



Arizona Fire Apparatus

Type 6 Specifications

Dated: 7-1-2020

Intent of Specifications

It shall be the intent of these specifications to cover the furnishing and delivery of a complete Type 6 brush truck apparatus to **Arizona Fire Apparatus**. The apparatus shall be equipped as specified as follows in these specifications. These specifications only cover the general construction requirements, equipment, appliances and certain details to finish as to which the successful bidder must conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the successful bidder, who shall be solely responsible for the design and construction of all features. The apparatus proposed by the bidders shall meet the requirements of the National Fire Protection Association (NFPA) as stated in the current edition at the time of construction.

Chassis Modifications

Two-Way Radio Antenna

There shall be a two-way radio antenna installed on the apparatus. The antenna shall be mounted at the headache rack of the body. The antenna shall be customer supplied and delivered with the customer's chassis for installation.

12 Volt Power Wire

There shall be a spare 12-volt wire located in the cab of the apparatus near the electric control console. The wire shall be labeled by the manufacturer and this wire shall be used for radio installation at a later date by the radio installation company.

Aluminum Map Box/Control Console

There shall be a custom designed center control console and map box installed in the cab of the apparatus. The main apparatus electrical panel shall be located within the console with an access panel to ease in access. The panel area in the central area of the console shall be where the emergency switches and controls for accessory items will be located. The map box shall be toward the rear of the console designed with two (2) map slots with the approximate dimensions of 3" wide x 20" long x 12 ¼" deep. The map box and control console shall be constructed from smooth aluminum with a Black Line-X finish.

Battery Conditioner/Charger

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There shall be a Kussmaul Auto Charge 1000 battery charger installed on the vehicle. The battery charger shall keep the batteries at a charged and ready state. The conditioner shall also be wired to the vehicle's shoreline inlet.

Shoreline Inlet/Super Auto Eject

There shall be an electrical shoreline inlet located on the cab near the driver's door area and wired to the vehicles battery conditioner/charger to keep all electrical components at a charged and ready state. This electrical inlet shall be a Kussmaul Super Auto Eject and shall automatically disconnect when the vehicle's starter is activated. The Super Auto Eject is supplied with a completely sealed enclosure around the auto eject components to keep them dry and free from road debris. This increases the life span of the Super Auto Eject.

120-Volt Outlet-Cab

There shall be one (1) 120-volt/15-amp duplex household receptacle located in the cab of the apparatus at the rear of the center console. The outlet shall be plumbed to the shoreline inlet for operation.

Hitch Receiver

There shall be one (1) hitch receiver supplied and installed under the rear tailboard. The receiver shall be supplied with a 2" receiver tube.

There shall also be a seven-prong trailer-wiring plug located at the rear receiver location.

Wheels and Tires (Super Singles)

The wheels shall be constructed of a three-piece forged aluminum 20" high x 10" wide assembly, the bolt pattern shall allow the wheel to flip from front to rear to provide an exact same track front to rear. They shall be powder coated Black, stamped DOT approved. The wheels shall include a three-piece bolt together run flat/bead lock insert. The tires shall be 365/80 R20 22PLY Continental MPT 81 completely mounted and balanced. There shall be a total of five (5) mounted tires and wheels. One mounted tire and wheel shall be provided as a spare. The other four (4) shall be installed on the chassis.

Fenders

The front fenders shall be replaced with a larger radius design that bolt onto the International CV chassis. These wider and larger radius fenders shall allow proper fit for the larger tires. A 3/16" sun fade-resistant, plastic rock guard liner shall also be installed. The fenders shall be painted job color and the liners shall be black.

Bumper

The front bumper of the apparatus chassis shall be removed and replaced with a custom built Buckstop front bumper assembly with brush guard. The Buckstop bumper shall be made specific for the International CV chassis and shall bolt in place and shall have a 2" receiver hitch for removable winch mounting. The bumper will also include a pair of black 6" LED recessed driving lights that produce a flood pattern with 7200-lumens of light. The bumper shall be powder coated black prior to shipment.

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Portable Winch

There shall be a Warn ZEON 10-S Multi-Mount, 10,000lb portable winch supplied with the apparatus upon delivery. The winch shall come with a Hawse fairlead, 100' x 3/8" synthetic rope, and hook. A remote controlled 12' lead will also be supplied for controlling the winch.

There shall be a heavy-duty 12-volt electrical power connection with dust cover located at each receiver location to power the winch.

Mud Flaps

There shall be a set of mud flaps attached to the body at the rear wheel wells to protect the body and the underside of the body from road debris. The mud flaps shall be made from a heavy-duty 3/8" thick rubber material.

Tow Eyes

There shall be a set of tow eyes at the rear of the body that are attached to the frame rails and finish off just above the rear step. The tow eyes shall be made from 3/4" x 4" steel with a 2" x 4" oval eye center. The tow eyes will be finish painted black and the tow eyes shall have stainless steel trim rings around them.

Helmet Security-Customer supplied

Tire Pressure Monitoring System

There shall be a tire pressure monitoring system installed on each of the apparatus wheels to monitor the air pressure in each wheel. The sensor shall be a valve stem mounted device, similar to a valve stem cap, manufactured from chrome plated brass material.

Apparatus Body

Aluminum Flat Rack Body

Headache Rack

There shall be an aluminum headache rack constructed and installed at the front of the apparatus body. The headache rack shall be constructed from aluminum diamond plate and shall incorporate 1/8" aluminum diamond plate from the rear window down and 1/8" expanded aluminum material from the rear window up to protect the back of the cab from being damaged.

The top of the headache rack shall be slightly higher than the apparatus cab and wide enough to allow for the mounting of the light bar.

Anti-Corrosion Protection

No dissimilar metals shall contact each other. All stainless-steel screws shall have a nylon washer under their heads and the threads shall be coated with ECK a non-hardening isolating material. All fasteners shall be stainless steel. No pop rivets shall be used in the construction of the body and or doors. ECK shall also be used behind any and all lights, brackets or equipment mounts. No Exceptions

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Sub Frame

There shall be a sub frame made up of all aluminum structural extrusion electrically welded together for superior strength and U-bolted to the chassis frame.

Between the sub frame and the frame rails there shall be a ½" x 3" layer of fiber reinforced rubber of 60D hardness to separate the two dissimilar metals. The rubber is to prevent any electrolysis between the two dissimilar metals. The backbone of the sub frame shall be made of 3" x ¼" wall extruded aluminum channel with 1" flanges. There shall be 3" x ¼" wall channel with 1" flanges full width of the apparatus body in four (4) locations, front, rear and one (1) ahead and one (1) behind the rear wheel wells. Additional cross members shall be 3" x ¼" wall extruded aluminum "C" channel with 1" flanges. The sub frame shall be welded directly to ½" thick x 3" wide aluminum banding to hold the sub frame in place.

Flat Rack Bed

The bed of the flat rack shall be fabricated from 3/16" aluminum diamond plate. The diamond plate shall extend out to the top outside edge of the aluminum channel framework. The perimeter of the flat bed facing the sides shall remain the channel framework to allow the installation of reflective striping. The seams of the aluminum diamond plate bed shall be completely welded for superior strength and to seal the edges of the material.

Tool Boxes

There shall be two (2) aluminum diamond plate tool boxes fabricated and installed one (1) each side of the flat bed. The tool boxes shall be 78" long x 24" deep x 32" high to allow for a clear door opening of 24". Both tool boxes shall be equipped with Gortite aluminum roll up doors with a natural "satin" finish.

There shall also be small aluminum diamond plate tool boxes fabricated and installed under the flat bed at the left and right sides ahead of the rear wheels. These tool boxes shall be as large as practical within the space provided, but shall not hang below the cab of the apparatus. These compartments shall be supplied with Gortite aluminum roll up doors with a natural "satin" finish.

*Note: All of the compartments shall be supplied with adjustable shelf tracking to allow the installation of shelves in the future as needed.

Gortite Roll Up Compartment Doors

The roll up doors shall be of an anodized satin finish, double faced, aluminum construction and manufactured by A & A Manufacturing (Gortite). Lath sections shall be an interlocking rib design and shall be individually replaceable without complete disassembly of the door. Between each slat at the pivoting joint shall be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals shall allow door to operate in extreme temperatures ranging from plus 180 to minus 40 degrees Fahrenheit. Side, top and bottom seals shall be provided to resist dirt and weather from entering the compartment. The seals shall be made of Santoprene. All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from plus 300 to minus 40 degrees Fahrenheit. A polished stainless-steel lift bar shall be provided for opening the door. The lift bar shall be located

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at the bottom of the door and shall have latches on the outer extrusion of the doors frame. A ledge shall be supplied over the lift bar for an additional area to aid in closing the door. The doors shall be constructed from an aluminum box section. The exterior surface of each slat shall be flat and the interior surfaces shall be concave to provide strength and to prevent equipment from jamming against the door at the inside. The spring roller assembly shall not exceed 3" in diameter to conserve space in the compartment. The header panel for the roll up door shall not exceed 4" in height. There shall also be heavy-duty magnetic switches installed for activating the compartment lights and the "open compartment indicator light" in the cab.

Tool and Equipment Storage Bins

There shall be two (2) tool and equipment storage bins located above the driver and passenger side compartments. The bins shall be fabricated from 1/8" aluminum diamond plate with the sides and bottom punched in a grid pattern for air flow and drainage. This bin will be open to the top and supplied with a minimum of three (3) Velcro straps to retain the tools into the storage bin. This bin shall extend past the rear of the side compartments to the rear of the flat bed body. Each tool and equipment bin shall be full length of the body between the front headache rack and the rear bulkhead, full width of the upper front compartments and 8" tall.

Rear Bulkheads

There shall be rear bulkheads installed at the rear at each side to match the upper tool and equipment storage bins in width. These panels will be smooth aluminum and will be for supporting the rear of the upper storage bins and provide a mounting surface for lighting equipment.

Stokes Basket and Backboard Storage

There shall be a stokes basket and backboard storage built into the apparatus under the tool and equipment storage bins that extend to the rear of the body. There shall be two (2) storage pockets installed side by side in this open area for two (2) stokes baskets and back boards. There will be a solid aluminum diamond plate cover installed above the stokes baskets pockets at the center of the body between the side tool and equipment storage bins to prevent water and debris from collecting inside the stokes baskets. There will be retention devices installed at each end of these storage pockets to keep the stokes basket and back boards inside the stored locations.

Body to Frame Attachment

The entire body is to be electrically welded to the sub frame and be fastened down to the chassis frame with a minimum of 5/8" "U" bolts.

Adjustable Shelf Tracking

There shall be one (1) pair of adjustable tracking installed in each compartment on the apparatus. The tracking will allow for the provisions of adjustable shelves immediately or in the future.

Adjustable Shelves

There shall be two (2) adjustable shelves supplied with the apparatus mounted on adjustable tracking one (1) in each of the upper compartments. The shelves shall be made from smooth aluminum with a 1 1/2" lip on the front and the back in opposite directions for added strength, and to prevent equipment from sliding off and jamming against the door. The shelves shall have a "DA" style finish.

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Turtle Tile

There shall be Turtle Tile modular plastic floor matting installed at the bottom of each compartment of the apparatus body. The tile shall allow air to move freely around equipment in the compartments to help prevent mold and mildew from forming on or around equipment.

Side Steps

There shall be stirrup type steps located at each side of the body under the flat bed behind the rear wheels to aid in accessing the flat bed. The stirrup steps shall be fabricated from aluminum and shall have knurled grip type stepping surfaces.

Folding Steps

There shall be four (4) Cast Products model SP4401-1CH-BL-A folding cast aluminum steps with open grip strut at the stepping surface supplied and installed two (2) each side at the rear of the apparatus body. The front portion of the step shall have a handhold built into the step and there shall be a LED lights installed at the top and bottom of the step. The steps shall be a minimum of 35 square inches and N.F.P.A. compliant.

Hand Rails

There shall be four (4) hand rails installed, one (1) each side vertically mounted at the rear bulkheads and one (1) each side horizontally mounted at the inside rear of the upper side tool and equipment storage bins. The hand rails shall be rigidly mounted in chrome plated stanchions and be anodized aluminum extrusion, which is grooved and aggressively knurled to reduce hand slippage.

Rear Step

The rear step shall be formed from N.F.P.A. compliant 3/16" thick "embossed" aluminum diamond plate. The step shall be full width of the body and be approximately eight (8") inches deep. The step shall be supported underneath by 3" steel channels that extend off the chassis frame and have an isolation barrier between the two dissimilar metals to reduce corrosion.

There shall be a smooth aluminum filler panel installed between the rear step and the aluminum flat rack for mounting of ICC and warning lighting. This panel shall have tapered ends for an aesthetically pleasing appearance from the rear of the apparatus. This panel shall be covered with chevron striping.

Water Tank

The booster tank shall have a capacity of **350-400 US gallons of water with a 20 US gallon foam cell**. The tank shall be manufactured of 1/2" polypropylene and shall have internal baffled compartments that meet the current edition of NFPA 1901.

*Note: The tank must stay within the profile of the body compartments and tool trays at the top of the side compartments, both height and length. The fill towers can be above the trays but not the main tank.

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Tank Construction

The water tank shall be constructed of ½" thick textured polypropylene sheet stock with AccTuf™ resin. The material shall be of a certified, high quality, non-corrosive, stress relieved thermoplastic, black in color. The tank shall be so designed to have complete modular slide-in capability. All joints and seams are to completely nitrogen welded and electronically tested for maximum strength. The unit shall incorporate transverse and longitudinal partitions manufactured of 3/8" polypropylene, which shall interlock. All swash partitions shall be so designed to allow for maximum water and air flow between compartments and are completely welded to each other as well as to the inside of the tank. The passenger side rear wall of the tank shall have a standard built-in liquid level sight gauge 2" in width, natural in color, and 70% transparent.

Fill Tower and Tank Cover

The tank shall be equipped with a combination vent/overflow and manual fill tower. The fill tower shall be 8" round by 6" high with a molded shoe-box type cover. The cover shall be fastened to the tower with a tether to prevent loss. The tower shall be located in the rear passenger side corner. There shall be a vent/overflow installed inside and to the extreme rear of the tower approximately 2" down from the top. This vent/overflow shall be schedule 40 polypropylene pipe and have an I.D. of 3". The vent/overflow shall be piped internally toward the front and exit the front tank wall with a 1" extension.

The tank cover shall be constructed of ½" black polypropylene, and incorporate an exclusive one-piece self-locking design. The tank cover shall be flush mounted and fully removable for up to 100% access for inspection or repair if necessary. The cover shall incorporate four (4) polypropylene dowels for hold-down and lifting provisions. These dowels shall be tapped ½"-13 to accommodate lifting eyes with a minimum-security factor of 3 to 1. These dowels shall be welded into the transverse baffles, and will assist in minimizing cover flex during normal operation.

Sump

There shall be one sump as standard per tank. The sump shall be recessed into the tank floor and be a minimum of 5/8". The sump shall not be visible from or protrude thru the bottom of the tank.

Outlets

There shall be two standard outlets located on the same vertical plane on the driver's side rear tank wall: One (1) 2 ½" F.N.P.T. suction fitting and one (1) 1 ½" F.N.P.T. tank fill with flow detector.

Tank Drain

There shall be a 1" drain at the lower rear portion of the water tank to allow draining the water tank when needed. A 1" stainless-steel quarterturn valve will be supplied on the drain at completion.

Pump and Plumbing

Darley 2BE 18VX Medium Pressure/High Volume Pump

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There shall be a Darley 2BE 18VX medium pressure/high volume direct drive engine driven pump installed at the rear center of the apparatus body. The pump shall be wired to the chassis battery system for electric start capabilities.

*Note: There shall also be a pump control panel shipped loose with the pump and installed adjacent to the pump within easy reach at the rear of the body.

Pump Performance

375 GPM @ 25 PSI
300 GPM @ 45 PSI
100 GPM @ 140 PSI

Pump Engine Specifications

Briggs & Stratton Vanguard gasoline engine

- 18 horsepower motor
- Air Cooled
- 12-volt starter
- 16-amp alternator

Pump Specifications

- Hard anodized aluminum alloy casing
- Bronze impeller and wear rings
- Stainless steel impeller shaft
- Mechanical Seal

Dimensions

- 25" High
- 27" Long
- 21" Wide
- 145 lbs

Pump Primer

The pump will be supplied with a Guzzler hand priming pump. The location of the primer will be at the rear of the skid unit adjacent to the pump and within easy reach from a standing position.

Foam System

FoamPro 1601 Foam Injection System

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A FoamPro 1601 direct injection foam system shall be installed. The systems shall have a rated capacity of 500 gpm of foam/water solution at .2% foam concentration, 200 gpm at .5% concentration and 100 gpm at 1.0% concentration.

The foam system shall be capable of discharging Class "A" foam only.

The foam proportioning system operation shall be based on a direct measurement of water flows and pressure. The system shall be equipped with a control module on the pump control panel. Incorporated within the control display shall be a microprocessor, which receives input from the system flow meter while also monitoring the foam concentrate output. The microprocessor shall compare the values of the water flow versus the foam flow, to ensure that the proportion rate is accurate.

Push button control for the foam-proportioning system rate shall allow a ratio from 0.1% to 1.0% in 0.1% increments.

The foam injection pump shall be a positive displacement type rated at 1.0 gpm and powered by a 12-volt DC electric motor.

A check valve shall be installed between the water pump and the foam injection point to prevent foam agent from contaminating the water pump. Also, a check valve shall be placed between the foam pump and injection point to prevent water flowing into the foam pump and foam tank.

The foam system shall be plumbed from a 2" discharge opening on the pump with a 2" pipe and a 2" "Tee" for the flow meter sending unit and foam injector. After the flow meter and the foam injection point the discharge shall be split to feed the specified discharges.

*Note: Foam to be plumbed to the booster hose reels.

Hannay Booster Hose Reels

There shall be two (2) Hannay model EPF28-25-26-12RT electric rewind booster hose reels installed, one (1) each side, at the rear corners of the flat bed, side facing, under the tool and equipment storage bins and the stokes basket and backboard storage pockets. There shall be one (1) FH-3 stainless steel roller guide, high mount, on each reel. The hose reels shall be plumbed with a 1" ball valve and 1" flexible plumbing with the valve control at the pump manifold. The reel shall have a maximum capacity of 200' of 1" lightweight booster hose.

The reel shall be supplied with 200' of 1" lightweight booster hose and a Task Force Tips (TFT) model DS1040BCP Bubblecup nozzle at the time of delivery.

1 ½" Discharge

There shall be one (1) 1 ½" discharge supplied and installed at the rear of the apparatus off of the stainless-steel pump discharge manifold. The discharge shall consist of a 1 ½" ball valve with 1 ½" plumbing that terminates with 1 ½" NST male threads. Valve control shall be mounted directly onto the valve. The discharge shall be equipped with a 1 ½" cap and chain at completion.

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2 ½" Discharge

There shall be one (1) 2 ½" discharge supplied and installed at the rear of the apparatus off of the stainless-steel pump discharge manifold. The discharge shall consist of a 2 ½" ball valve with 2 ½" plumbing that terminates with 2 ½" NST male threads. Valve control shall be mounted directly onto the valve. The discharge shall be equipped with a 2 ½" female NST x 1 ½" male NST reducer and a 1 ½" cap and chain at completion.

2 ½" Suction Inlet

There shall be a 2 ½" suction inlet installed at the rear of the apparatus with stainless-steel plumbing and Akron ball valve. The suction inlet shall be integrated into the tank to pump line and shall terminate at the rear of the apparatus with a 2 ½" ball valve equipped with an NST female swivel adapter with screen and plug with chain.

Tank to Pump

There shall be a 2 ½" tank to pump line plumbed using stainless-steel plumbing and an Akron ball valve and flexible piping as needed for flex and vibration purposes.

Tank Fill/Recirculation

There shall be a 1 ½" recirculation line plumbed using stainless-steel plumbing and a ball valve with flexible piping, as needed, for body and tank flex and engine vibration.

Low-Point Drain

There shall be a drain installed at the lowest point of the pump and the stainless-steel discharge manifold to allow the pump and plumbing to be completely drained during the winter months.

12-Volt Electrical System

Wiring

All electrical equipment shall be installed to conform to modern automotive practices. All wiring is to be SXL ultra high temperature cross-link type. Wiring installed by the builder to be run in loom or conduit, where exposed to the outside, it should have grommets where the wire passes through a metal plate and shall be protected by automatic reset circuit breakers which conform to SAE standards. The breakers shall be selected to prevent wire damage when subjected to extreme overload. Wiring to be color, function, and number coded every 3", the entire length of run.

All electrical components to have a 125% maximum rating for current carried.

ES-Key Management System

The apparatus shall be equipped with a Class 1 ES-Key Management System for controlling electrical system devices. This management system shall be capable of performing loan management functions, system monitoring and reporting, and be fully programmable for a standardized electrical system.

The ES-Key system shall utilize a Controller Area Network to provide multiplexed control signals for "real time" operation.

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Master Battery Switch

There shall be a master battery, on-off, switch located at the driver's door near the seat. This switch shall be wired to the chassis battery system to allow the system to be turned off when the vehicle is not in use. There shall be a green indicator light located next to the switch and shall automatically turn on when the battery system is activated.

Vehicle Data Recorder (VDR - Black Box)

There shall be a Vehicle Data Recorder (VDR-Black Box) installed on the apparatus. The VDR will capture data once per second in a 48-hour loop. The VDR shall monitor and record the following information; Acceleration/Deceleration, Engine Speed, Engine Throttle Position, ABS Event, Seat Occupied & Seat Belt Status, Master Warning Device Switch On/Off, Date/Time. There will be a minute by minute summary for 100 engine hours.

Seat Belt Warning System

There shall be a seat belt warning and indicator system installed in the cab of the apparatus warning the driver with an audible alarm that a certain seat is being occupied and the seat belt is not fastened. There shall be an icon display at the center console of the apparatus to indicate the seating position.

Cab Console/Map Box

There shall be a control console installed in the chassis cab of the apparatus for mounting the Siren Control Head, the customer supplied and installed radio and all open compartment door indicator lights. The console shall be constructed from aluminum with a Black Line-X finish and shall have a removable Black Line-X coated aluminum face panel. At the rear of the console there shall be space provided for installing 3-ring binders or map books.

Master Switch Panel

All electrical light switches shall be mounted on the cab console by means of a custom switch panel. It shall be accessible to the driver and the officer. A Main Master Switch and individual switches to be provided to allow pre-selection of emergency and scene lights.

The light switches are to be "rocker" type with an internal indicator light to show when the switch is energized. All switches to be properly identified and mounted in a removable panel for ease in servicing. A backlit panel shall be used to identify the switches when it's dark.

The electrical junction box for all 12-volt wiring shall be located in a convenient location with an access panel. All components in the compartment shall have identification tags.

Wiring Diagrams

Two (2) wiring diagrams for 12 VDC and/or 120/240 VAC, the body electrical system shall be included with the apparatus as built.

Compartment Lights

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There shall be two (2) LED compartment strip lights in each compartment, one (1) each side of the door opening, wired to a door switch. Upon opening the compartment door the lights automatically come on.

Ground Lights

There shall be a total of six (6) LED ground lights are to be installed under the apparatus body. There shall be two (2) sealed lights located under the cab doors, one (1) each side under the body above the side stirrup steps and two (2) sealed lights located under the rear step area. These ground lights will be activated upon setting the parking brake.

Step Lights

There shall be two (2) LED step lights installed on the apparatus. There shall be a chrome plated shielded light each side above the rear step area. These lights shall be activated upon setting the parking brake.

Work Lights

There shall be four (4) 4" LED work lights installed at the rear of the apparatus body. There will be one (1) each side in the hose reel locations and two (2) around the pump and the pump control area. Exact location of the lights will be determined at construction for the best possible location for overall light effectiveness.

The lights shall be switched at the switch panel.

Telescopic LED Floodlights

There shall be two (2) Fire Research Evolution II LED model FCA530-V11 side mount push up telescopic lights installed, one (1) each side at the rear body panel, with light switches on the head. The light pole shall be anodized aluminum and have a knurled twist lock mechanism to secure the extension pole in position. The extension pole shall rotate 360 degrees. The outer pole shall be a grooved aluminum extrusion and qualify as an NFPA compliant handrail. The pole mounting brackets shall have a 3 1/2" offset. Wiring shall extend from the pole bottom with a 4' retractile cord.

The lamphead shall have four (4) ultra-bright white LEDs. It shall operate at 12/24 volts DC, draw 7.5/3.75 amps, and generate 11,000 lumens. The lamphead shall direct 50 percent of the light onto the action area while providing 50 percent to illuminate the working area. The lamphead angle of elevation shall be adjustable at a pivot in the mounting arm and the position locked with a round knurled locking knob. The lamphead shall incorporate heat-dissipating fins and be no more than 5 3/16" deep by 3 5/16" high by 7 5/8" wide. The lamphead and mounting arm shall be powder coated white. The floodlight shall be for fire service use.

Stop, Tail, Directional Lights

There shall be installed two (2) sets of Tecniq 6" oval LED stop/tail/directional, and back up lights at the rear outer most location. The red taillights shall be model T61-RRHP-1 and the backup lights shall be model T61-WCHP-1. The lights shall be wired to the chassis electrical system for operation. These lights shall be the surface mount style with chrome plated bezel. The lights shall be orientated for best fit within the rear lower ICC panel.

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Back Up Alarm

There shall be installed one (1) back up alarm wired to reverse gear on the transmission.

Clearance Lights/Reflectors

There shall be LED clearance lights installed at the rear of the apparatus built into the rear step. There shall be a cluster of three (3) in the center, one (1) each side at the outer 45-degree beveled corner.

There shall also be DOT reflectors at the outer most rear corners one (1) each side at the lower rear panel and one (1) each side at the lower rear corner-side facing.

Warning Systems

(All warning systems will be provided as per NFPA 1901 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 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.

**Note: The clear lights shall be deactivated with the truck transmission in Park Mode, not with parking brake.*

Light Bar-Whelen Justice Model JE2NFPA (Red, White)

There shall be one (1) Whelen Justice 56" LED light bar mounted on the headache rack and wired to the in-cab switch panel. The light bar shall have four (4) red CON 3 forward facing LED modules, two (2) clear CON 3 forward facing LED modules, two (2) red front corner LED modules, and two (2) red rear corner LED modules.

There shall also be two (2) additional rear facing Red LED modules, one (1) each side.

This light bar fulfills the requirements for Upper Zone A. The light bar lenses shall be clear in color.

Any clear warning light(s) in the light bar will be deactivated automatically for the "Blocking the Right of Way" mode.

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Grille and Intersection Lights-Whelen LED Flashers (Red)

There shall be two (2) grille lights installed at the front of the cab in the grille area, one (1) each side, and two (2) intersection lights installed, one (1) each side of the hood. The grille lights shall be Whelen ION-T, model TLIR LED flashers and the intersection lights shall also be TLIR LED flashers wired to the in-cab switch panel. These lights shall fulfill the requirements of Lower Zone A.

Side Lighting-Whelen LED Flashers (Red)

There shall be two (2) Whelen ION-T, model TLIR LED flashers mounted one (1) each side of the apparatus near the rear of the flat bed body. The lights shall be wired to the in-cab switch panel for operation. These lights shall fulfill the requirements of Zones B and D.

Lower Rear Lighting-Whelen LED Flashers (Red)

There shall be two (2) Whelen ION-T, model TLIR LED flashers mounted one (1) each side of the apparatus near the rear taillights. The lights shall be wired to the in-cab switch panel for operation. These lights shall fulfill the requirements of Lower Zone C.

Siren & Speaker

There shall be installed one (1) Whelen model 295SLSA1 siren amplifier mounted in cab where both driver and officer can reach it shall be wired to the cab electrical system. There shall also be installed one (1) Whelen SA315P, 100-watt weatherproof speaker recessed behind the chassis front bumper/grille area and wired to the siren amplifier and to the cab electrical system.

Paint/Misc.

Paint

The apparatus body will remain aluminum diamond plate and not have a painted finish.

Compartments

The inside of the apparatus compartments shall be left with a natural sanded finish.

Undercoating

The underside of the apparatus body shall be sprayed with a rubberized vehicle undercoating to protect the body from corrosion.

Lettering

There shall be non-reflective Gold vinyl lettering with black outline to match the existing apparatus. There shall be forty-one (41) to sixty (60) 3" letters supplied. (There shall be a picture supplied by the department of the style and what they want for lettering to the salesperson or to the manufacturer.)

Reflective Stripe

There shall be applied one (1) 4" white reflective stripe on the cab and body where applicable. There shall be a reflective stripe installed at the front and rear of the apparatus, where applicable, to enhance appearance and to be more visible in low light and dark conditions.

Initial Here _____

Arizona Fire Apparatus

There shall be a stripe, approximately 96 square inches, installed at the inside of the cab doors per NFPA regulations.

At the rear of the apparatus body the lower rear body panel shall be covered with alternating 6" Red and Fluorescent Yellow/Green reflective material in an inverted "V" Chevron pattern. This shall also be 3M Scotchlite material for maximum reflectivity at the rear of the apparatus.

Danger Plates

There shall be supplied and installed "Warning/Danger" plates on the apparatus.

There shall be one (1) plate installed in the cab within view of the driver stating the maximum number of passengers in vehicle.

There shall be one (1) plate installed in the cab within view of the driver stating the overall height, overall length and GVWR of the completed apparatus.

There shall be one (1) plate installed in the cab within view of all passengers stating; "DANGER-personnel must be seated and seat belts must be fastened while vehicle is in motion or Death or Serious Injury May Result".

There shall be one (1) plate installed at the rear of the apparatus body stating; "DANGER-do not ride on rear step while vehicle is in motion or Death or Serious Injury May Result.

There shall be one (1) plate installed in the cab within view of all seating locations stating: "Helmets must not be worn in the apparatus while vehicle is in motion."

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