrigerant, quantity.
- Air conditioning lubrication oil, quantity.
- Power steering fluid, quantity.
- Front and rear cold tire pressure.

- Number of personnel the vehicle is designed to carry located in an area visible to the driver.
- Height and length of the vehicle in feet and inches.
- Gross vehicle weight rating (GVWR) in pounds.
- A safety sign FAMA07, which warns of the importance of seat belt use, shall be visible from each seat that is intended to be occupied while the vehicle is in motion.
- A safety sign FAMA10, which warns of the need to secure items in the cab, shall be visible inside the cab.
- A safety sign FAMA15, which warns not to wear helmets while the vehicle is in motion, shall be visible from each seat that is intended to be occupied while the vehicle is in motion.
- A safety sign FAMA24, which warns personnel not to ride on the vehicle, shall be located at the rear step areas and at any cross walkways.
- Do Not Move Apparatus Light
    - A red flashing light located in the chassis cab. The light shall be illuminated automatically whenever the vehicles parking brake is not fully engaged and any of the following conditions exist:
        - Any passenger or equipment compartment door is not closed.
        - Any ladder or equipment rack is not in the stowed position.
        - Stabilizer system is not in its stowed position.
        - Powered light tower is not stowed.
        - Any other device permanently attached to the apparatus is open, extended, or deployed in a manner that is likely to cause damage to the apparatus if the apparatus is moved.

11.03 Vinyl Lettering

11.03.01 Provided on the chassis doors: <description/pictures>

11.03.06 Provided for the customer unit number on the street and curb side chassis underneath the headlights (M2-106): <description/pictures>

11.05 Reflective striping

The apparatus body and chassis will have a reflective stripe on each side and the front bumper per NFPA 1901 standards.

11.05.01 4" wide white reflective stripe with a 1" wide white reflective stripe spaced approximately 1/2" above.

11.05.01.02 Tandem Axle

11.05.03 Reflective tape inside chassis doors- Per NFPA 1901 standards any door designed to allow persons to enter, or exit has a minimum of 96 square inches of retro-reflective material affixed to the inside of the door.

11.06 Rear Chevron

11.06.04 Diamond Grade Pattern, Chevron 100%, w/ Shadow Flame

Per NFPA 1901 standards, 100 percent of the rear will include red and fluorescent yellow diamond grade pattern chevron retro-reflective striping installed, with each stripe a minimum of 6” wide, including an imbedded “shadow” flame outline.

SECTION 12: CORROSION PROTECTION AND MUD FLAPS

12.00 Corrosion Protection

The All-Poly Series body has several features which prevent corrosion.

- All fasteners are stainless-steel where applicable.
- All contacts of dissimilar metals are insulated with 3M products to prevent galvanic corrosion.
- Rub rails are Type II bright dip anodized.
- Tow rings are powder coated steel.
- The Poly body material eliminates the need for undercoating and sprayed on coating inside storage lockers.
- The Poly body material is non-corrosive and is frequently used for storing acids.
- The Poly body material eliminates many possibilities of dissimilar metal contact caused by galvanic reaction.

12.01 Mud Flaps

There are two mud flaps installed behind the rear wheels.

- The mud flaps are ¼ inch thick black rubber.
- The bottom of the mudflaps are fitted with chrome weights.

SECTION 13: PUMP AND PLUMBING

13.00 Pump House

- Side Control Pump House

The pump compartment features:

- The superstructure frame is made from .125” wall X 2.00” square type aluminum tubing.
- The front and a portion of the rear of the pump compartment is made from aluminum tread plate sheets to enclose the perimeter of the water pump.
- There will be two (2) horizontal grab rails provided, one on each side, above the pump control panels.
- The street and curb sides of the pump compartment are equipped with side running boards. The running boards extend along the width of the pump compartment from the rear of the chassis cab to the forward end of the body module.
- Pump side panels are covered with black protective material.
- Running boards include extruded aluminum rub rail extending the length of the running boards.
- The step surfaces comply to applicable sections of NFPA 1901 requirements.
- A safety sign FAMA25, which warns of the need for training prior to operating the apparatus, shall be located on the pump operator’s panel.

13.03 PTO Driven Pump

PTO Pumps have the following standard features:

- All PTO driven pumps have pump-and-roll capability.

- Helical design and precision-cut gears to reduce noise and minimize wear.
- Double seal ring design solid bronze impeller
- Stainless-steel pump shaft
- Maintenance free mechanical seal
- The street and curb side pump panels and access doors are constructed entirely of aluminum and be covered with black protective material.
- The pump compartment has full width vertically hinged access doors located on the upper portion of the street and curb side pump compartment.
- A latch is furnished to hold the doors closed and have a retainer attached to prevent over extension of the opened door.
- The pump operator panels are to be completely "bolted" or hinged in place for ease of removal.
- A full panel width LED light hood is provided to illuminate the street and curb side pump panels.
- A service light is provided to illuminate the interior of the pump compartment. Lights are controlled by the operator's panel light switch.
- The operator's panel include the following gauges:
- 2 1/2" 400# liquid filled stainless-steel individual discharge pressure gauges and control handles.
- One (1) 3 1/2” Master Discharge Gauge and one (1) 3 1/2” Master Pump intake gauge.
- Color-coded pump panel identification labels are provided for all gauges, controls, connections, switches, inlets, and outlets.
- The intakes have a removable strainer provided and chrome plated caps.
- Pump shift is electric operated and incorporates standard automotive shifting mechanism for ease of maintenance.
- The pump engage switch is mounted in the cab Multiplex screen and on the pump panel’s Smart Touch Switch Module. Identified as "Engage Pump". The pump engage indicator includes a light to show when the PTO has been engaged and is OK to Pump.
- A test plate shall be provided at the pump operator's panel that gives the rated discharges and pressures together with the speed of the engine as determined by the certification test for each unit, the position of the parallel/series pump as used, and the governed speed of the engine as stated by the engine manufacturer on a certified brake horsepower curve.
- The test label shall be completely stamped with all information at the factory and attached to the vehicle prior to shipping.
- A master manifold type drain valve is provided with all pump drains connected to it and operate from the pump operators panel, so the entire pump system may be drained by a single control.
- A master manifold type drain valve is provided with all pump drains connected to it and operate from the pump operators panel, so the entire pump system may be drained by a single control.
- Per NFPA 1901 standards there shall be pump system test ports mounted on the pump panel.
- All discharges and pre-connects with a 1 ½” or larger valve, per NFPA 1901 standards, shall have drains or bleeder valves, having a minimum ¾” pipe thread connection, for bleeding off pressure from the hose connection to the outlet.

- Per NFPA 1901 standards there shall be a suction relief valve installed on the intake sides of the pump, terminated with a NST male threads.
- The pump will have at minimum of two (2) sacrificial anodes included.

13.03.05 Darley LSP 1000 PTO Pump

All the plumbing and/or piping in the pump compartment will be constructed of 304 stainless-steel or flexible piping for long life. All NPT pipe thread connections larger than ¾" connections are avoided in the construction of the plumbing system. The following valves shall have groove connection: rear discharge, tank fill, all 2" and 2-½" pre-connect valves.

Pump Ratings:
1000 GPM @ 150 PSI
700 GPM @ 200 PSI
500 GPM @ 250 PSI

13.03.05.01 Darley LSP 1000 PTO, Side Control, 36" Pumphouse

13.03.25 PTO Auto Governor Options

13.03.25.01 Fire Research "Pump Boss 400 Series Auto Governor"

- Features:
  - Discharge pressure in PSI.
  - Pump adjustment back idle.
  - Engine monitoring of oil pressure, water temperature, battery voltage, and engine RPM.
  - Preset function for instant and reliable operation.
  - Overheat pump protection system.

13.05 Primer Pump Option

13.05.01 Rotary Vane Primer Pump

The rotary vane primer is a 12-volt electric, positive displacement, rotary vane type, oil-less primer for 20' to 30' suction lifts. Priming system includes a bronze push-pull valve with electric switch.

13.06 Suction Intakes

On all pumps, an intake suction relief shall be provided per NFPA 1901 standards. It will be terminated with a 2 ½" NST male adapter.

13.06.01 2 ½" Gated Intakes

Each intake consists of a 2 ½ " NST female chrome plated swivel intake located on the pump panel. The intake has a 2 ½ " valve, swivel adapter with screen, chrome plated plug and chain.

13.06.01.01 One (1) intake, street side

13.06.02 Non-Gated Master Intakes

Master intakes are plumbed out both sides of the pump house and capped with a chrome long handled cap.

13.06.02.02 Two (2) 5” intakes

13.07 Discharges

Discharges include:

- Tee Handle Control
- 2 ½” 400 PSI Liquid Filled Stainless Pressure Gauge
- 30 Degree Elbow, cap and chain

13.07.01 Side Control Pump Panel Discharges

13.07.01.02 Two (2) 2 ½” Discharge, Street Side

13.07.01.03 One (1) 2 ½” Discharge, Curb Side

13.08.08 Plumbing for Deck Gun

13.08.08.01 Deck Gun Port

Port left accessible for future install of deck gun plumbing. A gauge, valve, and handle are not provided.

13.09 Tank Fill/ Tank to Pump

13.09.01 Tank Fill Valve 2”

A 2" tank fill/pump re-circulating line provided from the pump to the water tank, with a 2" valve and 2" high-pressure flexible hose.

13.09.03 Tank to Pump 3”

A 3” tank to pump line provided from the water tank to the pump, with a 3” valve and tee handle controls, and 4” plumbing with flexible connection with check valve.

13.11 Pump House Heat Control

13.11.07 Pump Compartment Seal

A rubber seal provided between the rear of the pumphouse and the body.

13.12 Pump Certification

13.12.01 MWF Calibration

The pump test shall be certified by a Midwest Fire representative.

SECTION 14: HOSE TRAYS, PRE-CONNECTS AND CROSS LAYS

14.08 Hose Cross Lay

- The hose cross lay provides an area for pre-connected hose cross lays and/or hose storage.
- The cross lay is constructed of a 1” thick polypropylene/polyethylene floor designed to provide drainage and ventilation to the cross lay area.
- Front and rear are constructed of 1/8” aluminum.

14.08.01 Hose cross lay above Side Control Pump

14.09 Pre-connected Cross Lays

- Cross lay is pre-connected via NST swivel male gated with a ball valve.
- Pre-connect has a 2 ½ " 400psi liquid filled stainless-steel individual pressure gauge and control handle. All cross lay pre-connects are foam capable (if equipped) except for LRR.

14.09.02 Two (2) 1 ½ " NST male pre-connects, 2" valve

14.10 Cross Lay Options

14.10.01 Cross Lay Divider

Hose cross lay is equipped with adjustable divider constructed of 1/8" aluminum.

14.10.01.02 Two (2) Cross Lay Dividers

14.10.04 Cross Lay Vinyl Cover

Heavy-duty flame-retardant vinyl cover with mesh ends is supplied and custom fitted to the apparatus cross lay. The cover is attached with shock cord to retain the cover during travel as required by NFPA.

14.10.04.01 Black Cross lay Cover

14.11 Hose Bed

14.11.00 Hose Bed

Hose bed runs the full length and width of the tank. The floor of the hose bed is grooved to allow the loaded hose to drain and provide ventilation. The floor is fabricated from UV stable white polypropylene with inverted T slot are machined into the floor at three points to accommodate adjustable hose dividers.

14.11.00.01 10" Tall Hose Bed Walls

14.11.01 Hose Bed Divider

The hose bed has adjustable divider made from copolymer. The rear of the divider will have slot cut in that can be used for a hand grip.

14.11.01.02 Two (2) dividers

14.11.02 Hose Bed cover

Heavy-duty vinyl hose bed cover is attached across the front of the hose bed with a rail and bead system to prevent wind from getting under the cover, with a flap to cover the back of the hose bed and has a quick release elastic rope to retain the hose in the bed during travel as required by NFPA.

14.11.02.02 Black Hose Bed Cover for 3000

SECTION 15: EQUIPMENT STORAGE AND MOUNTING

15.00 Equipment Mounting Systems

15.00.06 Two (2) trays located on the street side of the tank.

15.00.06.03 Fits 5”-6” Suction Hose.

SECTION 17: CHASSIS ACCESSORIES

17.01 Hub and Lug nut covers

Stainless-steel hub and lug nut covers are installed on front and rear aluminum wheels

17.01.03 Tandem axle chassis.

17.01.03.02 Chassis OEM Install

17.04 Shoreline Connection, Kussmaul Auto Charge Series

One (1) Kussmaul Auto Charge series battery charger system installed.

17.04.02 Auto Charge 1000 PLC, 15-amp, manual plug-in beneath the street side chassis door.

17.08 Air Horns

Two (2) Stutter Tone air horns mounted. Steering wheel horn switch will control the air horns unless specified otherwise.

17.08.00 Two (2) Air Horns installed, one (1) on each side of the hood.

17.08.00.02 Chassis OEM Install

17.08.04 One (1) foot switch located on the passenger side floor

17.08.04.02 Chassis OEM Install

17.10 Chassis Accessories

17.10.01 Tire Pressure Indicators

Tire pressure indicators installed to allow for inspection of pressure at the tire.

17.10.01.02 Tire Pressure Indicator for Tandem Axle Chassis

17.10.04 Heat Exchanger

A Heat exchanger permits the use of water from the pump to cool the engine. Cooling is done without mixing the engine antifreeze and the pump water.

17.10.04.03 Darley Pump

17.11 Chassis Exhaust

17.11.01 Standard Chassis Exhaust Modifications

Chassis exhaust is modified to exit passenger side ahead of the rear wheels and vent outwards from the edge of the body. A heat shield will be fabricated from aluminum and installed between the body and the exhaust pipe. OEM supplied exhaust tip will be used when applicable.

17.11.01.01 Freightliner Exhaust Modifications

SECTION 18: LOOSE EQUIPMENT

Loose equipment required by NFPA not listed will be supplied by customer after delivery of the apparatus prior to being put in service.

18.08 Wheel Chocks

18.08.03 Two (2) Rubber Wheel Chocks, connected by rope, in spare compartment.

18.10 PVC Flexible Hard Suction Hoses

18.10.11 5" x 10', Qty (2)

SECTION 19: CHASSIS

19.00 Midwest Fire supplied chassis per specification attached. Brief summary below:

Chassis Summary			
Manufacturer	Freightliner	Cab to Axle (in.)	160"
Model	M2-106	Wheelbase (in.)	226"
Engine Manufacturer	Cummins	Front Axle Rating (Lbs.)	16,000#
Engine Model	L9	Rear Axle Rating (Lbs.)	44,000#
Horsepower	360	Paint Color Code	L0762EY MED RED ELITE EY

FINAL INSPECTION

The department will take physical possession of the truck and will receive all training on the operation of the truck at the Midwest Fire facility in Luverne, Minnesota during the final inspection/ delivery day. Transportation of the apparatus post final inspection is the responsibility of the department, please ask your representative for options.