

PLATO FIRE DEPARTMENT

Bidder Complies

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GENERAL REQUIREMENTS

A pre-construction meeting will be held at the Plato fire station.

A final inspection trip shall be provided to the manufacturer's facilities. The apparatus manufacturer will cover the cost of transportation, meals and lodging for up to four (4) department personnel.

Delivery of the finished apparatus will be at the Plato fire station. Truck will be driven. No rail truck delivery will be acceptable. The apparatus will also be delivered full of fuel.

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WARRANTY

Bidders shall include complete warranty details with their proposal, the minimum acceptable warranty is Unlimited time on the polypropylene tank, thirty (30) years on the stainless steel frame assembly, thirty (30) years on the stainless steel body and seven (7) years on the exterior paint and finish.

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WATER TANK CAPACITY

The tank shall have a capacity of 2200 U.S. gallons. It shall have a cross section of 53" X 75" and a length of 180" inches.

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TANK CONSTRUCTION AND MOUNTING

The water tank shall be custom built to meet the needs of the fire department. It shall be elliptical in design to benefit from the superior strength and safety of that shape. The material of construction shall be ultra high impact polypropylene copolymer using welded construction.

The use of any other type of tank or material will not be acceptable (no exceptions).

The tank shall be self-supporting and constructed by welding together a series of modules to build the complete tank. Each module shall consist of 3/4" or 1/2" dividers and a 3/8" thick shell together with one longitudinal and one transverse partition to create the baffling system.

To improve the safety of the vehicle by reducing undesired water movement while traveling, the tank will be constructed with a containment baffling system that exceeds current NFPA 1901 recommendations. The containment type baffling system shall include primary transverse partitions and end walls that shall extend down to the bottom of the support sills. Additional partitions shall be placed in an efficient design to minimize water motion and turbulence while traveling. Holes shall be cut to allow both air and water to pass through the baffles to facilitate dumping of the water (no exceptions).

Channel shaped longitudinal sill supports shall be fabricated from 3/4" polypropylene copolymer and

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full extrusion welded to the underside of the barrel as well as the primary transverse partitions and the end walls. Drain holes will be provided at the end of each section.

A fill tower shall be positioned approximately in the center of the tank and have an open area of no less than 480 square inches and shall be 5" above the top of the shell. The fill tower lid shall be hinged on the curbside and shall open towards the streetside of the tank. The lid shall be retained using a pull latch and sealed with a bulb type EPDM gasket. A tether shall be provided to hold the lid in an open position.

An internal overflow and venting system consisting of a 6" diameter polypropylene copolymer pipe shall be provided and fitted into the fill tower. The combination vent/overflow is permanently open to the atmosphere allowing automatic free entry and escape of air while filling or dumping. The overflow shall discharge behind the rear axle per N.F.P.A #1901. The automatic venting feature of this assembly means that the water load can be dumped quickly without any mechanical or manual operation of the vent.

A sump shall be provided on the underside of the tank with a 3" NPTF clean out port and a NPTF tank to pump suction connection. An anti-swirl plate will be provided internally to exclude cavitation during rapid suction. Note: if midship pump then the tank to pump suction connection will be located at the front head of the tank.

A discharge sump shall be provided at the rear of the tank and positioned below the bottom of the shell to allow complete evacuation during dumping. This sump shall be fabricated from 3/4" polypropylene copolymer and accommodate the installation of dump valves.

The tank shall be mounted to the truck chassis utilizing the structural tubular stainless steel body framework. Captive mounting brackets adequately sized for the tank shall be provided to attach the tank to the framework utilizing a cushioned isolator for positive and negative vertical retention. The sub frame will be separated from the chassis frame by a 1" x 3" solid sill cushion of 60 D (durometer) hardness rubber isolator, and attached to the chassis frame using a minimum of six (6) tie downs. The two front and rear tie downs will be "springer" assemblies and the center tie downs shall be firm (no exceptions). All tie down bolts shall be a minimum, 5/8" grade 8 bolts.

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ADDITIONAL 6" VENT/OVERFLOW

An additional 6" diameter vent/overflow pipe shall be provided and shall run through the tank, from the fill tower and exit through the floor of the tank behind the rear axle. This location will not interfere with water flow during dump operations and will minimize traction loss of the rear wheels. The additional vent/overflow system enhances tank fill and dump times for optimum operational functionality.

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TANK EXTERIOR FINISH (WRAPPED)

The exterior of the water tank shall be jacketed with a 20 gauge stainless steel, mirror finish. The front and rear outer heads shall be 16 gauge stainless steel with a #4 finish. All exterior welds will be butt welded, polished and of the highest quality workmanship. There will be 1" insulation between the inner barrel and the outer wrap reducing thermal transfer. For added strength and stability the top

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walk way of the barrel will be reinforced with a section of 16 gauge corrosion resistant sheet curved to conform to the radius of the tank. The area around the fill tower and dump manifold will be trimmed with polished stainless steel in a pleasing manner.

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TANK TOP STEPS

Black grip tape strip steps shall be installed from the ladder to the rear of the tank. These strips will be approximately 4" wide X 16" long and provide for secure safe footing when on top of the tank.

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REAR DUMP SYSTEM

Three (3) #1050-34 manually operated stainless steel 10" Newton quick dumps will be provided at the rear center of the water tank. The rear manifold assembly (fabricated from the same material as the tank) shall be sumped below the bottom edge of the tank assembly to provide 100% of water usage and enhance the flow of the water. One (1) dump valve will face rearward, one (1) to the left and one (1) to the right. The left and right dump valves will be equipped with a #4036-34, manually operated 36" stainless steel telescoping chutes while a 14" polished stainless steel flip chute will be provided for the center dump valve.

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REAR FILL

One (1) 4" stainless steel fill line shall be installed at the rear of the unit. It will be located on the curbside of the rear dump assembly. It shall be equipped with a South Park #BV78H-41AH, 4" NPTF (rigid) X 4" NSTM, 5" valve, black hand wheel, butterfly valve with individual 1/4-turn drain valve. One (1) 4" NSTF x 4" Storz adaptor shall be provided on the rear fill. A 4" Storz x 2-1/2" NSTF swivel with plug and chain shall also be provided on the rear fill.

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APPARATUS BODY AND CONSTRUCTION

The entire body is designed to be independent of the chassis frame and water tank so it can be removed at some later date if required. A body sub-framework will be built and tied down to the chassis frame. The body sections will be welded to the framework forming a single integrated unit that is engineered to withstand the demands of the Fire Service.

The body side panels and catwalks will be 14 gauge stainless steel attached to the subframe by stainless steel tig welding. The side panels will contour around the rear wheels in such a manner to give a pleasing appearance.

Wheel well liners of 3/16" thick vacuum formed ABS composite will be incorporated into the side panels. They will be full depth and height and form a complete seal with the outside skirting. They will be mounted by use of 1/4" stainless steel bolts with lock washers drilled and tapped into stainless

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steel mounting brackets.

The rear end panel will be welded to the side panels and bolted to the rear subframe cross member using stainless steel 3/8" bolts.

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FENDERETTES (STAINLESS STEEL)

Polished stainless steel fenderettes are to be installed around the wheel well openings using a black reinforced vinyl trim and 1/4" stainless steel bolts with lock washers drilled and tapped into the body.

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REAR PLATFORM

A 24" rear platform will be furnished and will be integral to the body construction. It will be equipped with open grip grating. It will have beavertail supports on the ends, of not less than 2" angle and cross bracing of 2" channel. Mirror finish stainless trim protectors will be provided on the rearmost edge of each beavertail support.

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COMPARTMENTATION (AHEAD OF REAR WHEELS)

Two (2) compartments of 16 gauge stainless steel will be installed, one (1) on each side of the body, in front of the rear wheels. The approximate inside dimensions will be 27" deep X 37-1/2" high X 72" wide.

The compartments will be "sweep out" design and assembled by use of stainless steel welding. They will be fully welded on the seams to assure a nice fit and to keep the elements from entering.

Each compartment shall be properly vented.

COMPARTMENT SUPPORTS:

The compartments shall be supported on both ends and from underneath. Brackets from 2" X 2" stainless steel tubing will be fabricated and welded to the body framework. A 2" X 2" stainless steel tube crossmember will be welded between the brackets and bolted to the floor of the compartment. The front side will be fixed to the body frame by means of a tig welded bracket and the rear will be bolted to an extended frame crossmember.

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COMPARTMENTATION (BEHIND REAR WHEELS)

Two (2) compartments of 16 gauge stainless steel will be installed, one (1) on each side of the body, behind the rear wheels. The approximate inside dimensions will be 27" deep streetside / 20" deep curbside X 37-1/2" high X 32" wide.

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The compartments will be "sweep out" design and assembled by use of stainless steel welding. They will be fully welded on the seams to assure a nice fit and to keep the elements from entering.

Each compartment shall be properly vented.

COMPARTMENT SUPPORTS:

The compartments shall be supported on both ends and from underneath. Brackets from 2" X 2" stainless steel tubing will be fabricated and welded to the body framework. A 2" X 2" stainless steel tube crossmember will be welded between the brackets and bolted to the floor of the compartment. The front side will be fixed to the body frame by means of a tig welded bracket and the rear will be bolted to an extended frame crossmember.

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REAR COMPARTMENT (BETWEEN FRAME RAILS)

One (1) compartment shall be fabricated and installed at the rear of the apparatus. It shall be located below the rear tow eye and be as large as space permits between the chassis frame rails. The compartment will be provided with a polished stainless steel door equipped with a stainless steel hinge and latch assembly. The rear door shall be chevron striped to match the chevron striping on the lower rear body panel.

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COMPARTMENT DOORS

All compartment doors will be ROM brand roll-up style. The exterior of the doors shall remain a flat anodized aluminum finish.

Roll-ups to include a double wall aluminum box section slats with integral hinge joint and recessed slate seal, reusable endshoes with snap-in securement, double wall aluminum reinforced bottom rail with a stainless steel lift bar, aluminum track with side frame, sill plate, and top gutter with non-marring top seal, side seals, bottom seal, with all wear component material to be type 6 nylon.

The aluminum box section shall have a flat interior surface to prevent equipment hang-up. A face depth of 1.0 inches and a wall thickness of 0.045 inches. Each slat shall incorporate a recessed slat seal as to weatherproof the compartment and reduce rattle between the slats.

For every inch of height on an integral continuous hinge joint shall span the width of the door to provide superior strength.

The door shall glide on non-interlocked endshoes. Each endshoe shall be independent and positively secured by a snap-in device. Door slats shall be easily removed and replaced when required.

The stainless steel lift bar shall keep the door securely closed.

The ware components shall be constructed from type 6 nylon to provide maximum strength and durability. The type 6 nylon is a naturally lubricating material which provides exceptional temperature characteristics.

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COMPARTMENT DECKING

Black "Turtle Tile" decking shall be installed in each compartment.

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COMPARTMENT DECKING EDGE

The "Turtle Tile" decking shall have a 2" deep black tapered edge between the compartment door and the front edge of the decking. This will allow equipment to be easily removed and put back without catching the edge.

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BODY COSMETICS

The area above the storage and hard hose compartments will be clad with polished aluminum diamond plate. The outer edge will be broke twice. Once at a downward angle of 90 degrees in order to protect the outer compartment edges, and then broke out at approximately 45 degrees to serve as a drip rail for the compartments.

The front outer face of the compartments shall be clad with polished aluminum diamond plate.

All tread plate used will be fastened with stainless steel screws and nylon washers.

A 1/4" X 2" #4 finished polished stainless steel rub rail shall be installed along the bottom of the compartments and skirting on both sides. The rub rail shall have chamfered edges for increased appeal, style, and cleanability. The rub rail shall have tapered ends at the front and rear of the apparatus body and at the wheel well openings. The rub rail shall be fastened with stainless steel bolts and held away from the body with rubber spacers. It shall be easily removable if replacement becomes necessary.

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LADDER FOR TANK

To reach the top of the tank and allow access to the manhole, a stainless steel ladder will be furnished on the front streetside of the apparatus from the skirting to the top of the tank. It will be positioned at the front end of the tank to allow room for equipment to be installed along the rest of the skirting. All rungs will be knurled for added safety.

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FOLDING STEPS

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One (1) heavy-duty, folding helper step shall be provided on the front face of the driver's side and passenger side compartments. The steps will be chrome-plated and have a minimum 42 square inch serrated stepping surface. The steps shall be fastened with stainless steel bolts with nylon lock nuts and reinforced with backing plates.

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ZICO PORTA-TANK RACK

One (1) Zico portable tank "Quick Lift System" shall be installed on the apparatus and shall be of the electric actuated tilt down style. It shall be mounted on top of the curbside skirting. The tank rack shall be sized to accept a "3000" gallon Fol-Da-Tank.

A weatherproof momentary contact switch control shall be flush mounted in a suitable location which shall provide the operator full travel view of the portable tank to and/or from, the stored position.

The Zico rack system shall be tied into the "hazard light" system to prevent the portable tank rack from deploying if an open door, side dump valve, etc., would create a conflict or hazard and to activate the "hazard light" warning system if the rack is in the "deployed" position and the parking brake is released.

Per NFPA standard #1901 recommendations, the portable tank rack shall be provided with front and rear mounted flashing warning lights that will flash when the rack is moving and in the "deployed" position. A reflective stripe shall be positioned at each end of the rack.

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PAINTED ALUMINUM COVER

A .090" aluminum cover shall be fabricated and installed on the outside of the Zico porta-tank rack. It will be painted to match the body color.

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PAINT PROCEDURE

All metal surfaces on the apparatus body shall be cleaned and prepared for painting. Every imperfection shall be removed or filled and then the entire surface(s) that are to be painted shall be etched and sanded smooth. All seams shall be sealed before painting.

To ensure proper adhesion of the coatings to the stainless steel it shall be chemically cleaned to remove all dirt, oil, grease and metal oxides.

A two (2) part epoxy primer/surfacer shall be applied to the cleaned metal surfaces to provide a strong corrosion resistant base coat and to smooth out the surface(s).

The primer coats shall be sanded to an extremely smooth finish before the sealer coat and paint are applied.

Before painting, the entire area that is to be painted shall be tacked off to remove any and all dust

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particles. Acrylic urethane paint is then applied in multiple coats until uniform color coverage is achieved, followed by two (2) coats of urethane clear.

After drying, the entire painted surface(s) shall be wet sanded to remove any imperfections in clear coat and machine buffed for a smooth and pleasing appearance.

All removable items such as compartment doors, hinges, trim, bracketry, etc., shall be removed and painted separately to insure complete paint coverage behind all mounted items.

: Roll-up doors are not to be painted and shall remain a natural aluminum finish, unless called out in the roll-up door section.

All trim pieces mounted to the apparatus shall be de-burred to eliminate any sharp cutting edges.

The insides of the compartments, rear end panel and the tank shall not be painted, but the exterior of the apparatus body (sides) shall be painted the same color as the chassis. The interior of the cabinets and the rear end panel will be a polished #4 satin finish.

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TOUCH-UP PAINT & ASSORTED FASTENERS

A two (2) ounce container with applicator brush of touch-up paint shall be supplied for each color of the finished apparatus body color. This touch-up paint shall be delivered with the apparatus at the time of delivery and include the paint make and number for future reference.

A bag of assorted stainless steel fasteners used in the construction of the apparatus shall be provided to the purchaser at the time of delivery and acceptance of the completed apparatus.

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ANTI-CORROSION PROTECTION

The design of the apparatus body is such that the association of different metals is minimized. Where it is unavoidable an anti-corrosion coating is used between the two metals.

The anti-corrosion material is a dispersion of metallic zinc in a mobile vehicle designed to prevent corrosion caused by electrolysis between the two metals.

When stainless steel screws pass through aluminum they will be treated with the anti-corrosion coating to prevent the onset of electrolysis.

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STAINLESS STEEL WHEEL SIMULATORS

Four (4) polished stainless steel wheel simulators shall be provided and installed over the chassis's existing wheels. They shall be equipped with polished lug nut covers and Lincoln caps.

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TIRE PRESSURE INDICATORS

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

Y__N__

N.F.P.A. STRIPING

In accordance with the guidelines of NFPA Pamphlet #1901-2009 edition, a retroreflective stripe(s) shall be affixed to at least 50% of the cab and body length on each side (excluding pump panel areas), and at least 25% of the width of the front of the apparatus.

The striping shall be 6" wide with a 1" tracer stripe on top. Striping to match department's existing apparatus.

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N.F.P.A. STRIPING COLOR

The reflective stripe(s) shall be **WHITE** in color.

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LETTERING

The apparatus shall be lettered with Leo's White style lettering with black outline and shadow. The lettering shall be of a style and script comparable to the department's existing apparatus.

"PLATO FIRE DEPT." shall be provided on each cab door.

"No 435" shall be provided on the front fenders, each side.

"Serving the Townships of Bergen, Camden, Helen, Young America and The City of Plato" shall be provided on both sides of the apparatus, behind the rear wheels. Exact location will be determined at the pre-construction meeting.

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CHEVRON STRIPING

Chevron striping shall be provided and installed at the rear of the apparatus, lower body panel only. Striping will be 6" wide red/fluorescent yellow green diamond grade reflective and installed in an inverted "V" pattern.

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CHASSIS MODIFICATIONS

If chassis cab is equipped with an ignition key it shall be permanently attached to the chassis cab dash per N.F.P.A. codes.

All NFPA pamphlet #1901-2009 warning and information placards shall be provided and installed.

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EXHAUST MODIFICATIONS (FACTORY)

The chassis exhaust system shall be left as it comes from the chassis manufacturer.

Y__N__

MUD FLAPS

Black rubber mud flaps, with Manufacturer's logo, shall be provided and installed behind the rear wheels.

Y__N__

FUEL TANK ENCLOSURE

The fuel tank and entrance steps will be clad with polished aluminum diamond plate. This will be done in a manner which is both safe and practical. The polished aluminum diamond plate should add to the appearance, not distract from it. All step areas shall be punched and formed raised surfaces for a positive skid resistant surface.

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BATTERY BOX ENCLOSURE

The battery box and entrance steps will be clad with polished aluminum diamond plate. This will be done in a manner which is both safe and practical. The polished aluminum diamond plate should add to the appearance, not distract from it. All step areas shall be punched and formed raised surfaces for a positive skid resistant surface.

Y__N__

TOW EYE

A 3/4" x 6" single painted rear tow eye will be installed at the rear of the unit, under the rear dump and attached directly to the chassis frame. It shall be surrounded by a rubber boot and trimmed with a 16 gauge stainless steel frame assembly.

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ELECTRICAL SYSTEM

The apparatus shall be equipped with a Diamond Logic™ Management System for controlling electrical system devices. This management system shall be capable of performing load management functions and be fully programmable.

The Diamond Logic™ system shall utilize a Controller Area Network to provide control signals for "real time" operation. The system will consist of a Universal System Manager (USM), Power Distribution Module(s) (PDM), and Input Switch Module(s) that communicate with the USM. The functional switches will be located conveniently in the cab dash.

All insulated wiring shall be high temperature GXL or GPT type, in conformance with SAE J 1128 and shall be protected by an oil and temperature loom where possible. Individual wires will be protected by color and numerically coded insulation. All wire end terminals, including locking bulkhead connectors, shall be mechanically fixed to the wire ends by terminal crimping tools.

The electrical system will incorporate a master battery disconnect switch which will be mounted separately from the switch panel (next to the driver's seat). A green battery indicator light will be provided in the chassis cab visible to the driver to indicate when it is in the "on" position. When "off" the batteries will remain connected to the starter but all the power will be off to the rest of the unit.

All electrical and electronic components shall be selected and installed to minimize electrical loads and comply with NFPA #1901 (2009 revision) standards along with testing procedures as described below:

The following tests shall be performed in this order. Before each test, the batteries shall be fully charged until the voltage stabilizes at the voltage regulator set point and the lowest charge current is maintained for 10 minutes.

TEST #1. RESERVE CAPACITY TEST:

The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged.

The engine shall be shut off and the minimum continuous electrical load shall be activated for 10 minutes.

All electrical loads shall be turned off prior to attempting to restart the engine.

The battery system shall then be capable of restarting the engine.

Failure to restart the engine shall be considered a test failure.

TEST #2. ALTERNATOR PERFORMANCE TEST AT IDLE:

The minimum continuous electrical load shall be activated with the engine running at idle speed.

The engine temperature shall be stabilized at normal operating temperature.

The battery system shall be tested to detect the presence of a battery discharge current.

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The detection of battery discharge current shall be considered a test failure.

TEST #3. ALTERNATOR PERFORMANCE TEST AT FULL LOAD:

The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed.

The test duration shall be a minimum of 2 hours.

Activation of the load management system shall be permitted during this test.

An alarm sounded by excessive battery discharge, as detected by the system, or a system voltage of less than 11.8 V dc for a 12 V nominal system or 23.6 V dc for a 24 V nominal system, for more than 120 seconds, shall be considered a test failure.

TEST #4. LOW VOLTAGE ALARM TEST:

Following completion of the above tests, the engine shall be shut off.

With the engine shut off, the total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates.

The battery voltage shall be measured at the battery terminals.

The test shall be considered a failure if the alarm has not yet sounded 140 seconds after voltage drops to 11.7 V for a 12 V nominal system or 23.4 V for a 24 V nominal system.

The battery system shall then be able to restart the engine.

Failure to restart the engine shall be considered a test failure.

At the time of delivery, documentation shall be provided with the following information:

- (1) Documentation of the electrical system performance tests.
- (2) A written load analysis, including the following:
 - (a) The nameplate rating of the alternator
 - (b) The alternator rating under the conditions specified in NFPA 13.3.2
 - (c) Each of the component loads specified in 13.3.3 that make up the minimum continuous electrical load
 - (d) Additional electrical loads that, when added to the minimum continuous electrical load, determine the total continuous electrical load
 - (e) Each individual intermittent electrical load

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VEHICLE DATA RECORDER

The apparatus shall be equipped with a Weldon, Vehicle Data Recorder (VDR) that collects essential data for department training needs.

PRODUCT FEATURES:

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- Recorded Data Includes: Vehicle Speed, Acceleration, Deceleration, Engine Speed, Engine Throttle Position, ABS Event, Seat Occupied Status, Seat Belt Status, Master Optical Warning Switch, Park Brake, Service Brake, Time, Date and Engine Hours.
- Password Protected by the customer
- Six (6) seat position inputs for occupied and belts buckled. Additional six (6) seat expansion module available (p/n 6020-0000-00)
- Easily interfaces with traditional wiring, V-MUX™ or other multiplexing systems
- Data is extracted by a standard, mini USB cable
- Use in conjunction with the Occupant Restraint Indicator or V-MUX™ multiplex system

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SEAT BELT WARNING SYSTEM

The apparatus shall be equipped with a Weldon, Occupant Restraint Indicator system to alert driver and officer where restraints of occupied seats are properly fastened keeping personnel safe.

PRODUCT FEATURES:

- Low profile, compact size
- Supports commercial and custom cab seating layouts; up to 12 seats
- Dimming feature adjusts indicator intensity to synchronize with dash lights
- Built-in audible alarm
- Standard 4 year warranty
- Use in conjunction with Vehicle Data Recorder (VDR)

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CAB DASH

The rocker switch panels, electronic siren and required N.F.P.A. warning lights shall all be located within the chassis cab dash area, placed where applicable.

Y__N__

ELECTRICAL SYSTEM SCHEMATICS

Two (2) complete electrical system schematics diagramming each individual circuit shall be provided upon delivery of the apparatus.

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ROCKER SWITCH PANEL

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A rocker type switch panel with a "Master switch" and individual switches will be installed to provide the ability to de-activate individual lighting units, should the driver/officer require it. This panel will be lettered and lighted and conveniently mounted in the cab.

Y__N__

EMI/RFI PROTECTION

Apparatus design and construction shall incorporate the latest designs in incorporating Electromagnetic Interference Suppression, which is required to satisfy the radiation limits specified in SAE (Standard for Automotive Excellence) J551, "Performance Levels and Methods of Measurement of Electromagnetic Radiation from vehicles and devices (30-1000 MHz), and of which has been adopted by NFPA 1901. System design and components used shall insure that radiated and conducted electromagnetic interference (EMI) and radio frequency interference (RFI) emissions are suppressed at the source.

The apparatus proposed shall have the ability to operate in the electromagnetic environment typically found in fire ground operations.

EMI/RFI susceptibility shall be controlled by applying immune circuit designs, shielding, twisted pair wiring, and filtering. The electrical system shall be designed for full compatibility with low level control signals and high powered two (2) way radio communication systems. Harness and cable routing shall be given careful attention to minimize the potential for conducting and radiated EMI/RFI susceptibility.

In order to fully prevent radio frequency interference (RFI), the purchaser shall provide a listing of the type, power output, and frequencies of all radio and bio medical equipment that is proposed to be used on the apparatus.

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WARNING SYSTEMS

Clearance/Marker/Identification lights and reflectors will be installed according to DOT regulations.

At the rear of the apparatus three (3) red mini LED marker lights will be installed in the rear light bracket with one on the center line and the lights spaced 6"-12" apart. Red LED combination reflector/marker lights will be surface mounted in the lower rear side body section using shock absorbing rubber grommets.

Red reflectors will be installed on the rear tailboard as far apart as possible. The front (amber) reflectors will be incorporated in the turn signals and midpoint amber reflectors will be installed on each side of the body.

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STOP/TURN/BACK-UP LIGHTS

Stop-Tail Light(s):

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Two (2) Whelen #600 series, red LED stop-tail lights shall be mounted, one (1) each side at the rear of the apparatus.

Directional Light(s):

Two (2) Whelen #600 series, amber LED directional lights shall be mounted, one (1) each side at the rear of the apparatus.

Back-Up Light(s):

Two (2) Whelen #600 series, clear LED back-up lights shall be mounted, one (1) each side at the rear of the apparatus and wired to the reverse gear.

The above lights shall be housed in Whelen #PLAST4V, chrome plated housings.

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BACK-UP ALARM

One (1) back-up alarm shall be installed and wired to the reverse gear. It shall meet the Type D (87 db) minimum requirements of SAE J994 and NFPA 1901.

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HAZARD LIGHT

A red flashing LED light, located in the driving compartment, shall be illuminated automatically whenever the apparatus's parking brake is not fully engaged and any of the following conditions exist:

- (1) Any passenger or equipment compartment door is open.
- (2) Any ladder or equipment rack is not in the stowed position.
- (3) Powered light tower is extended (if applicable).
- (4) Any other device is opened, extended, or deployed that creates a hazard or is likely to cause damage to the apparatus if the apparatus is moved.

The light shall be marked "**DO NOT MOVE APPARATUS WHEN LIGHT IS ON**".

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ELECTRONIC SIREN

A Whelen #295SLSA1, electronic siren shall be provided and located in a location convenient to the driver and officer. The siren shall include Radio Rebroadcast, Public Address, Manual, Wail, Yelp, Air horn and Piercer Tones. A pre-wired noise cancelling microphone shall be supplied on the siren head.

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SPEAKER

One (1) Whelen #SA315P, 100 watt speaker shall be provided and installed at the front of the

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apparatus, in the front bumper assembly.

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REAR SCENE LIGHTS

Two (2) Whelen #90E000ZB, 8-32 degree opti-scene lights will be mounted one (1) each side, at the rear of the apparatus, in the upper rear light manifold. They will be wired to the reverse gear and be used with the back-up lights. There will be an override switch located on the rocker switch panel in the cab to activate the rear scene lights when the unit is not in the reverse gear.

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SIDE SCENE LIGHT (FRONT)

One (1) Whelen #90F000CB, scene light, mounted on the front upper streetside corner of the water tank assembly will be provided and controlled from the master console in the cab. This light will be mounted on 26 degree stainless steel light pedestal and will be fully enclosed so as not to expose wiring.

Y__N__

SIDE SCENE LIGHTS (REAR)

Two (2) Whelen #90F000CB scene lights, mounted one (1) at each rear upper corner of the water tank assembly will be provided. These lights will be mounted on the rear light bracket at a 26 degree angle and will be fully enclosed so as not to expose wiring. They will be wired to the reverse gear and be used with the back-up lights. There will be an override switch located on the rocker switch panel in the cab to activate the rear side scene lights when the unit is not in the reverse gear

Y__N__

GROUND/STEP LIGHTS

Four (4) clear LED underbody lights shall be supplied to provide illumination on the ground in areas designed for personnel to climb onto the apparatus. The lights will be controlled automatically by use of the chassis parking brake.

The lights shall be positioned as follows:

- : Two (2) lights will be installed under the side compartments, one (1) each side.
- : Two (2) lights will be installed under the rear tailboard assembly, one (1) each side.

All of these lights shall be mounted so as to be fully enclosed and not to expose any wiring.

Y__N__

REAR PLATFORM WORK LIGHTS

PLATO FIRE DEPARTMENT

Bidder Complies

Two (2) 4" clear LED lights will be mounted in the rear beaver tail assembly pointing towards the center over the rear tailboard area as "work lights". The lights will be activated when the parking brake is set.

Y__N__

CAB ENTRY/EXIT LIGHTING

One (1) clear LED light shall be mounted beneath each door. These lights shall be mounted on an approximate 30 degree angle to provide illumination on areas under the driver and crew riding area exits. All cab entry/exit lights will automatically activate when any of the chassis doors are opened.

Y__N__

STEP LIGHTS

Two (2) clear LED step lights shall be provided and installed on the front face of the front compartments, one (1) each side. These lights will be activated with the park brake switch.

Y__N__

COMPARTMENT LIGHTING

The side body compartments will have LED strip (rope) lighting installed down one side and across the top of each compartment. The lights shall activate automatically when a compartment door is opened.

Y__N__

ENGINE COMPARTMENT LIGHT

One (1) switched light shall be provided and installed inside the engine compartment. This is to provide lighting for vehicle maintenance.

Y__N__

AIR HORNS

One (1) pair of emergency air horns shall be supplied and installed one (1) each side of the chassis cab hood assembly. The air horns shall be mounted with the manufacturer supplied mounting brackets.

Y__N__

AIR HORN ACTIVATION

PLATO FIRE DEPARTMENT

Bidder Complies

The air horns shall be activated by a button in the steering wheel for the driver and by a dash switch for the officer.

Y__N__

AIR PROTECTION VALVE

An air pressure protection valve shall be installed which prevents the use of air horns or other air operated accessories when the brake system air pressure drops below 80 psi, per NFPA standards.

Y__N__

AIR COMPRESSOR / BATTERY CHARGER

A Kussmaul Pump Plus 1200, 120v air compressor / battery charger equipped with a remote LED display repeating the charger readout will be installed to maintain the apparatus's batteries and air tanks while the truck is not in use. A super auto eject receptacle shall be included to release the plug automatically upon energizing of the starter solenoid. The receptacle shall installed beneath the driver's door and be protected by a weatherproof spring loaded cover plate.

Y__N__

WATER LEVEL GAUGE - CLASS 1 (REAR)

A Class 1 "Intelli-Tank" level system for water shall be provided and installed at the rear of the tank (above the quick dump). The display features wide angle viewing and four ultra bright LED's for high visibility even in direct sunlight. The system uses a pressure transducer which shall be mounted into the wall of the tank.

Y__N__

WATER LEVEL GAUGE - CLASS 1 (PUMP PANEL)

An additional Class 1 "Intelli-Tank" display shall monitor the water tank level and shall be mounted on the driver's side pump operator's panel.

Y__N__

NFPA CERTIFIED LIGHTING REQUIREMENTS

The optical warning system on the fire apparatus shall be capable of two (2) separate signaling modes during emergency operations. The first mode shall signal to drivers and pedestrians that the apparatus is responding to an emergency and is **CALLING** for the "Right-Of-Way". The second mode shall signal that the apparatus is stopped and is **BLOCKING** the "Right-Of-Way".

The switching between modes shall be provided by a sensor that senses the position of a parking brake or the park position of an automatic transmission. When the master optical warning system switch is closed, and the parking brake is released or the automatic transmission is not in park, the

PLATO FIRE DEPARTMENT

Bidder Complies

warning devices signaling the call for Right-Of-Way shall be energized. When the master optical warning system is closed, and the parking brake is on or the automatic transmission is in park, the warning devices signaling the blockage of the Right-Of-Way shall be energized. The system shall be permitted to have a method of modifying the two signaling modes.

Y__N__

WHELEN - NFPA CERTIFIED LED LIGHTING PACKAGE

ZONE A UPPER

One (1) Whelen #FN60VLED, 60" NFPA Edge Ultra Freedom LED light bar is to be mounted on the cab roof. As required by N.F.P.A. Pamphlet #1901, the clear sections will automatically turn off when the blocking right-of-way mode.

ZONE A LOWER

Two (2) Whelen #60R02FCR, 600 series, red Super-LED warning lights with chrome flanges shall be mounted in the chassis grill, one (1) each side. They shall be installed with stainless steel backing plates.

ZONE B LOWER

Three (3) Whelen #60R02FCR, 600 series, red Super-LED warning lights with chrome flanges shall be affixed, one (1) between the front wheel and the front of the vehicle, one (1) in front of the rear wheels (mid-body area) and one (1) to the side body panels, behind the rear wheels.

ZONE C UPPER

Two (2) Whelen #FNMINI, 24" mini Freedom Super-LED light bars shall be provided on light pedestals, one (1) each side, at the upper rear sides of the apparatus. The light pedestals will be fully enclosed so as not to expose wiring.

ZONE C LOWER

Two (2) Whelen #60R02FCR, 600 series, red Super-LED warning lights shall be affixed, one (1) each side, to the rear of the apparatus.

ZONE D LOWER

Three (3) Whelen #60R02FCR, 600 series, red Super-LED warning lights with chrome flanges shall be affixed, one (1) between the front wheel and the front of the vehicle, one (1) in front of the rear wheels (mid-body area) and one (1) to the side body panels, behind the rear wheels.

Y__N__

OUTLET

A duplex household type receptacle shall be provided and installed under the passenger seat.

PLATO FIRE DEPARTMENT

Bidder Complies

Y__N__

PUMP SECTION

Y__N__

DARLEY - HM PTO PUMP

The pump shall be a 500 G.P.M. single-stage power takeoff (PTO) booster pump of modern centrifugal design built to meet the following performance:

- 100 percent of the rated capacity at 150 PSI
- 100 percent of the rated capacity at 165 PSI
- 70 percent of the rated capacity at 200 PSI
- 50 percent of the rated capacity at 250 PSI

The entire pump shall be manufactured and tested at the pump manufacturer's factory and supplied with a 4-hour certified test sheet.

The pump primer shall be U.L. approved and capable of pulling a vacuum through 20 ft. of hard suction hose with lifts up to 10 ft. per requirements of NFPA #1901, under the following conditions.

- (A) An altitude of 2000 ft. above sea level.
- (B) Atmospheric pressure of 29.9 in. HG. (corrected to sea level).
- (C) Water temperature of 60 degree F.
- (D) Suction hose size and lift as indicated in table 7-1.3.1(a).
- (E) Friction and entrance loss in suction hose as given table 7-3.1.1(b).

The pump manufacturer shall certify that the pump is capable of pumping rated capacity at 150 PSI (1035 kPa) net pump pressure at any of the following special conditions when those conditions are specified by the purchaser.

- (A) At an elevation above 2000 Ft. (610 M).
- (B) At lifts higher than those listed in table 7-1.3.1(a) or through more than 20 ft. (6 M) of suction hose or both.

Gear ratio of the pump to be individually engineered for the engine selected. Gears are to be helical, and to be precision-cut from heat-treated alloy steel. Gear face to be a minimum of 1-1/2".

Impeller to be high-strength bronze alloy, accurately balanced and broached to fit splined pump shaft with precision fit. Impeller to be double-suction in order to minimize end thrust.

Pump shaft to be splined to receive broached impeller hub.

The pump shall be furnished with a maintenance free mechanical seal. The mechanical seal shall be a non-contacting, non-wearing dual seal design. The lip seal eliminates leakage on a wet pump while parked on standby. The second seal shall allow a drip rate for cooling and lubrication while pumping.

PLATO FIRE DEPARTMENT

Bidder Complies

Renewable bronze, double-labyrinth, wrap-around seal rings are to be furnished in the pump.

Transmission case to be alloy cast iron of heavy-duty and design, along with an adequate oil reserve capacity designed to maintain low operating temperature. Pumps requiring auxiliary oil coolers are not acceptable. Magnetic drain plug to be provided.

Pump casing-vertically split reversible design. Fine grain alloy cast iron, bronze fitted is standard.

Bearings are to be deep groove, radial-type ball bearings, oversize for long life. Bearings to be protected at all openings from road dirt and water splash with double-lip oil seals.

Pump drive shaft shall be precision-ground, heat-treated alloy steel minimum 1" x 10-spline ends.

Pump casing shall be fine grain nickel alloy cast iron, bronze fitted.

Pump warranty/guarantee to be included with each proposal.

Two (2) shop manuals covering the pump, pump transmission and necessary working parts of the pump shall be provided with the apparatus.

Y__N__

PRIMING PUMP

The priming pump will be a Oil-Less priming system. The priming system provides the ultimate in fast priming, high vacuum performance and reliability without the use of a lubricant. Technologically advanced, environmentally safe, and is self lubricating. There is no oil tank to check, no oil is expelled to the ground. This is a semi-automatic priming system with a single action control valve which simultaneously activates the entire system, ensuring fast, consistent air evacuation. This primer features a totally enclosed motor to prevent dust, dirt, and water from entering.

Y__N__

PTO

One (1) Chelsea or equivalent Power Take-Off unit shall be supplied to connect and power the pump from the transmission.

The "Hot Shift" PTO will allow engaging the pump while the apparatus is moving slowly and engine speed is kept below 800 rpm. After engaging pump, "pump and roll" capability will be available.

Y__N__

ELECTRIC PUMP SHIFT

The pump shift shall be controlled by a switch located on the chassis cab dash.

Y__N__

PLATO FIRE DEPARTMENT

Bidder Complies

SUCTION INLET

A 4" non-gated suction inlet will be located on the streetside of the apparatus. The inlet will have a long handled chrome plated cap and removable strainer.

Y__N__

STREETSIDE DISCHARGE

One (1) 2-1/2" discharge will be installed on the streetside of the apparatus. The discharge valve shall be an Akron 2-1/2", 1/4 turn, full-flow, drop-out, self-locking type and controlled from the pump operator's panel. The 2-1/2" discharge valve shall be gated with easy operating "T" style controls. The 2-1/2" outlet shall be equipped with chrome plated 2-1/2" NSTM, 30 degree droop snoot end and chrome cap and chain.

Y__N__

CURBSIDE DISCHARGE

One (1) 2-1/2" discharge will be installed on the curbside of the apparatus (in the curbside compartment). The discharge valve shall be an Akron 2-1/2", 1/4 turn, full-flow, drop-out, self-locking type and controlled from the pump operator's panel. The 2-1/2" discharge valve shall be gated with easy operating "T" style controls. The 2-1/2" outlet shall be equipped with chrome plated 2-1/2" NSTM, 30 degree droop snoot end with chrome cap and chain.

Y__N__

DRAIN VALVES

A Class 1, 1/4 turn and/or automatic drain valve shall be installed for all 1-1/2" or larger discharges. Cable actuated drains are not acceptable.

Y__N__

MASTER DRAIN

A master drain of rotary type, bronze construction to be provided on the pump. Control for this valve to be located so operator does not have to crawl under the apparatus to operate. Master pump drain control is to be operated from the left side of the apparatus. All pump passages, including relief valve, shall be connected to the master drain. Cable actuated drains are not acceptable.

Y__N__

TANK TO PUMP

One (1) tank to pump line shall be provided and equipped with an Akron 3", 1/4 turn, full flow, ball valve with 4" plumbing from the tank to the valve. The valve shall be controlled from the pump operator's panel.

PLATO FIRE DEPARTMENT

Bidder Complies

A check valve shall be provided in the tank to pump line that prevents unintentional back-filling of the water tank through the line (NFPA #1901).

Y___N___

TANK REFILL

One (1) Akron 2", 1/4 turn, pump to tank valve located on the discharge side of the pump piping to the tank shall be provided. The control handle for the pump to tank valve shall be located on the pump operator's panel.

The valve and pump shall be connected to the tank by use of stainless steel fittings and flexible hose to eliminate stress on the lines.

Y___N___

PUMP PIPING

All piping for the pump assembly will be heavy duty stainless steel or Class 1 reinforced rubber hose.

In order to minimize friction loss only sweep type elbows will be used. Where vibration or chassis flexing may cause damage or loosen piping, victaulic or rubber couplings will be utilized to eliminate this possibility.

Wherever threaded joints are used the sealing compound will be of the non-hardening type to insure ease of removal for repair or replacement of couplings.

All lines will drain through either the master drain valve or will be equipped with individual drain valves. One (1) individual drain valve will be installed for each gated suction or discharge 2-1/2" or larger in size.

The entire pump assembly, including all valves, piping and suction lines will be subjected to a hydrostatic test consisting of both a pressure and a vacuum test. The vacuum test consists of developing a vacuum of 22 in. HG (74.5 kPa) and holding for 5 minutes without losing more than 10 in. of vacuum.

Y___N___

VALVES FOR PUMP OPERATION

All 1" or larger in-line valves will be Akron Brass 8000 series full flow style with stainless steel balls. All in line valves will be controlled by easy operating controls. Controls will be designed and installed to permit easy operation of the valves without distortion along with the ability to be re-adjusted if need be.

All 3" or larger discharge valves will be equipped with a slo-cloz option which hydraulically decelerates the opening and closing of the valve to comply with NFPA Pamphlet #1901 recommendations.

PLATO FIRE DEPARTMENT

Bidder Complies

Valves shall have a ten (10) year warranty.

Y__N__

SUCTION PRESSURE RELIEF VALVE

An Elkhart suction pressure relief valve, preset at 125 PSI, will be installed on the suction side of the pump. The adjustable pressure relief valve will be of cast brass construction and include a stainless steel spring and rubber seat. If the outlet discharges it shall discharge in a manner that will not expose personnel to high pressure water streams. The discharge outlet will be constructed of 2-1/2" piping and be equipped with a 2-1/2" NPTF x 2-1/2" NSTM adapter. The outlet will be labeled "INTAKE PRESSURE RELIEF OUTLET - DO NOT CAP".

Y__N__

PUMP ENCLOSURE "INSIDE COMPARTMENT"

The apparatus shall have a pump panel located in the streetside compartment. The pump panel shall be constructed from .125" (1/8") aluminum and clad with a non glare black vinyl covering.

The pump panel shall be illuminated by the compartment lighting activated by the compartment roll-up door

Y__N__

PUMP HOUSE HEATER

A 12 volt pump house compartment heater shall be installed so as to provide heat to the pump and its components in freezing weather. The unit shall be controlled from a switch located on the pump operator's control panel. The unit shall be a hot water type heater with a 12 volt fan.

Y__N__

PUMP OPERATOR'S PANEL

The following items shall be furnished on the pump operator's panel:

One (1) Class 1, TPG+ Total Pressure Governor.

- Pump Discharge Display
- Pump Intake Display
- Engine RPM Display
- System Voltage Display and Alarm
- Engine Oil Pressure Display and Alarm
- Engine Water Temperature Display and Alarm
- Throttle Ready Indicator Light

One (1) 2-1/2" individual pressure gauge for each 1-1/2" discharge or larger and/or preconnect, 0-400 PSI, fluid filled. Gauges shall be equipped with white face and black lettering.

PLATO FIRE DEPARTMENT

Bidder Complies

One (1) panel gauge heater.

One (1) water level readout indicator.

One (1) set of UL test ports for pressure and vacuum.

One (1) rocker style pump house heater switch with indicator light.

One (1) primer control.

Two (2) discharge controls.

One (1) tank fill / pump bypass valve control.

One (1) tank to pump valve control.

One (1) master drain control.

One (1) WARNING: DEATH OR SERIOUS INJURY MAY OCCUR if proper operating procedures are not followed label.

One (1) pump performance plate.

A highly polished trim plate shall be provided around each discharge port and suction inlet opening to allow accessibility to valves for service and repairs.

Y__N__

PUMP PRESSURE ENGINE GOVERNOR - "TPG+"

A Class 1, "TPG+" Total Pressure Governor Plus will be provided and installed on the pump operator's panel. It is designed to control the engine fuel to maintain a desired pump pressure, or engine speed setting.

Features:

- * Dedicated intake and discharge pressure gauges and RPM display
- * J1939 control plus analog control
- * Check and stop engine indicators
- * One touch engine information:
 - : Battery voltage
 - : Oil pressure and temperature
 - : Coolant temperature
 - : Transmission temperature
 - : Total engine hours
 - : Total pump hours
 - : Fuel rate

When in the "pressure" mode the TPG+ will operate as a pressure sensor (regulating) governor (PSG) eliminating any need for a relief valve on the discharge side of the pump. This feature will be set to operate at 100 psi unless specifically requested by the customer to use another pressure. This setting can be changed by the department at a later date, if desired.

PLATO FIRE DEPARTMENT

Bidder Complies

Y__N__

PANEL GAUGE HEATER

An MC Products, automatic "heater strip" heating system shall be installed for all of the pumps gauges. The strips shall become heated when a sensor on the module reaches 32 degrees F. or below. This allows true pressure gauge readings despite freezing conditions. There is also an automatic red light that shows when the unit is on.

Y__N__

COLOR CODED IDENTIFICATION PLATES

Each control valve, gauge and discharge outlet shall be labeled with a color coded identification plate. For standardization, color coding shall be in accordance with the recommendations of NFPA Pamphlet #1901.

Y__N__

PUMP SAFETY FEATURES

When the apparatus is equipped with an automatic transmission, an interlock board shall be provided to ensure that the pump drive system components are properly engaged in the pumping mode of operation, so that the pumping system can be safely operated from the pump operator's position.

Any control device used in the pumping system power train between the engine and the pump shall be equipped with a means to prevent unintentional movement of the control device from its set position.

A plate indicating the chassis transmission shift selector position to be used for pumping shall be provided in the driving compartment and located so it can be easily read from the driver's position.

Where an automatic transmission is provided and where the pump is driven by a transmission mounted SAE PTO and is used for stationary pumping with the chassis transmission in neutral, or is used for pump and roll with the chassis transmission in any forward or reverse gear:

A:) Two (2) green indicator lights shall be located in the driving compartment. One (1) indicator light shall be energized when the pump drive has been engaged and shall be labeled "**PUMP ENGAGED**". The second light shall be energized when both the pump drive has been engaged and the chassis transmission is in neutral and shall be labeled "**OK TO PUMP**".

B:) One (1) green and one (1) red indicator light on the pump operator's panel shall be provided. The green light shall be energized when both the pump drive has been engaged and the chassis transmission is in neutral. The green light on the pump operator's panel shall be positioned adjacent to and preferably above the throttle control and shall be labeled "**THROTTLE READY**".

Y__N__

PLATO FIRE DEPARTMENT

Bidder Complies

MANUFACTURER'S PUMP TEST

One (1) Manufacturer's Certified Pump Test shall be performed at the manufacturers on site testing facility. The certifications shall give the rated discharge, pressure and the speed of the engine as per NFPA requirements. Results of the test shall be provided in writing to the department upon acceptance of the completed apparatus.

Y__N__

N.F.P.A. TAG REQUIREMENTS

A permanent plate in the driving compartment specifying the quantity and type of the following fluids (when applicable) used in the vehicle:

- (1) Engine oil
- (2) Engine coolant
- (3) Chassis transmission fluid
- (4) Pump transmission lubrication fluid
- (5) Pump priming system fluid, if applicable
- (6) Drive axle(s) lubrication fluid
- (7) Air conditioning refrigerant
- (8) Air conditioning lubrication oil
- (9) Power steering fluid
- (10) Cab tilt mechanism fluid
- (11) Transfer case fluid
- (12) Equipment rack fluid
- (13) CAFS air compressor system lubricant
- (14) Generator system lubricant
- (15) Front tire cold pressure
- (16) Rear tire cold pressure
- (17) Maximum tire speed ratings

An accident prevention sign that states "**OVERALL HEIGHT ___**" **AND LENGTH OF APPARATUS ___**" shall be provided and located in the chassis cab area that is visible to the driver.

An accident prevention sign that states "**GVWR**" shall be provided and located in the chassis cab area that is visible to the driver.

An accident prevention sign that states "**MAXIMUM SEATING CAPACITY "___**" shall be provided and located in the chassis cab in an area that is visible to the driver.

An accident prevention sign that states "**OCCUPANTS MUST BE SEATED AND BELTED WHEN APPARATUS IS IN MOTION**" shall be provided and located in the chassis cab in an area that is visible to each seated position.

An accident prevention sign that states "**DO NOT WEAR HELMET WHILE SEATED**" shall be provided and located in the chassis cab in an area that is visible from each seated position.

One "Final Stage Label" shall be attached to the driver's side door jam. The label shall certify that the complete vehicle conforms to the federal motor vehicle safety standards, which have been previously fully certified by the incomplete vehicle manufacture or by the intermediate vehicle manufacture and have not been affected by the final stage manufacture.

PLATO FIRE DEPARTMENT

Bidder Complies

A warning label that states "**WARNING: DEATH OR SERIOUS INJURY MAY OCCUR if proper operating procedures are not followed. The pump operator and all individuals connecting supply or discharge hoses must be familiar with operator manual, water hydraulics hazards, and component limitations.**" shall be provided and located on the pump operator's panel.

Two (2) accident prevention signs that states "**DANGER: DO NOT RIDE ON REAR STEP WHILE VEHICLE IS IN MOTION DEATH OR SERIOUS INJURY MAY RESULT**" shall be provided and installed one (1) each side at the rear of the apparatus.

Y__N__

NFPA 1901-2009 COMPLIANCE TESTS

VEHICLE STABILITY:

When the fire apparatus is loaded to its estimated in-service weight, the height of the vehicle's center of gravity (CG) shall not exceed 80 percent of the rear axle track width or the vehicle will be equipped with electronic stability control (ESC).

WEIGHT DISTRIBUTION:

When the fire apparatus is loaded to its estimated in-service weight, the front-to-rear weight distribution of the apparatus as defined in Section 12.1 shall be within the limits set by the chassis manufacturer.

The front axle loads shall not be less than the minimum axle loads specified by the chassis manufacturer under full load and all other loading conditions.

LOAD DISTRIBUTION:

Using the information supplied by the purchaser, the apparatus manufacturer shall calculate the load distribution for the apparatus.

The manufacturer shall engineer the fire apparatus to comply with the gross axle weight ratings (GAWR), the overall gross vehicle weight rating (GVWR), and the chassis manufacturer's load balance guidelines.

The fire apparatus, as supplied by the manufacturer, shall have a side-to-side tire load variation of no more than 7 percent of the total tire load for that axle or the limits allowed by the axle or component manufacturer.

Each tire shall be equipped with a visual indicator or monitoring system that indicates tire pressure.

APPARATUS PERFORMANCE:

The apparatus shall meet the requirements of this standard at elevations of 2000 ft (600 m) above sea level.

The apparatus shall meet all the requirements of this standard while stationary on a grade of 6 percent in any direction.

PLATO FIRE DEPARTMENT

Bidder Complies

The apparatus shall meet requirements of this standard in ambient temperature conditions between 32 degrees F (0 degrees C) and 110 degrees F (43 degrees C).

ROADABILITY:

The apparatus, when fully equipped and loaded as defined in Section 12.1, shall be capable of the following performance while on dry, paved roads in good condition:

- (1) From a standing start, the apparatus shall be able to attain a speed of 35 mph (55 km/hr) within 25 seconds on a level road.
- (2) The apparatus shall be able to attain a minimum top speed of 50 mph (80 km/hr) on a level road.
- (3) The apparatus shall be able to maintain a speed of at least 20 mph (30 km/hr) on any grade up to and including 6 percent.

If the combined water tank and foam agent tank capacities exceed 1250 gallons the maximum top speed of the apparatus shall not exceed 60 mph.

SERVICEABILITY:

The apparatus shall be designed so that all the manufacturer's recommended routine maintenance checks of lubricant and fluid levels can be performed by the operator without lifting the cab of a tilt-cab apparatus or without the need for hand tools.

Where special tools are required for routine service on any component of the apparatus, such tools shall be provided with the apparatus.

Apparatus components that interfere with repair or removal of other major components shall be attached with fasteners, such as cap screws and nuts, so that the components can be removed and installed with ordinary hand tools. These components shall not be welded or otherwise permanently secured into place.

ROAD TESTS:

Road tests shall be conducted in accordance with Section 4.17 to verify that the completed apparatus is capable of compliance with Section 4.15.

The tests shall be conducted at a location and in a manner that does not violate local, state or provincial, or federal traffic laws.

The tests shall be conducted on dry, level, paved roads that are in good condition.

The apparatus shall be fully equipped and loaded as required in Section 12.1.

The engine shall not be operated in excess of the maximum governed speed.

Acceleration tests shall consist of two runs in opposite directions over the same route.

The fire apparatus shall attain a speed of 35 mph (55 km/hr) from a standing start within 25 seconds.

PLATO FIRE DEPARTMENT

Bidder Complies

The fire apparatus shall attain a minimum top speed of 50 mph (80 km/hr).

If the apparatus is equipped with an auxiliary braking system, the manufacturer shall road test the system to confirm that the system is functioning as intended by the auxiliary braking system manufacturer.

If the apparatus is equipped with an air brake system, the service brakes shall bring the apparatus, when loaded to its maximum in service weight, to a complete stop from an initial speed of 20 mph (32.2 km/hr), in a distance not exceeding 35 ft (10.7 m) by actual measurement on a paved, level, dry surface road that is free of loose material, oil, or grease.

Y__N__

ADDITIONAL EQUIPMENT - TO BE SUPPLIED

Y__N__

WHEEL CHOCKS (COLLAPSIBLE)

One (1) pair of Zico #SAC-44 collapsible wheel chocks shall be supplied and installed in front of the streetside wheels (under the compartment assembly) complete with mounting brackets.

Y__N__

FOL-DA-TANK

One (1) 3000 gallon, 22 oz., red hypalon, Fol-Da-Tank shall be supplied with the delivery of the apparatus. It shall come equipped with an aluminum frame, two (2) drain sleeves and inside lifting handles.

Y__N__

4-1/2" FIRE HOSE

One (1) 4" x 25' length of yellow rubber fire hose with NST long handle female coupling on one (1) end and a 4" storz coupling on the other end shall be provided and shipped loose.

Y__N__

RADIO

An allotment of \$5,000 dollars shall be provided for radio purchase and installation.