CFB
CUSTOM FAB & BODY LLC

Type 3 Specifications

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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
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.

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.

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 ¾" 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.

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.

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.

Fire Pump

Pump Test
The pump shall be tested at the following capacities at the manufacturer's facility before delivery (this will not be a 3rd Party certified test):

500 GPM @ 150 PSI
500 GPM @ 165 PSI
350 GPM @ 200 PSI
250 GPM @ 250 PSI

Darley JMP 500 Single Stage Midship Pump
The pump shall be a Darley JMP pump with a capacity of 500 GPM.

Pump Casing
Vertically split type. Fine grain alloy cast iron, bronze fitted is standard with an option for all bronze. A cored heating jacket which uses exhaust gases protects the pump from freezing in winter weather.

Impellers
High strength bronze alloy, accurately balanced and splined to pump shaft for precision fit and durability. Double cutwater eliminates radial thrust.

Seal Rings
Renewable double labyrinth type bronze are standard.

Pump Shaft
Precision ground stainless steel with long wearing ceramic hard coating under packing glands. Shaft is splined for broached impeller hubs for greater resistance to wear, torsional vibration, and torque imposed by engine.

Mechanical Seal
The pump will be supplied with a Silicon Carbide Mechanical seal with welded springs. The stationary face of the mechanical seal is made from Silicon Carbide, an extremely hard and heat dissipative material, which resists wear and dry running damage much better than the conventional Ni-resist and Tungsten Carbide materials.

Transmission Case
Alloy cast iron with adequate oil reserve capacity for low operating temperature.

Driveshaft
Precision ground, heat treated alloy steel with 2 ½”-10 spline standard input and output. Shafts are supplied with spicer and yokes.

Gears
2 5/8” face helical. Precision cut from heat treated steel for quiet operation and long life.

Gear Shift
A heat-treated alloy steel splined spur gear engages either pump drive gear or truck drive shaft gear. A two-position positive lock manual selection lever in cab is standard. Air shift optional.

Bearings
Deep groove radial type ball bearings, oversized for long life. Bearings are protected at all openings from road dirt and water splash with oil seals and water slinger.

Electric Primer
The fire pump priming system shall consist of one (1) 12V positive displacement type rotary vane primer of a fluidless design. A single, push-pull control shall be located on the pump operator's panel with a "Pull to Prime - Push To Close" label. The primer shall not require a lubrication tank. The priming pump shall be constructed of heat treated aluminum and hard coat anodized.

Pump Shift
The pump shall be operated off of a hot shift Chelsea PTO. The PTO shall be mounted directly to the chassis transmission with a tubular drive shaft connecting the PTO to the water pump for operation. The PTO shall be activated in the cab by a rocker type switch.

*NOTE: The truck MUST be capable of pump and roll operations.

Drive Lines
The drive lines shall be properly fit with the pump installation. Tube shall be DOM (drawn over mandrel) made for drive shafts.

They shall be electronically MIG welded by a certified welder on a specially designed drive shaft fabrication machine. After welding, the drive shaft shall be checked for straightness and be dynamically balanced by computerized machinery. All drive shafts shall be balanced.

Suction Relief Valve
A Task Force Tips (TFT) 2 ½” suction side relief valve shall be provided and piped toward the ground under the apparatus. Rugged, cast aluminum construction with hard coat anodized and

powdercoat finish for maximum corrosion resistance. Fully adjustable from 90 to 300 psi. Complies with NFPA 1901.

Foam System

FoamPro 1600 Foam Injection System
A FoamPro 1600 direct injection foam system shall be installed. The systems shall have a rated capacity of 850 gpm of foam/water solution at .2% foam concentration, 340 gpm at .5% concentration and 170 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 1.7 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 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 up two (2) different discharges as directed by the fire department.

The two (2) 1 ½” preconnect discharges and the booster hose reel shall be supplied with foam.

PLUMBING

Pump Plumbing
The apparatus will be plumbed using threaded stainless-steel pipe and stainless-steel threaded fittings. High-pressure rubber hose may be used when needed for discharges only. Victaulic couplings shall be used wherever needed to prevent vibration damage to the pump, plumbing and water tank. The suction and discharge piping of the pump shall include victaulic fittings for easy maintenance of the pump and plumbing when needed.

Suction Inlets

There shall be two (2) 4" non-gated suction inlets with screen and long handle chrome cap will be provided at each side of the pump panel.

There shall be a label installed at each 4" inlet stating: "WARNING-SERIOUS INJURY OR DEATH COULD OCCUR IF INLET IS SUPPLIED BY A PRESSURIZED SOURCE WHEN THE VALVE IS CLOSED."

There shall be one (1) ¾" bleeder/drain supplied for each inlet and controlled at the pump operator's panel.

2 ½" Auxiliary Inlet
One (1) 2 ½" NST gated suction inlet shall be provided at the pump operators panel. The valve shall be an Akron quarter turn ball valve controlled through the pump panel with a chrome handle. A strainer, chrome plug and chain will also be provided with the inlet.

There shall be one (1) ¾" bleeder/drain supplied for the inlet.

Crosslays
There shall be one (1) double crosslay hose bed provided directly above the pump compartment of the apparatus. Each crosslay shall be capable of holding 200' of 1 ¾" double jacket fire hose, and will be able to be deployed off of the rear of the apparatus with a 2" x 1 ½" swiveling discharge elbow. There shall be stainless steel rollers around the crosslay hose feed out to protect the painted surface from hose that is being deployed. An aluminum crosslay divider shall be installed to separate the double crosslays.

Each crosslay will be plumbed with 2" stainless steel pipe and a 2" Akron quarter turn ball valve controlled at the pump panel with an Innovative Controls push-pull locking control handle.

There shall be one (1) ¾" bleeder/drain supplied for each crosslay.

There shall be an aluminum diamond plate cover installed at the top of the crosslay hose bed. The cover shall hinge toward the front of the apparatus body to aid in repacking the fire hose.

There shall be webbing installed at each side of the crosslay hose beds to keep the hose from accidentally deploying while the vehicle is in motion. The webbing shall be capable of being removed or "opened up" to quickly access the discharge hose and nozzle.

Hannay Booster Hose Reel
There shall be one (1) Hannay, model EF-16.5-30-31, electric rewind booster hose reel installed at the lower front of the apparatus body ahead of the rear wheels. The reel will be installed behind the outside panel with an opening large enough for the hose to pass thru with a 4-way stainless-steel roller guide the width of the hose reel. The electric rewind motor shall be protected with a shield. The hose reel shall be plumbed with an Akron ball valve and flexible plumbing controlled with an Innovative Controls push-pull locking control handle at the pump operator's panel. The reel shall have a manual rewind crank in case of a power failure. The reel shall also have a maximum capacity of 200' of ¾" booster hose, the 800PSI hard rubber booster hose shall be supplied on reel at delivery. A nozzle mount will be supplied at the passenger side runningboard to secure the nozzle while not in use.

The booster reel discharge will have a ¾" bleeder drain with control piped toward the ground.

Front Bumper Ground Sweep Nozzles
There shall be a set of three (3) spray nozzles located under the front bumper of the apparatus. The nozzles shall be located one (1) each side and one (1) centered under the front bumper and positioned to properly cover the width of the apparatus. The nozzles shall be plumbed with an electrically actuated valve with control in the cab of the apparatus. The plumbing shall be split under the front bumper to feed the individual nozzle heads. Drains shall be installed in the plumbing to drain the water from the discharge line while not in use.

2 ½" Discharges
There shall be three (3) 2 ½" discharges, Akron quarter turn ball valves. The driver's side valve will be a valve mounted chrome plated handle thru the side panel. The side and rear valves will be controlled at the pump panel with Innovative Controls push-pull locking control handles. The side discharge outlets will be chrome 30° elbows with male NST threads and a chrome 2 ½" female cap and chain. The hose bed discharge will have a straight 2 ½" discharge fitting, no cap. There shall be one (1) at each side panel and one (1) at the front of the hose bed at the passenger side.

There shall be one (1) ¾" bleeder/drain supplied for each discharge.

Master Drain
There shall be one (1) master drain, to drain pump and lines toward the ground.

Individual Line Drains/Bleeders
There shall be a ¾" lift up/push down drain provided for each 1 ½" or larger discharge and 2 ½" or larger inlet. The purpose of these drains is to aide firefighters in draining the pump or to bleed off water to help remove a hose from the apparatus that had water pressure. The drains shall be located on each side of the apparatus near the bottom of the pump house directly above the side running boards. These drains shall be identified with color-coded name labels to match the discharge or inlet that it is for.

Tank Fill (Pump to Tank)
There shall be one (1) pump to tank line for filling the water tank with the pump with a 1 ½" line. The valve shall be an Akron quarter turn ball valve with an Innovative Controls push-pull locking control handle at the pump panel.

Tank to Pump
There shall be one (1) tank to pump line 3" in size with a check valve. The valve shall be a 3" Akron quarter turn ball valve with an Innovative Controls push-pull locking control handle at the pump panel. A flexible line shall be used between the tank sump and the valve.

Valves
The valves used in the plumbing of the apparatus shall be Akron 8800 Series valves with a stainless-steel ball and Polymer seats. The valves shall be supplied with a 10-year warranty from the Akron Brass Company.

Pump House & Operators Panel

Pump House

Apparatus body shall be divided into two (2) individual sections to increase body flexibility for the severe use in firefighting applications. There shall be a separate pump compartment with control panel and the rear water tank and compartment body. The pump house will also be built separate from the cab for the increase of flexibility. The unit will be a welded aluminum structure using both formed and structural aluminum pieces to provide a strong lightweight pump compartment and pump control module. At the top of the pump compartment there shall be one (1) double crosslay hose bed provided.

Pump Panels
The pump panels shall be Black Line-X coated aluminum and shall be easily removable for service work. The left panel shall have a hinged gauge panel also made of Black Line-X coated aluminum located directly above the lower side pump panel. The upper and lower left panels shall be where all pump controls and gauges shall be placed and all controls and gauges shall be labeled using color- coded name labels.

The passenger side, lower side panel, shall be attached with two (2) push button trigger latches, one (1) in each upper corner, for quick, easy removal. The right panel shall also have a quick access door made of Black Line-X coated aluminum located directly above the lower panel for access to the pump. The upper panel shall be hinged at the top and shall be held open with pneumatic door lifts. Upon removal of the lower panel and opening the upper door it shall allow easy access into the pump compartment without any obstructions, minus plumbing and plumbing components.

Lighting shall consist of three (3) TecNiq LED pump panel lights for complete illumination of the pump operator panels, two (2) at the driver's side and one (1) at the passenger side. The lights shall be housed in a brushed stainless-steel full width lamp shield above the gauge panel. The lights shall be controlled at the pump operator's panel with an "On/Off" toggle switch.

All suction and discharge inlets and outlets shall be trimmed with chrome plated garnish rings with color-coded inserts to match gauges and control handles.

Operators Panel
The following items shall be furnished on the operator panel at the left side:
-One (1) 4 ½" white master pressure gauge, liquid filled 0-600 PSI
-One (1) 4 ½" white master vacuum gauge, liquid filled 30"-0-600 PSI
-One (1) 2 ½" white pressure gauge one (1) per 1 ½" or larger discharge 0-600PSI
-One (1) Fire Research Pump Boss Pressure Governor and Engine Monitor
-One (1) Innovative Controls water level gauge
-One (1) Innovative Controls foam level gauge
-One (1) pump panel light switch
-One (1) pump primer control
-All discharge controls
-One (1) tank fill control
-One (1) tank to pump control
-One (1) Master Drain control
-One (1) UL test outlet
-One (1) Pump Hourmeter
-One (1) FoamPro 1600 control head

Pressure Gauges
All pressure gauges shall be fully filled with pulse and vibration dampening Interlube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation to minus 40 degrees F. The Zytel nylon cases shall be temperature compensated with an internal breathing diaphragm to permit fully filled cases and to allow a rigid lens with a distortion free viewing area.

To prevent internal freezing and to keep contaminants from entering the gauge, the stem and Bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem.

Individual 2 ½" line gauges for each 1 ½" or larger discharges shall be supplied and mounted adjacent to the discharge valve control handle. A removable chrome plated or color coded trim ring shall be supplied for each gauge.

Two (2) 4 ½" master pump gauges shall be supplied and mounted in close proximity to the throttle, primer, and engine instrumentation. The intake gauge shall be to the left of the discharge gauge. Chrome plated trim rings shall be supplied with each gauge.

Pressure Governor and Engine Monitoring Display
There shall be a Fire Research PumpBoss series PBA401-D00 pressure governor and monitoring display kit installed. The kit shall include a control module, intake pressure sensor, discharge pressure sensor, and cables. The control module case shall be waterproof and have dimensions not to exceed 6 3/4" high by 4 5/8". The control knob shall be 2" in diameter with no mechanical stops, have a serrated grip, and a red idle push button in the center. It shall not extend more than 1 3/4" from the front of the control module. Inputs for monitored engine information and outputs for engine control shall be on the J1939 databus. Inputs from the pump discharge and intake pressure sensors shall be electrical.

The following continuous displays shall be provided:
- Engine RPM; shown with four daylight bright LED digits more than 1/2" high
- Check engine and stop engine warning LEDs
- Engine oil pressure; shown on a dual color (green/red) LED bar graph display
- Engine coolant temperature; shown on a dual color (green/red) LED bar graph display
- Transmission Temperature: shown on a dual color (green/red) LED bar graph display
- Battery voltage; shown on a dual color (green/red) LED bar graph display
- Pressure and RPM operating mode LEDs
- Pressure / RPM setting; shown on a dot matrix message display
- Throttle ready LED.

The dot-matrix message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator. All LED intensity shall be automatically adjusted for day and night time operation.
The program shall store the accumulated operating hours for the pump and engine to be displayed with the push of a button. It shall monitor inputs and support audible and visual warning alarms for the following conditions:
- High Battery Voltage
- Low Battery Voltage (Engine Off)
- Low Battery Voltage (Engine Running)
- High Transmission Temperature
- Low Engine Oil Pressure

High Engine Coolant Temperature
Out of Water (visual alarm only)
No Engine Response (visual alarm only).

The program features shall be accessed via push buttons located on the front of the control module. There shall be a USB port located at the rear of the control module to upload future firmware enhancements.

The governor shall operate in two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between modes. A throttle ready LED shall light when the interlock signal is recognized. The governor shall start in pressure mode and set the engine RPM to idle. In pressure mode the governor shall automatically regulate the discharge pressure at the level set by the operator. In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi. Other safety features shall include recognition of no water conditions with an automatic programmed response and a push button to return the engine to idle.

The pressure governor and display shall be programmed to interface with a Cummins engine.

Water Tank Level Gauge
There shall be an Innovative Controls model 3030385-31, Ultra Bright LED Master Water level gauge readout provided on the pump operator's panel. The level gauge will contain at least fourteen (14) high intensity LED's on the display in an inverted "V" pattern allowing the full, ¾, ½, ¼ and refill levels to be easily distinguished at a glance. The gauge shall use a pressure transducer installed near the bottom of the water tank to determine the correct volume in the tank. The readout will be provided with a single chrome plated housing.

Foam Tank Level Gauge-Class A
There shall be an Innovative Controls model 3030386-31A, Ultra Bright LED Master Class A Foam level gauge readout provided on the pump operator's panel. The level gauge will contain at least fourteen (14) high intensity LED's on the display in an inverted "V" pattern allowing the full, ¾, ½, ¼ and refill levels to be easily distinguished at a glance. The gauge shall use a pressure transducer installed near the bottom of the water tank to determine the correct volume in the tank. The readout will be provided with a single chrome plated housing.

Discharge Controls
The apparatus shall be equipped with Innovative Controls chrome plated push-pull locking controls. The handles shall be chrome-plated zinc with a recessed area for identification label. The control shall be a ¼ turn locking in any position handle and the connecting rod shall be ½" stainless steel linkage rods equipped with ball swivels for ease in operation.

Heat Exchanger
A Sen-dure model #1212-1 auxiliary booster cooler shall be installed on the apparatus made of brass and copper construction. The unit shall permit use of water from the discharge side of the pump for cooling of the coolant circulating through the engine cooling system with out intermixing. The auxiliary cooler lines shall be routed away from the engine exhaust and be properly secured to the apparatus.

Booster Tank

Tank Capacity
The water booster tank shall have a capacity of ***500 US gallons of water and 20 gallons of foam concentrate*** complete with lifetime warranty. The tank manufacturer shall mark the tank and furnish notice that indicates proof of warranty. The purpose of the markings and notice is to inform department personnel who store, stock, or use the tank that the unit is under warranty. Markings may be brief but should include a short statement that a warranty exists, the substance of the warranty, its duration, and who to notify if the tank is found to be defective.

The water tank shall be constructed from all polypropylene type material and shall be completely NFPA compliant upon completion. There shall be a fill tower in the left front corner of the tank, unless otherwise specified, with minimum dimensions of 10" x 10". There shall be a 4" minimum overflow/vent pipe installed into the fill tower directed to a location behind the rear wheels for air to vent and excess water to discharge from the tank without flowing into the hose bed or onto the body compartments. There shall be a sump located in the tank of the apparatus for "hooking" up the tank to pump line where all the water in the tank can be utilized. There shall be a 3" NPT plug in the bottom of the sump that can be removed for a cleanout, to remove any debris that may enter the tank. The tank shall be supplied with one (1) tank fill line with a flow deflector installed for filling the tank. The tank can be filled at a maximum rate of 1000 GPM.

The tank shall be mounted into the apparatus body per tank manufacturer's recommendations and NFPA recommendations.

Apparatus Body

Extruded Aluminum Pumper Body

Extruded Aluminum Body Construction and Sub Frame
The apparatus body shall be of aluminum construction, using the electrically welded and bolted design and assembled with 1" radius corner extrusions, formed panels and structural tubing extrusions.

The apparatus body corners, both vertical and horizontal, shall be constructed with 1" radius corner extrusion framework around the entire perimeter of the apparatus, which incorporates 1/8" aluminum sheeting. The body framework shall also be welded directly to the body subframe with 2" x 3" x ¼" wall tubing that run the full width of the apparatus body in a minimum of four (4) locations, more with tandem axle bodies. Bracing and gussets shall be used at the manufacturer's discretion to enhance the durability and life of the apparatus body without affecting the overall appearance of the finished product.

The hose body side panels are to be 1/8" smooth aluminum. The top of the side panels shall have a 1" radius extrusion to increase the support and enhance the appearance of the sidewalls. There shall also be an interior panel at the hose bed side of the panel that shall leave the hose bed with a smooth finish. This method of construction will leave the hose bed side walls with a double wall type construction. If the interior panel would be damaged this would not transfer to the exterior side wall and be visible from the outside of the body. This also allows any side scene lights to be recess mounted into the side walls.

The rear of the apparatus shall be the flat back style to open up the work area both physically and visually.

Anti-Corrosion Protection
No dissimilar metals shall contact each other. All stainless-steel screws shall have a nylon washer under their heads and “ECK” (Electrolysis Corrosion Kontrol) coated threads a non-hardening isolating material. All fasteners shall be stainless steel. No pop rivets shall be used in the construction of the apparatus. “ECK” shall also be used behind all lights and mounting brackets to aid in corrosion protection.

Sub Frame
There shall be a sub frame made up of all aluminum extrusions electrically welded together for superior strength. The subframe shall be electrically welded to ½” x 3” aluminum flat bar that run the full length of the apparatus body, which is then U-bolted to the chassis frame.

Between the sub frame and the frame rails there shall be 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 and to provide a cushion for the body onto the chassis frame. The sub frame shall be made up of 2” x 3” x ¼” wall extruded aluminum tubing. Cross members for the water tank shall be on 12” centers and a 2” x 3” x ¼” thick aluminum angle shall be used for the tank carriage.

Body Compartments
All the body compartments shall be constructed of 1/8” smooth aluminum and shall be provided with a sweep out floor design. There shall be hat sections installed under the apparatus body compartments to help support the floors when loaded with heavy equipment.

All compartments shall have louver panels in the back walls for adequate ventilation. Louver openings shall be open toward the top and to the inside of the compartment to help prevent foreign objects and road splash from entering the compartments. Each compartment shall have lighting installed to illuminate the compartment during low light and dark conditions.

Compartment Layout
(Compartment sizes are approximate sizes and may change with the chassis style, body style, and cab to axle distance.)

Driver’s Side Compartments
L1-The compartment forward of the rear wheels shall be equipped with a single vertically hinged flush mount aluminum door. There shall be one (1) slide out tool board.
Approximate size of the compartment shall be 17” wide x 60 high x 23” deep.

L2-The compartment over the rear wheels shall be equipped with a horizontally hinged flush mount aluminum lift up door. This compartment shall be full depth full height. There shall be a stainless-steel scuff plate located at the bottom pin area of the compartment opening to help prevent scuffing and scratching the painted surface while unloading and loading of equipment into the compartment. There shall be four (4) SCBA brackets installed into this compartment mounted onto horizontal adjustable tracking.
The approximate size of the compartment shall be 41 ¼” wide x 35” high x 23” deep.

L3-The compartment behind the rear wheels shall be equipped with a vertically hinged flush mount aluminum door. The compartment shall be full depth full height. There shall be two (2) adjustable height shelves and one (1) floor mounted roll out tray provided in this compartment. The approximate size of the compartment shall be 24 ¾" wide x 55" high x 23" deep.

Passenger Side Compartments
R1-The compartment over the rear wheels will extend to the front of the body and shall be equipped with a horizontally hinged flush mount aluminum lift up door. The compartment shall be full depth full height. There shall be stainless steel scuff plate located at the bottom pin area of the compartment opening to help prevent scuffing and scratching the painted surface while unloading or loading equipment into the compartment. There shall be one (1) adjustable height shelf provided in this compartment.
The approximate size of this compartment shall be 61 ½" wide x 35" high x 23" deep.

R2-The compartment behind the rear wheels shall be equipped with a vertically hinged flush mount aluminum door. The compartment shall be full depth full height. There shall be one (1) floor mounted slide out tray and one (1) adjustable height shelf provided in this compartment.
The approximate size of this compartment shall be 24 ¾" wide x 55" high x 23" deep.

RR1-The rear center step compartment shall be equipped with dual vertically hinged flush mount aluminum doors.
The approximate size of this compartment opening shall be 44" wide x 42" high x 18" deep. There shall be one (1) floor mounted roll out tray provided in this compartment.

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 four (4) shelves provided with the apparatus upon delivery. The shelves shall be fabricated from 3/16" high strength 5052-H32 aluminum. The shelves are to have double channel break both front and rear to form a reinforced channel. The rear channel is to be bent in the opposite direction of the front so that the shelf is reversible to provide either a lip to retain equipment or a smooth sweep out front. The trays shall be installed at the aforementioned compartment provisions.

Slide Out Tray
There shall be three (3) slide out trays installed on the apparatus with a 300lb capacity. The slides shall be Accuride slides with an aluminum tray with 2" sides that lock in the "In" and "Out" positions. The trays shall be installed at the aforementioned compartment provisions. There shall be alternating Red/White reflective striping installed around the perimeter of both sides of the slide out tray for enhanced safety of the apparatus.

Aluminum Pull Out Tool Board
There shall be one (1) aluminum pull out tool board installed on the apparatus in the L1 compartment. The tool board shall be made from 3/16" smooth aluminum with ¼" holes on 1" centers throughout the board. The boards shall be mounted, top and bottom, floor and ceiling, with Accuride slides and held open or closed with a pressurized gas strut. The tool board shall be as deep as possible and adjustable from side to side. There shall be alternating Red/White

reflective striping installed around the perimeter of both sides of the tool board for enhanced safety of the apparatus.

Turtle Tile
There shall be Turtle Tile modular plastic floor matting installed at the bottom of each compartment, tray, and shelf in 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.

Compartment Doors
The compartment doors shall be constructed entirely from aluminum using a flush type configuration 1 5/8" door with 1/8" diamond plate inner panel fastened to the door with stainless steel fasteners. Two (2) ¼" holes shall be installed in the lower corners of the inside door pans for drainage. There shall be a "hat stake" section inside each door to enhance the overall strength and durability of the doors. Doors shall be fully weather stripped with hollow core tubular automotive "D" type material. The compartment doors shall have a double catching two-point safety slam heavy-duty stainless-steel latches 6" circle type with rubber gaskets for electrolysis protection, recessed inside the 1 5/8" thick double pan door. Latches shall meet strength requirements for passenger doors as specified in the Federal Motor Vehicle Standard they shall be Eberhard model U-106 slam latches. The "D" rings shall have a slight break outward to facilitate easy access while using gloves. The doors shall be securely attached to the apparatus body with full-length 16-gauge stainless steel piano type hinges with stainless steel pins and fasteners. ***(Pop Rivets shall NOT be used for attaching compartment doors to the apparatus body.)*** All horizontally hinged doors shall have a pneumatic cylinder door check device. The pneumatic door holder permits the slide to pass over center and holds the door at 90 degrees to the body. The door is self-closing when pushed past the midpoint of its swing. All vertically hinged doors will be provided with a Cleveland style positive door check.

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.

Wheel Liners/Fenderettes
There shall be rounded wheel liners installed in the body to protect and to minimize any area for water, moisture, and road debris to sit and cause corrosion. There shall also be installed black rubber ½" radius fenderette which is bolted to the body if it needs to be removed or replaced.

Aluminum Diamond Plate Overlays and Trim
The top of the apparatus body compartments shall be finished with aluminum diamond plate. The aluminum diamond plate shall extend out to the top inside edge of the horizontal extrusions.

At the front of the body there shall be aluminum diamond plate installed full height to be a stone shield and to protect the body from road debris.

The entire rear panel of the apparatus body shall be completely smooth aluminum material. There shall be stainless steel scuff plate installed from the hose bed floor to the top of the side body panels approximately 12" deep from the rear of the hose bed to protect the body and paint finish from scratching and marring.

Hose Bed
The hose bed shall be 46 ½" wide and 14" deep inside and full length of the apparatus body above the water tank and rear step compartment provision. The hose bed floor shall be constructed of formed aluminum panels with holes punched in a grid pattern and supported underneath for ample air flow between the top of the tank and the hose bed. The hose bed floor shall be easily removable. The inside of the hose bed shall be smooth and free of any projections, (sharp angles, nuts, or brackets), which may injure the hose.

Hose Bed Divider
There shall be one (1) hose bed divider installed on adjustable tracking. The divider shall be made of 3/16" smooth aluminum with a radius corner at the rear. The divider shall be mounted to the left of the water/foam fill towers, but shall be made adjustable full width (except where the towers are located).

Hand Rails
There shall be two (2) hand rails installed, one (1) each side vertically mounted at the rear of the apparatus. The hand rails shall be rigidly mounted in chrome plated stanchions and be polished aluminum extrusion, which is grooved and aggressively knurled to reduce hand slippage.

Rub Rails
There shall be rub rails installed around the perimeter of the body below the bottom compartments. The rub rail shall be an extruded aluminum channel approximately 2 ½" high with the flat side of the channel to the body side. The rub rail will then be installed using Teflon spacers to keep the rub rail away from the body and be bolted for easy removal and allow drainage between the body and the rub rail.

Alternating Red/White reflective material shall be inserted into the rubrail for additional reflectivity.

Running Boards
There shall be running boards installed at each side of the pump compartment of the apparatus. The running boards shall be fabricated from 3/16" "embossed" aluminum diamond plate. The running boards shall run the full length of the pump compartment and as wide as the body rub rails to provide a streamline appearance. The running boards shall be supported underneath by 2" angle that extends off of the apparatus subframe and shall be spaced off the pump compartment approximately ½". There shall be an approximately 6" "kickplate" installed on the pump compartment at running board height to protect the painted finish.

Folding Steps
There shall be four (4) Cast Products model SP4401-1CH-BL-A folding steps installed at the rear of the apparatus body, two (2) each side at the rear. This shall allow access to the hose bed of the vehicle. The steps shall be chrome plated and N.F.P.A. compliant.

Rear Step
The rear step shall be formed from N.F.P.A. approved 3/16" thick non-slip 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 a spacer between the two dissimilar metals to reduce corrosion.

SCBA Mounts Upper Storage Compartment

There shall be four, (4), Walk-a-way SCBA brackets furnished and mounted, in the left side compartment over the rear wheels, L2. The compartment shall be equipped with horizontal Unistrut adjustable mounting tracking. The tracking is to be the infinitely adjustable type attached to the rear compartment wall.

Suction Hose Storage
There shall be one (1) rear slide in compartment fabricated above the left side apparatus body compartments for storage of hard suction hose. The compartment shall be fabricated as part of the apparatus body from 1/8" aluminum. The compartment will be supplied with two (2) interior troughs installed for holding a length of hard suction hose on each trough. The rear door shall be a smooth aluminum flat door with a Southco type push button trigger latch to hold the doors in the closed position and a pressurized gas shock to hold in the open position. The compartments shall be sized to fit two (2) lengths of 4" x 7' lightweight hard suction hose.

Ladder/Pike Pole Storage
There shall be a ladder and pike pole storage compartment fabricated and mounted directly above the passenger side compartments. The storage compartment shall be fabricated as part of the apparatus body from 1/8" aluminum and shall have nylon strips on the floor for the ladder to slide onto. There shall be storage for two (2) pike poles in the ladder compartment. The rear door shall be a smooth aluminum flat door with a Southco type push button trigger latch to hold the doors in the closed position and a pressurized gas shock to hold in the open position. This compartment shall be the same height as the hard-suction hose compartment on the driver's side to give the apparatus a balanced look. There shall be a Duo Safety model 1000-A 12' 2-section extension ladder and two (2) 8' fiberglass handled pike poles.

I-Zone Brackets
There shall be two (2) I-Zone brackets supplied and installed at the rear of the apparatus body, one (1) each side. The exact layout of these brackets will be determined at the pre-construction meeting.

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.

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.

Each rocker switch shall energize a 40-amp continuous duty relay except in the core of the master, which will be an 80-amp. Each relay shall be labeled as to its function.

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

The electrical junction box for all 12-volt wiring shall be located in a convenient location. It shall have a hinged aluminum diamond plate access panel. All components in the compartment shall have identification tags.

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.

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 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 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.

EMI/RFI Protection
The 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 Excellance) 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 fireground 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.

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 turn 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.

Compartment Lights
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.

Open Compartment Door Indicator Light
There shall also be an LED "open door" indicator light mounted in the cab where the driver can see it. This is to alert the driver that there is a door open or ajar on the apparatus. This light is also wired to the door switch.

Ground Lights
There shall be eight (8) LED ground lights are to be installed under the apparatus body. There shall be one (1) under each cab door, one (1) each side under the pump panel running boards, and two (2) sealed lights located under the rear of the body. These ground lights will be activated upon setting the parking brake.

Step Lights
There shall be eight (8) LED step lights installed on the apparatus. There shall be one (1) Tecniq Dragon LED light with stainless steel shield below each cab door, one (1) 4" sealed light each side at the pump panel running boards and two (2) chrome-plated shielded lights at the rear step area. These lights shall be activated upon setting the parking brake.

Pump Compartment Lights
There shall be two (2) LED lights with manual switches mounted in the pump compartment to help in servicing the pump.

Engine Compartment Lights
There shall be two (2) LED lights with manual switches mounted in the engine compartment to help in servicing the engine.

Stop, Tail, Directional Lights
There shall be installed two (2) sets of Tecniq 4" round LED stop/tail/directional, and back up lights at the rear outer most location. The red taillights shall be model T40-RRFP-1, the amber turn signals shall be model T40-AAFP-1 and the backup lights shall be model T41-WCFP-1. The lights shall be wired to the chassis electrical system for operation. These lights shall be supplied with a flange style mount.

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) at the outer most corner facing to the rear, and one (1) each side as close to the rear corner as possible facing to the side. There also shall be clearance lights installed at the side of the apparatus if needed.

There shall also be DOT reflectors at the outer most corners one (1) each side toward the rear and one (1) each side toward the side.

Scene Lights
There shall be six (6), Whelen model C7SL 12-volt LED scene lights installed on the apparatus body two (2) each side at the upper side compartments and two (2) at the rear panel of the apparatus. The scene lights shall be wired to the in-cab switch panel and activated with a switch for each side. The rear lights shall also be wired to reverse gear on the chassis to automatically activate upon the transmission being shifted into reverse gear.

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 front of the body near the pump module, 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.

Warning Systems
(All warning systems will be provided as per NFPA 1901 requirements.)

Light Bar-Whelen Justice Model JE2NFPA (Red, White)
There shall be one (1) Whelen Justice 56” LED light bar mounted on the cab roof of the chassis 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. 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.

Grille and Intersection Lights-Whelen LED Flashers (Red)
There shall be two (2) grille lights installed at the front of the cab, one (1) each side, and two (2) intersection lights installed, one (1) each end of the front bumper or front fenders. The lights shall be Whelen ION-T, model TLIR LED flashers wired to the in-cab switch panel. These lights shall fulfill the requirements of Lower Zone A.

Lower Side Lighting-Whelen LED Flashers (Red)
There shall be two (2) Whelen, model C7LR LED flashers mounted one (1) each side at the rear wheel well area. The lights shall be wired to the in-cab switch panel. These lights shall fulfill the requirements of Lower Zones B and D. All of these lights shall be Red in color.

Lower Rear Lighting-Whelen LED Flashers (Red)
There shall be two (2) Whelen, model C7LR LED flashers mounted one (1) each side at the rear of the apparatus above 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. The lights shall be Red in color.

Upper Flashers-Whelen LED Flashers (Red)
There shall be four (4) Whelen, model C7LR LED flashers mounted one (1) each side at the upper rear corner, side facing, and two (2) at the upper rear panel below the suction hose and ladder storage compartments. The lights shall be Red in color. The lights shall be wired to the in-cab switch panel for operation. These lights shall fulfill the requirements of Upper Zone B, C and D.

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, model SA315P, 100-watt weatherproof speaker at the front bumper and wired to the siren amplifier and to the cab electrical system.

Loose Equipment
The following is a list of the loose equipment to be supplied with the apparatus upon delivery.

Set of Worden non-folding wheel chocs with mounting brackets (shipped loose)
One (1) 12', aluminum, Duo-Safety, model 1000-A, two-section extension ladder
Two (2) 4" x 7' lightweight hard suction hoses with NST couplings, long handle female x rocker lug male
One (1) 4" barrel strainer
Two (2) 8' fiberglass handled pike poles

Note: Any additional loose equipment items outlined in NFPA 1901 section 5.8 will be customer supplied and installed on the apparatus before the unit is placed into service. This equipment is not included in this proposal!

Paint/Misc.

Paint Code:

The apparatus tank and wheels shall be painted one (1) solid color per fire department specifications using PPG ESSS Polyurethane base coat/clear coat paint. The painting process shall follow the PPG painting process by PPG certified applier.

- All items such as brackets, compartment doors, door hinges, and diamond tread aluminum plate, etc. should be removed from the apparatus or body.
- Entire unit should be solvent washed using a two (2)-rag method using CFX436/330 Wax and Grease Remover.
- The welded areas on the entire unit should be ground down with a 36-grit disc for steel, and 80 grit discs for aluminum. Compartment seams and others not receiving the grinding process should be wire wheeled. All surface area then should be DA sanded using 120 grit then 180 grit on steel or Galveneal. On aluminum use 150-180 grit.
  Filling should be done where necessary with professional grade lightweight polyester resin filler. Presanding the polyester filler is recommended.
  Final sanding should be done no courser than 180 grit.
- Entire unit should be solvent washed using a two (2)-rag method using CFX436/330 Wax and Grease Remove prior to priming.
- The unit will be Epoxy Primed with ESU 421, mixed with ESU 428 hardener and ESR 300 thinner. A minimum number of coats, 1-2, for a 1.5-2.0 MIL thickness. After a flash time of 10-15 minutes ESU 440 High Build primer surfacer mixed with ESU 4492 ESX 510 to be applied per PPG specifications. Minimum of 2-3 coats for a 3.0-6.0 dry MIL thickness.
- Sanding should be accomplished using 320 grit until all scratches are removed.
- Upon completion of the sanding procedure, all non-welded seams should be caulked with a compatible urethane caulk that is non-hardening and remains flexible during any atmospheric condition.
- After the unit is hand washed with CFX436/330 Wax and Grease Remover using the two-rag method, and tack wipe remaining lint to remove any surface partials.
- Prior to final paint and after sanding with 320 grit, all bare aluminum, steel or stainless-steel will be cleaned with CFX436/330 Wax and Grease Remover and resealed with ESU 421 Epoxy Primer prior to paint.
- PPG ESSS Polyurethane basecoat paint will be mixed with ESH210 Hardener and ESB800 BC Converter. A minimum of 2 coats will be applied or until “hiding” is achieved, 1.5-3.0 MIL thickness. Let dry.
- After a dry time of 30-45 minutes the unit will be clear coated with ESU621 Urethane mixed with ESH200 Hardener and ESR300 thinner. Two (2) full wet coats will be applied to a minimum of 2.0-4.0 MIL thickness. Let dry.
- Unit should be allowed to dry 24 hours prior to buffing and 7-days prior to the applying decals/lettering/striping.

Compartments
The inside of the apparatus compartments shall be sprayed with White epoxy primer, minimum of 2-coats, prior to 1-coat of spatter type paint followed by 1-2 coats of clear coat. The clear coat allows the compartments a more durable and easier cleaned up finish.

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

Lettering & Reflective Stripe
There shall be 3” gold reflective vinyl letters sixty-60 applied on the apparatus per department specifications. (There shall be a picture supplied by the department of the style of font and layout of the lettering to the salesperson or apparatus manufacturer.)

There shall be applied one (1) 6” White Scotchlite stripe on the cab and body to enhance appearance and to be more visible in low light and dark conditions. There shall also be a reflective stripe installed at the front of the apparatus below the cab grille area, if space permits, and the stripes shall wrap around the apparatus at the rear panel.

There shall be reflective striping installed on the inside of the cab doors per NFPA regulations, minimum of 96 square inches each door.

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 of the apparatus stating all the fluid types and capacities for the apparatus chassis and optional equipment.

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.”