FOUTS BROS

COMMERCIAL STOCK PUMPER

HALE QMAX 1500 GPM
1000 GALLON POLY TANK
164” ALUM BODY

Fouts Bros.
138 Roberson Mill Road
Milledgeville, GA 31061
1-800-948-5045

SCOPE AND GENERAL REQUIREMENTS

It is the intent of the manufacturer to provide a new fire apparatus that will withstand the continuous use encountered in the emergency firefighting service. The apparatus shall be of the latest type, symmetrically proportioned and constructed with due consideration of the load to be sustained.

All parts not specifically mentioned herein, but which are necessary in order to furnish a complete fire apparatus, shall be furnished and shall conform to the best practices known to the fire apparatus industry.

The unit is to be of current year manufacture and is to be new and unused. The bid price shall not include any local, State, or Federal taxes. The Bidder shall not be liable for any State or Federally mandated tax or program after the sale of this apparatus.

These specifications shall be construed as minimum. Should the manufacturer's current published data or specifications exceed these, they shall be considered minimum and be furnished.

PRIME BIDDER, MANUFACTURER

The manufacturer shall be prime bidder and shall identify the location of their facility.

BIDDERS BACKGROUND

Bids are requested from responsible manufacturers who are engaged in the manufacture of fire apparatus. To insure reliable and complete acceptance of the apparatus, bidder shall have been in operation for a minimum of twenty (20) years in the manufacturing of fire apparatus.

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

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

If the manufacturer of the apparatus, or if any owner, shareholder, or immediate relative of an owner or shareholder that has previously been involved in or held ownership in any company that has filed bankruptcy or any other type of reorganization plan, it must be clearly stated in the bid proposal. The statement must include details and dates of all occurrences.

FAMA COMPLIANCE

The apparatus manufacturer must be a current member of the Fire Apparatus Manufacturer's Association (FAMA) and must provide certificate of membership.

FAIR, ETHICAL AND LEGAL COMPETITION

In order to ensure fair, ethical, and legal competition the apparatus manufacturer shall have ever been fined or convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market.

PROPRIETARY PARTS

It is the intention of the purchaser for all bidders to furnish the apparatus with major parts commonly used by the heavy-duty truck manufacturers and open market vendors where as replacement parts are more readily available and at reduced cost. The use of proprietary parts may not be acceptable to the purchaser.

MANUFACTURER'S DISCRETION

Materials, parts, or procedures used are subject to change at manufacturer's discretion at any time to provide equal or better products.

COOPERATIVE PURCHASING

The manufacturer shall be pleased to allow other public agencies to use the purchase agreement resulting from this invitation to bid unless the bidder expressly notes on the proposal form that prices are not available for tag-on. The condition of such use by other agencies shall be that any such agency must make and pursue contact, purchase order/contract, and all contractual remedies with the successful bidder. Such tag-ons shall be done so that the purchaser has no responsibility for performance by either the manufacturer or the agency using the contract.

MANUFACTURING LOCATION

The apparatus shall be manufactured in Milledgeville, Georgia.

PRODUCT QUALITY AND WORKMANSHIP

The components provided and workmanship performed shall be of the highest quality available for this application. Special consideration shall be given to the following areas:

A). Accessibility to various components that require periodic maintenance or lubrication checks.

B). Ease of vehicle and pump operation.

C). Features beneficial to the intended operation of the apparatus.

Construction of the complete apparatus shall be designed to carry the loads intended to meet the road and terrain conditions and speed requirements desired when specified by the purchaser.

Welding shall not be employed in the assembly of the apparatus in a manner that will prevent the removal of any major component part for service and/or repair.

INSURANCE REQUIREMENTS

Each bidder must submit with their bid proposal a Certificate of Insurance listing the proposed manufacturer's product liability insurance coverage. Liability insurance shall be a minimum amount of ten (10) million dollars. Submitted certificate shall name the apparatus manufacturer, insurance company, policy number, and effective dates of the insurance policy. Bids submitted without the required certificate will be considered non responsive and automatically rejected. No exceptions are allowed to the minimum insurance coverage requirement.

The manufacturer shall maintain full insurance coverage on the purchaser's cab and chassis from time of first possession by the manufacturer until the apparatus is delivered and accepted by the purchaser (No Exceptions). Purchaser reserves the right to require proof of insurance from the manufacturer's insurance carrier prior to entering into a contract for the apparatus.

PAYMENT TERMS

Full payment for the apparatus shall be made at time of delivery of the completed vehicle. Due to insurance liability, the apparatus will not be left at the purchaser's location without full acceptance and payment or prior agreement between the Purchaser and Bidder.

Final delivery price shall not include any Local, State or Federal taxes. The manufacturer shall not be liable for any State or Federal mandated tax or program after sale or delivery of the apparatus.

VEHICLE ACCEPTANCE AND DELIVERY

The customer shall pick up the vehicle at the manufacturing facility and shall supply evidence of sufficient insurance coverage to transport the vehicle.

FUEL TANK FILLED AT DELIVERY

The fuel tank and DEF tank (if applicable) shall be filled upon final delivery at the factory.

ONE YEAR APPARATUS WARRANTY

The complete apparatus detailed herein shall be warranted against defects in materials and workmanship for a period of twelve (12) months, effective upon pick up or delivery of the completed apparatus to the purchaser, as detailed in the respective warranty documents. Any unauthorized alterations or modifications to the apparatus shall void this warranty.

Other warrantees, as provided by individual component manufacturers may extend beyond this warranty.

APPARATUS BODY WARRANTY, TEN YEAR

The apparatus body as detailed herein shall have a structural warranty against defects in materials and workmanship for a period of ten (10) years, effective upon final payment in full by the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. Any unauthorized alterations or modifications to the body shall void this warranty.

PLUMBING WARRANTY, TEN YEAR

A Stainless Steel Plumbing/Piping warranty shall be provided by the apparatus manufacturer for products of its manufacture to be free from defects in material and workmanship, under normal use and service, for a period of ten (10) years effective upon final payment in full by the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. Any unauthorized alterations or modifications to the plumbing shall void this warranty.

PAINT WARRANTY, FIVE YEAR

The finish paint as used on the proposed apparatus shall be warranted against defects in materials and workmanship for a prorated period of five (5) years, effective upon final payment in full by the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. Any unauthorized alterations or modifications to the apparatus shall void this warranty.

TANK WARRANTY, LIFETIME

For normal fire department applications, the tank shall have a limited Lifetime warranty that provides warranty service for the life of the fire apparatus in which the tank is installed. Warranties are transferable if the apparatus ownership changes by requesting the transfer from UPF. In applications where the tank will be subject to severe conditions, the tank may have a warranty unique to the application that is clearly defined for each such application.

APPARATUS ELECTRICAL WARRANTY, TWO YEAR

The apparatus electrical system as detailed herein shall have a electrical warranty against defects in materials and workmanship for a period of two (2) years, effective upon final payment in full by the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. Any unauthorized alterations or modifications to the electrical system shall void this warranty.

OVERALL HEIGHT

The overall height shall be 9'10".

OVERALL LENGTH

The overall length shall be no longer than 32.00'.

OVERALL WIDTH

The overall width of the body shall be 96.00" wide; chassis mirrors will extend out past this width.

WHEELBASE

The wheelbase shall be 237.00".

PUMP HOUSE DIMENSIONS

The pump module shall be 42.00" wide.

ANGLE OF APPROACH

The angle of approach for the apparatus shall not be less than eight (8) degrees as specified by the current edition of NFPA 1901/ 1906.

ANGLE OF DEPARTURE

The angle of departure for the apparatus shall not be less than eight (8) degrees as specified by the current edition of NFPA 1901/ 1906.

NFPA 1901 COMPLIANCE

The National Fire Protection Association standard #1901 (most recent edition) is hereby adopted and made a part of these specifications, the same as if they were written out in full detail, insofar as they apply with the exception of any sections dealing with "Equipment Recommended for Various Types of Apparatus". Bidders are to provide only the equipment requested herein and the Department will supply the rest before the apparatus is put into service. The unit shall comply with all federal, state, ICC, and DOT motor vehicle regulations, standards, and laws relating to commercial vehicles as well as to fire apparatus on the date of the bid.

ROAD TEST CERTIFICATION

A road test shall be conducted with the finished apparatus fully loaded. During this time, the apparatus shall not show loss of power and/or overheating. The transmission driveshaft or shafts and rear axle shall run free from abnormal vibration or noise throughout the operating range of the apparatus. The apparatus, when loaded, shall have not less than 25% or more than 45% of the weight on the front axle and not less than 55% or more than 75% on the rear axle.

A). The apparatus must be capable of accelerating to 35 mph from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed RPM of the engine.

B). The apparatus must be capable of accelerating from a steady speed of 15 mph to a true speed of 35 mph within 30 seconds. This shall be accomplished without moving the gear selector.

C). The fully loaded apparatus shall be capable of obtaining a speed of 50 to 55 mph on a level concrete highway.

D). The manufacturer shall furnish copies of the engine installation approvals signed by the appropriate engine company upon delivery of the chassis to the Fire Department.

E). The manufacturer shall furnish copies of the transmission approval signed by the transmission manufacturer upon delivery of the chassis to the Fire Department.

F). The manufacturer shall furnish copies of the front and rear axle approvals upon delivery of the apparatus to the Fire Department.

ROAD TEST FAILURE

In the event the apparatus fails to meet the test requirements of these specifications on the first trials, second trials may be made at the option of the manufacturer within thirty (30) days of the first trials. Such trials shall be final and conclusive and failure to comply

with changes, as the purchaser may consider necessary to conform to any clause of the specifications within thirty (30) days after notice is given to the manufacturer of such changes, shall be cause for rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the purchaser, or its use by the purchaser during the above-specified period with permission of the manufacturer, shall not constitute acceptance.

VEHICLE TOP SPEED

The rear axle shall be geared for a top speed of 65 to 68 mph at engine governed RPM.

NFPA TOP SPEED STATEMENT

NFPA-1901, 2009 Edition - 4.15.2. The maximum top speed of fire apparatus with a GVWR over 26,000 lbs. shall not exceed either 68 MPH or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.

NFPA-1901, 2009 Edition - 4.15.3. If the combined water tank and foam agent tank capacities on the fire apparatus exceed 1250 gallons, or the GVWR of the vehicle is over 50,000 lbs., the maximum top speed of the apparatus shall not exceed either 60 MPH or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.

CAB SAFETY SIGNS

The following safety signs shall be provided in the cab:

- One (1) FAMA 10 sign shall be visible to the driver. "Flying Object Crash Hazard. All equipment required to be used in emergency response must be securely fastened. Loose items may injure or kill during a crash."

- One (1) FAMA 07 sign shall be visible from each seat. "Crash Hazard. Occupants must be seated and belted when vehicle is in motion. Use only OEM approved belts. Unbelted occupants

- One (1) FAMA 15 sign shall be visible from each seat. "Crash Hazard. Do not wear helmet while seated. Serious head or neck injury may result from helmet use in cab. Failure to comply may injureor kill."

- One (1) FAMA 17 sign shall be visible to the driver. "Backing Hazard. Ensure that personnel are clear before driving in reverse. Always use a spotter when backing. Failure to comply may injure or kill.

- One (1) FAMA 42 sign shall be inside of the driver door. "Sirens produce loud sounds that may damage hearing. Roll up windows. Wear hearing protection.

Use only for emergency response. Avoid exposure to siren sound outside of vehicle."

- “Do Not Move Apparatus When Light Is On” sign adjacent to the warning light indicating a hazard if the apparatus is moved (as described in subsequent section).

CHASSIS DATA LABELS

The following information shall be on labels affixed to the vehicle:

Fluid Data:

- Engine oil
- Engine coolant
- Chassis transmission fluid
- Pump transmission lubrication fluid
- Pump primer fluid (if applicable)
- Drive axle(s) lubrication fluid
- Air conditioning refrigerant
- Air conditioning lubrication
- Power steering fluid
- Cab tilt mechanism fluid (if applicable)
- Transfer case fluid
- Equipment rack fluid (if applicable)
- Air compressor system lubricant
- Generator system lubricant (if applicable)

Chassis Data:

- Chassis Manufacturer
- Production Number
- Year Built
- Month Manufactured
- Vehicle Identification Number

Location shall be in the driver's compartment of the chassis cab.

OVERALL HEIGHT, LENGTH, GVW DATA PLAQUE

A "high visibility" plate shall be permanently mounted in the cab, visible to driver when seated.

The plate shall show the overall height of the completed apparatus in feet and inches, the overall length of the completed apparatus in feet and inches.

The plate shall also show the gross vehicle weight rating (GVWR) in tons.

Text shall also be supplied on the plate, indicating that the information shown is current upon completion of the apparatus. If the overall height of the apparatus changes after the apparatus is put into service, then the purchaser must revise the dimensions on the plate.

"NO RIDE" LABEL

A label shall be located on the vehicle at the rear step areas, and at any cross walkways, if they exist. The label(s) shall warn personnel that riding in or on these areas while the vehicle is in motion is prohibited.

COMMERCIAL CHASSIS SPECIFICATION

CHASSIS PROVIDER

The chassis, as detailed in these specifications, shall be ordered and supplied by the apparatus manufacturer.

FREIGHTLINER CHASSIS

A Freightliner 4-door chassis per the attached specifications shall be furnished:

CHASSIS PAINT COLOR

The cab shall be painted a single color.

Color: Fouts Bros. Red

CHASSIS MODIFICATIONS

The following modifications and installations shall be performed on the chassis upon delivery to the apparatus manufacturer:

TIRE PRESSURE MANAGEMENT

There will be a RealWheels LED AirSecure™ tire alert pressure management system provided, that will monitor each tire's pressure. A sensor will be provided on the valve stem of each tire for a total of six (6) tires.

The sensor will calibrate to the tire pressure when installed on the valve stem for pressures between 10 and 200 psi. The sensor will activate an integral battery operated LED when the pressure of that tire drops 5 to 8 psi.

Removing the cap from the sensor will indicate the functionality of the sensor and battery. If the sensor and battery are in working condition, the LED will immediately start to flash.

HUB COVERS (front)

Stainless steel hub covers shall be provided on the front axle.

HUB COVERS (rear)

A pair of stainless steel high hat hub covers shall be provided on rear axle hubs.

COVERS, LUG NUT, CHROME

Chrome lug nut covers shall be supplied on front and rear wheels.

EXHAUST SYSTEM

The chassis exhaust system shall be provided as detailed in the chassis specifications. NO modifications shall be made by the apparatus manufacturer.

BUMPER

The front bumper shall be provided as detailed in the chassis specifications.

CHASSIS PREPARATION

Prior to installation of the fire pump, apparatus body, or cab steps, all components which extend out beyond the chassis frame rails shall be removed and relocated to the area within the frame rails

CHASSIS TOW HOOKS

The front tow hooks shall be provided as detailed in the chassis specifications.

TOW HOOKS – REAR

Two (2) heavy-duty cast-iron tow hooks, shall be installed at the rear of the body below the rear step.

FRONT MUD FLAPS

A pair of black rubber mud flaps shall be provided as detailed in the chassis specifications.

REAR MUD FLAPS

A pair of black rubber mud flaps, with the Manufacturer's logo, shall be provided and installed behind the rear wheels.

VEHICLE DATA RECORDER

The apparatus shall be equipped with a Class1 “Vehicle Data Recorder and Seat Belt Warning System” (VDR/SBW) that is connected to the power train CAN (Controller Area Network) bus consisting of transmission (TCM), engine control (ECM) and antilock brake (ABS) modules mounted on the apparatus. The VDR/SBW will function per NFPA 1901-2009 sections 4.11 (Vehicle Data Recorder) utilizing the power train’s J1939 data and 14.1.3.10 (Seat Belt Warning) using the Class1 “Seat Belt Input Module” for seat occupied and belt status information.

The VDR data shall be downloadable by USB cable to a computer using either Microsoft™ or Apple™ Operating Systems using Class 1/ O.E.M. supplied reporting software.

SEAT BELT WARNING SYSTEM

There shall be a seat belt indicator system supplied in the cab. The indicator system shall indicate seat belt use for each individual seating position when the seat is occupied, the seat belt remains unfastened and the parking brake is released.

A Class1 model 118620 display panel shall be supplied in the dash area. The panel shall have an audible indicator and a red light display to indicate that a seat belt has not been fastened.

VEHICLE DATA RECORDER DOWNLOAD HARNESS

A Class1 model #629-00025 USB VDR download harness shall be supplied with the system to allow the data to be downloaded to a computer.

CENTER CONSOLE

A center console shall be furnished and shall be located between the driver and officer's seats. The top face of the console shall be designed as the switch panel for all emergency light switches.

BATTERY SYSTEM

The battery system shall be supplied with the chassis.

KEYLESS IGNITION SWITCH

One (1) non-removable, keyless style ignition switch shall be provided with the chassis.

MASTER BATTERY SWITCH

A master battery switch shall be provided as detailed in the chassis specifications.

KUSSMAUL "PUMP PLUS" BATTERY CHARGER

A Kussmaul Auto Charge 1200 PP PLC, model # 091-193-12, 40 amp battery conditioner shall be supplied.

The battery saver component shall eliminate drain on vehicle’s battery system when in vehicle is not in use. The system shall automatically disconnect auxiliary vehicle loads from battery when the charger is energized.

The system shall have a built-in sense circuit to check battery voltage 120 times a second; the system shall compensate for voltage drop in charging wires and provide quick recharging with no over-charging.

AUXILIARY AIR COMPRESSOR

A Kussmaul 12V air compressor shall be supplied. The compressor system shall be designed to maintain the air pressure in the chassis brake system while not in use. A pressure switch shall sense air pressure drop and engage the compressor which shall run until the pressure is restored.

120 VOLT SHORELINE CONNECTION - "SUPER" AUTO EJECT

One (1) Kussmaul "Super" Auto Eject model 091-55-20-120, automatic, 120 volt, 20 amp shoreline disconnect shall be provided for the on board, 110 volt battery charging systems.

AUTO-EJECT MATING PLUG

A Kussmaul model # 5-20P-H, 20 amp mating female cord end shall be shipped loose with the apparatus to allow the Fire Department to connect cord end to a Fire Department provided charging cord.

BATTERY CHARGER DISPLAY/ COVER

One (1) Kussmaul model 091-55-234-YW universal single battery bank voltage display/ auto eject cover shall be supplied with the charger.

The cover shall be yellow in color.

ELECTRICAL INLET LOCATION

The electrical inlet shall be installed on the left hand side cab near the driver's door.

BACK-UP ALARM

One (1) 97 DB back up alarm shall be provided and installed at the rear of the unit. It shall be wired to activate when the transmission is placed in reverse.

AIR HORNS

Two (2) Hadley chrome plated air horns shall be installed at the front of the vehicle. The air horns shall be mounted in full compliance of NFPA. The supply lines shall be dual 1/4" lines with equal distance from each horn.

Each air horn shall be mounted, one (1) each side, on the side of the hood.

Both air horns shall be controlled by the horn on the KW steering wheel.

ELECTRIC TRAFFIC HORN AND AIR HORN SELECTOR SWITCH

One (1) selector switch shall be provided on the cab's dash that will allow the chassis steering wheel horn button to activate either the electric traffic horn or air horn system.

PUMP, MODULE, AND RELATED ITEMS

NFPA 1901 COMPLIANT PUMP

The fire pump and related plumbing on the specified apparatus shall be installed in accordance with applicable NFPA 1901 guidelines at the time the contract was placed.

HALE QMAX PUMP ASSEMBLY

The pump shall be of a size and design to mount on the chassis rails of commercial and custom truck chassis.

The entire pump shall be assembled and tested at the pump manufacturer's factory.

The pump shall be driven by a drive line from the truck transmission. The engine shall provide sufficient horsepower and RPM to enable pump to meet and exceed its rated performance.

The entire pump, both suction and discharge passages, shall be hydrostatically tested to a pressure of 600 PSI. The pump shall be fully tested at the pump manufacturer's factory to the performance spots as outlined by the latest NFPA Pamphlet No. 1901. Pump shall be free from objectionable pulsation and vibration.

The pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI (2069 bar). All metal moving parts in contact with water shall be of high quality bronze or stainless steel. Pump utilizing castings made of lower tensile strength cast iron not acceptable.

Pump body shall be horizontally split, on a single plane in two (2) sections for easy removal of entire impeller assembly including wear rings and bearings from beneath the pump without disturbing piping or the mounting of the pump in chassis.

The pump body shall extend as one piece across the truck chassis from side mounting to side mounting and incorporate the discharge manifolding system with a minimum of (2) 4” ports and (7) 3” ports.

The pump shall have one (1) double suction impeller. The pump body shall have two opposed discharge volute cutwaters to eliminate radial unbalance. (No exceptions)

Pump shaft to be rigidly supported by three bearings for minimum deflection. One high lead bronze sleeve bearing to be located immediately adjacent to the impeller (on side opposite the gearbox). The sleeve bearing is to be lubricated by a force fed, automatic oil lubricated design, pressure balanced to exclude foreign material. (No exceptions.) The remaining bearings shall be heavy-duty, deep groove ball bearings in the gearbox and they shall be splash lubricated.

Pump impeller shall be hard, fine grain bronze of the mixed flow design; accurately machined and individually balanced. The vanes of the impeller intake eyes shall be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.

Impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body, and of wrap-around double labyrinth design for maximum efficiency. (No exceptions.)

The pump shaft shall be heat-treated, electric furnace, corrosion resistant stainless steel to be superfinished under for longer shaft life. Pump shaft must be sealed with double-lip oil seal to keep road dirt and water out of gearbox.

PUMP WARRANTY

The pump shall be covered by the Hale Pro-Tech 5-year pump warranty against workmanship and materials. Both parts and labor shall be covered for the first 2 years and years 3-5 shall have parts only coverage.

GEARBOX

Pump gearbox shall be of sufficient size to withstand up to 16,000 lbs. ft. of drive through torque of the engine system. The drive unit shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature.

The gearbox drive shafts shall be of heat-treated chrome nickel steel and at least 2-3/4 inches in diameter, on both the input and output drive shafts. They shall withstand the full torque of the engine.

All gears, both drive and pump, shall be of highest quality electric furnace chrome nickel steel. Bores shall be ground to size and teeth integrated and hardened, to give an extremely accurate gear for long life, smooth, quiet running, and higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrust. (No exceptions.)

The pump ratio shall be selected by the apparatus manufacturer to give maximum performance with the engine and transmission selected.

If the gearbox is equipped with a power shift, the shifting mechanism shall be a heat treated, hard anodized aluminum power cylinder, with stainless steel shaft. An in-cab control for rapid shift shall be provided that locks in road or pump.

MECHANICAL SEAL

The pump shall have a mechanical seal. One (1) only required on the suction (inboard) side of the pump. The mechanical seal shall be two (2) inches in diameter and shall be

spring loaded, maintenance free and self-adjusting. Mechanical seal construction shall be a carbon sealing ring, stainless steel coil spring, Viton rubber cup, and a tungsten carbide seat with Teflon backup seal.

1500 GPM FIRE PUMP SPECIFICATIONS

The centrifugal type fire pump shall be a Hale model QMAX midship mounted with a rated capacity of 1500 GPM. The pump shall meet NFPA 1901 requirements.

The pump shall be certified to meet the following deliveries:

1500 gpm (5678 L/M) @ 150 psi (10.3 bar)
1050 gpm (3974 L/M) @ 200 psi (13.8 bar)
750 gpm (2839 L/M) @ 250 psi (17.2 bar)

LEFT SIDE INLET - 6.00"

One (1) 6.00" steamer inlet with male NST threads shall be provided on the left side of the pump module. The inlet shall have a removable screen.

INLET CAP

One (1) 6.00" chrome plated cap shall be provided on the intake. The threads shall be NST and the cap shall be equipped long handles.

RIGHT SIDE INLET - 6.00"

One (1) 6.00" steamer inlet with male NST threads shall be provided on the right side of the pump module. The inlet shall have a removable screen.

INLET CAP

One (1) 6.00" chrome plated cap shall be provided on the intake. The threads shall be NST and the cap shall be equipped long handles.

TRANSMISSION LOCK-UP DEVICE

The automatic chassis transmission shall be delivered to the body builder with high gear lock up device installed on the automatic transmission, to allow proper gear ratio for pump operation. The transmission shall be programmed by the chassis manufacturer to include this feature.

DRIVELINE MODIFICATION

The chassis driveline shall be modified to accommodate any changes required by the installation of the fire pump.

PUMP SHIFT - AIR OPERATED

A Hale air operated pump shift shall be pneumatically controlled using a power shifting cylinder. The power shift control valve shall be mounted in the cab.

Provisions shall be made for placing the pump drive system in operation using controls and switches that are clearly identified and within convenient reach of the operator. Indicator and interlock systems shall be provided as required by this pump control section.

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

The chassis driveline or transmission retarder, engine compression brake, or engine exhaust brake shall be automatically disengaged for pumping operations.
The pump shifting device used between the engine and the pump shall be equipped with a means to prevent unintentional movement of the control device from its set position.

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

A GREEN indicator light shall be located in the driving compartment. This indicator light shall be energized when the pump shift has been completely and shall be marked "PUMP ENGAGED".

A second GREEN indicator light in the driving compartment and a GREEN indicator light located at the pump operator's position shall be provided and energized when both the pump shift has been completed and the chassis transmission is engaged in pump gear.

PIPING AND MANIFOLDS

All the plumbing and/or piping in the pump module shall be of 304 stainless steel or flexible piping for long life. All stainless steel castings shall be a minimum of schedule 40.

The flexible piping shall be black SBR synthetic rubber hose with 300 working pounds and 1200 pounds burst pressure for sizes 1.50" through 4.00”. Sizes 0.75”, 1.00” and 5.00” are rated at 250 pound working and 1,000 pound burst pressure. All sizes are rated at 30 HG vacuum. Reinforcement consists of two (2) plies of high tensile strength tire cord for all sizes sand helix wire installed in sizes 1.00" through 5.00"” for maximum

performance in tight bend applications. The material has a temperature rating of –40 degrees F to 210 degrees F. Full flow couplings are precision machined from high tensile strength stainless steel. All female couplings are brass. 0.75” and 1.00” male and Victaulic couplings are brass.

HOSE THREADS- NST

All hose threads shall be National Standard Thread (NST) on all base threads on the apparatus intake and discharges, unless otherwise specified.

PUMP CERTIFICATION

The fire pump shall be tested to meet the flow requirements of the pump. A written certification shall be provided with the completed vehicle.

RELIEF VALVE

There shall be one (1) suction side stainless steel relief pump valve provided on the pump system. The valve shall be configured with a 2.50" male NST discharge outlet.

FIRE PUMP PRIMING SYSTEM

A Trident Model #31.001.2 air operated priming system shall be installed. The unit shall be of all brass and stainless steel construction and designed for fire pumps of 1,250 GPM (4,600 LPM) or more. The primer shall be three-barrel design with direct connection to the Hale fire pump. The primer shall automatically drain when the panel control actuator is not in operation. The connection to the pump shall have an integral Hale strainer.

The priming system shall be capable to a vertical lift to 22.00" of mercury and shall be fully compliant to applicable NFPA standards for vertical lift. The system shall create vacuum by using air from the chassis air brake system through a three-barrel multi-stage internal “venturi nozzles” within the primer body.

The primer control shall have a manually operated, panel mounted “push to prime” air valve; which will direct air pressure from the air brake storage tank to the primer body. To prevent freezing, no water shall flow to and from the panel control.

U.L. TEST POINTS

Two (2) U.L. test plugs shall be mounted on the pump panel for testing of the vacuum and pressures.

MASTER PUMP DRAIN

A rotary type, 12 port master drain valve shall be provided and controlled at the lower portion of the side pump panel. The valve shall be located in pump compartment lower than the main body and connected in such a manner as to allow complete water drainage of the pump body and all required accessories. Water shall be drained below the apparatus body and away from the pump operator.

PUMP COOLING/BYPASS LINE

A 0.375" pump cooling/bypass line shall be provided from the pump discharge manifold directly into the tank. This discharge shall implement a Class 1 model 38BV all brass ball type 1/4 turn valve with chrome plated handle control located on the pump panel.

SENTRY GOVERNOR PRESSURE SYSTEM

The apparatus shall be equipped with the Class1 Sentry Pressure Governor System. The Sentry Pressure Governor System (SPGS) is a J1939 CAN based pressure governing system that consists of a Sentry display, Twister throttle, pressure transducers and associated wiring. The SPGS must be capable of dual station control allowing the system to be operated from separate locations on the apparatus (dual systems do not require additional transducers). The SPGS' advanced diagnostic capability instantly notifies the operators of any out of parameter condition. It also notifies the operator of actions performed and suggests operation methods in the event of an out of parameter condition. Graphic diagnostics also provides wiring and troubleshooting information.

The Sentry display utilizes Class1's UltraView technology. It is a custom tooled and programmed, 4.30", full color LCD display with (8) buttons. It shall be bonded for direct sunlight viewing. The Sentry is sealed to IP67 and allows for flush, pedestal or rear mounting options. The sentry display can be oriented in either the portrait or landscape orientations. The Sentry display provides the interface to the Engine Control Module (ECM) mounted on the engine. The Sentry display will operate as a pressure sensing governor (PSG) utilizing the engines J1939 CAN data for optimal resolution and response. The Sentry display utilizes control algorithms that minimize pressure spikes during low or erratic water supply situations. The Sentry display shall be backwards compatible to any engine that supplies J1939 RPM, Temperature and Oil Pressure information providing the ability to maintain a consistent fleet fire-fighting capability and reduce operator cross training and confusion.

The Sentry display is capable of storing up to 12 different languages. It shall provide the operator with the ability to adjust the display brightness for day and night mode operations. The following parameters visible at all times:

- Pump Intake Pressure
- Pump Discharge Pressure
- Engine RPM
- Engine Oil Pressure

- Engine Coolant Temperature
- Transmission Temperature
- System Voltage
- Throttle Ready Interlock Status
- Pump Engaged Interlock Status
- OKAY to Pump Interlock Status
- Operating Mode Status (RPM or Pressure)
- Target Pressure Indication (when in pressure mode)

TWISTER THROTTLE

The Twister throttle is a J1939 CAN based throttle device that communicates directly with the Sentry display. It features a robust knob operator that can be configured to operate the engine throttle in either the clock wise or counter clockwise directions. It features a large stationary idle button in the center of the knob. It also provides the operator with “Throttle Ready” and “Throttle Active” LED indicators. The Twister throttle can be mounted away from the Sentry Display giving the operator hand control at waist level. This also allows the Sentry display to be mounted at eye level assuring that the operator has the most comfortable and ergonomic control possible.

LEFT SIDE -- 2-1/2" GATED INTAKE

One (1) 2.50" gated suction intake shall be installed on left side pump panel to supply the fire pump from an external water supply. The control valve shall be a quarter turn ball valve and shall have 2.50" NST female thread of chrome plated brass.

An Akron Brass 2.50" generation II swing-out valve shall be provided for the left hand side auxiliary suction.

The side auxiliary inlet will incorporate a quarter-turn ball valve with a swift-type manual control located adjacent the intake. It shall have a chrome plated zinc handle with a recessed area for 1.00” x 3.00” identification tag.

There shall be an Class1 model 0.75" quarter turn drain valve included. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

One (1) 2.50" chrome plated plug shall be provided. The plug shall be equipped with MNST threads, rocker lugs, and a 12.00" chain.

TANK TO PUMP LINE

One (1) 3.00" tank to pump line shall be provided for connection between the water tank and the fire pump.

An Akron Brass 3.00" generation II swing-out valve shall be provided for the tank to pump line.

The quarter turn valve shall be manually operated with a Class 1 locking push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00” x 3.00” identification tag. The controls shall be locked in any position.

TANK FILL/ RECIRULATION LINE

One (1) 2.00" fire pump to water tank refill and pump bypass cooler line shall be provided. The valve shall be a full flow quarter turn ball valve with 2.00" piping and flex hose to tank.

An Akron Brass 2.00" generation II swing-out valve shall be provided between the pump discharge manifold and the water tank.

The quarter turn valve shall be manually operated with a Class 1 locking push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00” x 3.00” identification tag. The controls shall be locked in any position.

LEFT SIDE FRONT PANEL DISCHARGE

One (1) 2.50" discharge with valve shall be located on the left side panel.

An Akron Brass 2.50" generation II swing-out valve shall be provided for the discharge.

The valve shall be manually operated with a swing handle from the left hand side pump operator's panel.

The discharge shall be equipped with an integral, stainless steel, 30-degree elbow terminating with 2.50" MNST threads.

One (1) Class1 2.50" chrome plated cap with self-venting lungs shall be provided. The cap shall be equipped with FNST threads, rocker lugs, and a 12.00" chain.

There shall be an Class1 model 0.75" quarter turn drain valve included. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

A 2.50" Class1 discharge pressure gauge (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters.

LEFT SIDE REAR PANEL DISCHARGE

One (1) 2.50" discharge with valve shall be located on the left side panel.

An Akron Brass 2.50" generation II swing-out valve shall be provided for the discharge.

The valve shall be manually operated with a swing handle from the left hand side pump operator's panel.

The discharge shall be equipped with an integral, stainless steel, 30-degree elbow terminating with 2.50" MNST threads.

One (1) Class1 2.50" chrome plated cap with self-venting lungs shall be provided. The cap shall be equipped with FNST threads, rocker lugs, and a 12.00" chain.

There shall be an Class1 model 0.75" quarter turn drain valve included. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

A 2.50" Class1 discharge pressure gauge (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters.

RIGHT SIDE FRONT PANEL DISCHARGE

One (1) 3.00" discharge with valve shall be located on the right side panel.

An Akron Brass 3.00" generation II swing-out valve shall be provided for the discharge. The valve shall be of the slow-close design so as not to allow the valve to open or close in less than 3 seconds.

The quarter turn valve shall be manually operated with a Class1 locking push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00” x 3.00” identification tag. The controls shall be locked in any position.

The 3.00" outlet shall be equipped with an integral, stainless steel, 30-degree elbow terminating with 3.00" MNST threads.

One (1) Class1 3.00" chrome plated cap with self-venting lungs shall be provided. The cap shall be equipped with FNST threads, rocker lugs, and a 12.00" chain.

There shall be an Class1 model 0.75" quarter turn drain valve included. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

A 2.50" Class1 discharge pressure gauge (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters.

RIGHT SIDE REAR PANEL DISCHARGE

One (1) 2.50" discharge with valve shall be located on the right side panel.

An Akron Brass 2.50" generation II swing-out valve shall be provided for the discharge.

The quarter turn valve shall be manually operated with a Class1 locking push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00” x 3.00” identification tag. The controls shall be locked in any position.

The discharge shall be equipped with an integral, stainless steel, 30-degree elbow terminating with 2.50" MNST threads.

One (1) Class1 2.50" chrome plated cap with self-venting lungs shall be provided. The cap shall be equipped with FNST threads, rocker lugs, and a 12.00" chain.

There shall be an Class1 model 0.75" quarter turn drain valve included. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

A 2.50" Class1 discharge pressure gauge (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters.

CROSSLAY PRE-CONNECT DISCHARGE #1

One (1) 1.75" crosslay pre-connect shall be installed in the pump module above the pump. The crosslay shall be plumbed using 2.00" stainless steel pipe, and/or flexible piping. A minimum of one (1) grooved pipe coupling shall be furnished in this assembly, if necessary, to allow for flex and serviceability.

The crosslay discharge shall terminate below the hose bed floor with a 1.50" NSTM chicksan swivel adapter. The crosslay hose bed floor shall be slotted to allow the swivel to extend up through the floor, allowing the pre-connected hose to be pulled off either side of the apparatus without kinking the hose at the coupling connection.

Crosslay discharge #1 shall be designed to have a minimum total capacity of 3.5 cubic feet as required by NFPA -1901 to accommodate a minimum of 200 feet of 1.75" fire hose.

An Akron Brass 2.00" generation II swing-out valve shall be provided for crosslay #1 discharge.

The quarter turn valve shall be manually operated with a Class 1 locking push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00” x 3.00” identification tag. The controls shall be locked in any position.

There shall be an Class1 model 0.75" quarter turn drain valve included. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

A 2.50" Class1 discharge pressure gauge (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters.

CROSSLAY PRE-CONNECT DISCHARGE #2

One (1) 1.75" crosslay pre-connect shall be installed in the pump module above the pump. The crosslay shall be plumbed using 2.00" stainless steel pipe, and/or flexible piping. A minimum of one (1) grooved pipe coupling shall be furnished in this assembly, if necessary, to allow for flex and serviceability.

The crosslay discharge shall terminate below the hose bed floor with a 1.50" NSTM chicksan swivel adapter. The crosslay hose bed floor shall be slotted to allow the swivel to extend up through the floor, allowing the pre-connected hose to be pulled off either side of the apparatus without kinking the hose at the coupling connection.

Crosslay discharge #2 shall be designed to have a minimum total capacity of 3.5 cubic feet as required by NFPA -1901 to accommodate a minimum of 200 feet of 1.75" fire hose.

An Akron Brass 2.00" generation II swing-out valve shall be provided for crosslay #2 discharge.

The quarter turn valve shall be manually operated with a Class 1 locking push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00” x 3.00” identification tag. The controls shall be locked in any position.

There shall be an Class1 model 0.75" quarter turn drain valve included. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

A 2.50" Class1 discharge pressure gauge (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters.

DUNNAGE AREA

A dunnage area shall be provided above the pump enclosure for equipment mounting and storage. This area shall be furnished with a removable 0.1875" aluminum floor and shall be enclosed on the sides.

NOTE: The size of this storage area may vary when top mounted crosslays, booster reel(s), etc., are specified and located in this area.

CROSSLAY DIVIDER

One (1) crosslay divider shall be provided, one (1) between the #1 and #2 crosslay.

The divider shall be constructed from 0.188" thick abraded aluminum plate and shall be mounted on a base T-extrusion that provides lower support the length of the divider.

VINYL CROSSLAY COVER

The crosslays shall be equipped with a heavy duty 18 oz. vinyl cover with side flaps. The top portion will be fastened to the pump house with Velcro and the side flaps will be held in place with a hook and bungee system.

The vinyl cover shall be red in color.

DECK GUN DISCHARGE

One (1) 3.00" discharge with valve shall be located on the top of the pump. The valve shall be a quarter turn ball type and fixed pivot design to allow easy operation at all pump pressures. The 3.00" outlet shall be equipped with an integral, stainless steel flange terminating with 3.00" Victaulic. The discharge shall be plumbed to the top of the module using 3.00” schedule 10 stainless steel pipe. The pipe shall terminate in a 3.00” MNPT thread. The pipe shall be held in place by a 2 piece stainless steel bracket.

An Akron Brass 3.00" generation II swing-out valve shall be provided for the discharge. The valve shall be of the slow-close design so as not to allow the valve to open or close in less than 3 seconds.

The quarter turn valve shall be manually operated with a Class1 locking push pull control rod.

One (1) Class1 automatic 0.75" drain valve(s) shall be installed. The valve shall have an all brass body with heavy duty neoprene seal. The valve shall be normally open and shall close at 6 psi using an all brass check assembly with stainless steel spring.

A 2.50" Class1 discharge pressure gauge (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters.

4.50" MASTER PRESSURE GAUGE

One (1) Class1, 4.50" liquid filled master pressure gauge with stainless steel bezel shall be provided, reading from 0 Hg. to 400 psi. It shall be accurate to within 1%. The gauge shall have a white face and black markings. The gauge shall be located on the pump operator's panel.

4.50" MASTER INTAKE GAUGE

One (1) Class 1, 4.50" liquid filled master intake gauge(s) with stainless steel bezel shall be provided, reading from -30" Hg. to 400 psi. It shall be accurate to within 1%. The gauge shall have a white face and black markings. The gauge shall be located on the pump operator's panel.

LED WATER LEVEL GAUGE (PUMP PANEL)

One (1) Hale model # “ITL-40R” Tank Level Gauge for indicating water level shall be installed on the pump operator's panel. The tank level gauge shall indicate the liquid level or volume on an easy to read LED display with a visual indicator at nine (9) precise levels, using one (1) color. The system shall include the ability to display “text messages” and have built-in diagnostic capabilities. Additional secondary displays (if requested) are to be easily integrated and will receive data from the same source as the Master Display.

The LED display shall be red in color.

PUMP, MODULE, AND RELATED ITEMS

ALUMINUM PUMP MODULE CONSTRUCTION

The pump module shall be constructed entirely of extrusions and aluminum plate. The framework shall be formed from beveled aluminum alloy extrusions. The pump module design must allow normal frame deflection through isolation mounts without imposing stress on the pump module structure or side running boards. The pump module shall consist of a welded framework, properly braced to withstand chassis frame flexing. The pump module support shall be bolted to the frame rails of the chassis.

INDEPENDENT PUMP MODULE

The pump module shall be fabricated as individual unit independent from the body.

PUMP MODULE WIDTH

Pump Module to be 42.00" side (side to side).

PUMP PANEL -- SIDE MOUNT

The pump operator's control panel shall be located on the left hand side of the apparatus. The pump enclosure side panels shall be completely removable and designed for easy access and servicing.

HINGED GAUGE PANEL

A full width, horizontally hinged gauge access panel shall be located on the left hand side of the pump module above the main control panel. Two (2) black powder coated SouthCo. push type locks shall be provided along with lanyards.

PUMP ENCLOSURE ACCESS DOOR -- RIGHT SIDE UPPER

A pump panel access door shall be provided on the upper right side of the side mount pump enclosure. The access door shall be approximately 24.00" high and as wide as possible. Three (3) black powder coated SouthCo. push type locks shall be provided along with lanyards.

The drains located on the right hand side panel shall be fastened to the lower panel, which shall be stationary.

PUMP PANEL LIGHT SHIELD, LH SIDE PANEL

One (1) LED strip light shall be installed under an instrument panel light hood on the left side pump panel.

PUMP PANEL LIGHT SHIELD, RH SIDE PANEL

One (1) LED strip light shall be installed under an instrument panel light hood on the right side pump panel.

A weather resistant switch, located on the pump operator's panel shall be provided to activate the lights.

PUMP COMPARTMENT LIGHTS (LED)

Two (2) clear LED lights shall be provided inside the pump compartment area. Each shall be switched.

LEFT SIDE RUNNING BOARD

The left pump panel shall be equipped with a side running board. The running board shall be constructed of 0.125" embossed fire apparatus bright aluminum treadplate. It shall be a minimum of approximately 11.00" deep x the width of the module. The running board shall have an upward bend on the inside edge to act as a kick plate. The running board shall be attached to a frame mounted outrigger support structure. The running board shall have a 3.00" downward bend on the front and side faces with a 1.00" underside return for superior strength.

RIGHT SIDE RUNNING BOARD

The right pump panel shall be equipped with a side running board. The running board shall be constructed of 0.125" embossed fire apparatus bright aluminum treadplate. It shall be a minimum of approximately 11.00" deep x the width of the module. The

running board shall have an upward bend on the inside edge to act as a kick plate. The running board shall be attached to a frame mounted outrigger support structure. The running board shall have a 3.00" downward bend on the front and side faces with a 1.00" underside return for superior strength.

FRONT PUMP HOUSE COVER

The front of the pump enclosure shall be covered with .125" aluminum treadplate.

WARNING LABEL, FAMA 22, HOSE RESTRAINT REQUIRED

Safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at each side of hose storage area.

WARNING LABEL, FAMA 18, INTAKE AND DISCHARGE CAP PRESSURE

FAMA 18 warning labels shall be installed, one on each side and back of apparatus where caps are present. They shall read "WARNING: Pressure Hazard. ALWAYS OPEN Drain or Bleeder Valve to release pressure BEFORE removing Intake or Discharge Cap. Caps can trap pressure. Cap under pressure can fly off with great force. Flying Cap will injure or kill."

SAFETY SIGN

A safety sign FAMA25, which warns of the need for training prior to operating the apparatus, shall be located on the pump operators panel.

PUMP PANEL ID PLATE

An identification plate shall be installed on the pump operator control panel to identify the fire pump serial number, model number, and performance.

COLOR CODED PUMP PANEL LABELING AND NAMEPLATES

Discharge and intake valve controls shall be color coded in compliance to guidelines of applicable sections of NFPA standards. Innovative Controls permanent type nameplates and instruction panels shall be installed on the pump panel for safe operation of the pumping equipment and controls.

FOAM READY MANIFOLD

The pump discharge manifold shall be designed for the future addition of a foam system.

WATER TANK AND RELATED COMPONENTS

1000 GALLON POLY TANK

The tank shall have a capacity of 1000 US gallons / 832 Imperial gallons / 3785 liters.

The tank shall be constructed of PT3 polypropylene material.

TANK MATERIAL

This material shall be a non-corrosive stress relieved thermoplastic and UV stabilized for maximum protection. Tank shell thickness may vary depending on the application and may range from 0.50" to 1.00” as required. Internal baffles are generally 0.375” in thickness.

ISO CERTIFICATION

The tank must be designed and fabricated by a tank manufacturer that is ISO 9001:2008 certified in each of its locations. The ISO certification must be to the current standard in effect at the time of the design and fabrication of the tank.

CONSTRUCTION

The booster and/or foam tank shall be of a specific configuration and is so designed to be completely independent of the body and compartments. Joints and seams shall be fused using nitrogen gas as required and tested for maximum strength and integrity. The tank construction shall include PolyProSeal™ technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method will provide a liquid barrier offering leak protection in the event of a weld compromise. The top of the booster tank is fitted with removable lifting assembly designed to facilitate tank removal. The transverse and longitudinal swash partitions shall be manufactured of a minimum of 0.375" PT3™ polypropylene.

All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow. All swash partitions interlock with one another and are completely fused to each other as well as to the walls of the tank. All partitions and spacing shall comply with NFPA 1901. The walls shall be welded to the floor of the tank providing maximum strength as part of the tank’s unique Full Floor Design™. Tolerances in design allow for a maximum variation of 0.125” on all dimensions.

The tank cover shall be constructed of 0.50" thick PT3 polypropylene and UV stabilized, to incorporate a multi-piece locking design, which allows for individual removal and inspection if necessary. The tank cover(s) shall be flush or recessed 0.375" from the top of the tank and shall be fused to the tank walls and longitudinal partitions for maximum integrity. Each one of the covers shall have hold downs consisting of 2.00"

minimum polypropylene dowels spaced a maximum of 40.00” apart. These dowels shall extend through the covers and will assist in keeping the covers rigid under fast filling conditions. A minimum of two (2) lifting dowels shall accommodate the necessary lifting hardware.

OUTLETS

There will be two (2) standard tank outlets: one (1) for the tank-to-pump suction line, which shall be sized to provide adequate water flow to the pump; and, one (1) for tank fill line, which shall be sized according to the NFPA minimum size chart for booster tanks. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 1000 G.P.M. The addition of rear suction fittings, nurse valve fittings, dump valve fittings, and through-the-tank sleeves to accommodate rear discharge piping must be specified. All auxiliary outlets and inlets must meet all NFPA guidelines in effect at the time of manufacture.

CAPACITY CERTIFICATION

All water and foam tanks shall be tested and certified as to capacity on a calibrated and certified tilting scale. Each tank shall be weighed empty and full to provide precise fluid capacity. Each Poly-Tank® III is delivered with a Certificate of Capacity delineating the weight empty and full and the resultant capacity based on weight. Engineering estimates for capacity calculations shall not be permitted for capacity certification.

CENTER OF GRAVITY

A center of gravity calculation shall be determined for each tank and provided as requested in order to provide the apparatus manufacturer with the necessary data to design and certify the apparatus with respect to the NFPA requirements regarding rollover stability. This information may be used by the apparatus manufacturer to assist in the calculation of the apparatus’s ability to meet the tilt table static rollover threshold or calculated Center of Gravity requirements per NFPA. A center of gravity and weight calculation for both empty and full conditions shall be required with each tank.

TANKNOLOGY™ TAG

A tag shall be installed on the apparatus in a convenient location and contain pertinent information including a QR code readable by commercially available smart phones. The information contained on the tag shall include the capacity of the water and foam (s), the maximum fill and pressure rates, the serial number of the tank, the date of manufacture, the tank manufacturer, and contact information. The QR code will allow the user to connect with the tank manufacturer for additional information and assistance.

WATER FILL TOWER AND COVER

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of 1/2" PT3™ polypropylene and shall be a minimum dimension of 10" x 10" outer perimeter. The fill tower shall be blue in color indicating that it is a water-only fill tower. The tower shall have a 1/4" thick removable polypropylene screen and a PT3™ polypropylene hinged cover. The capacity of the tank shall be engraved on the top of the fill tower lid.

FILL TOWER LOCATION

The fill tower shall be located in the left front area of the tank.

Inside the fill tower there shall be a combination vent/overflow pipe. The vent overflow shall be a minimum of schedule 40 polypropylene pipe with a minimum I.D. of 4.00" that is designed to run through the tank, and shall be piped to discharge water behind the rear wheels as required in NFPA 1901 so as to not interfere with rear tire traction.

SUMP

There shall be one (1) sump standard per tank. The sump shall be constructed of a minimum of 0.50" PT3 polypropylene and be located in the left front quarter of the tank, unless specified otherwise. On all tanks that require a front suction, a 3.00" schedule 40 polypropylene pipe shall be installed that will incorporate a dip tube from the front of the tank to the sump location. The sump shall have a minimum 3.00" N.P.T. threaded outlet on the bottom for a drain plug per NFPA. This shall be used as a combination clean-out and drain. All tanks shall have an anti-swirl plate located approximately 3.00” above the inside floor.

WATER TANK CLEAN-OUT PLUG

A 3.00" cleanout plug shall be provided in the bottom of the tank.

HOSEBED WIDTH

The width of the hosebed shall be 72.00".

ALUMINUM HOSEBED GRATING SINGLE AXLE

The hose bed compartment deck shall be constructed entirely from maintenance-free, extruded aluminum slats. The slats shall have an anodized, radiused ribbed top surface. The slats shall be of widths approximately 0.75" high x 6.00" wide and shall be made into a one-piece grid system to prevent the accumulation of water and allow ventilation to assist in drying hose.

The hosebed shall include an open area for the fill tower(s). The hosebed design shall incorporate adjustable tracks in the forward area rearward of the fill tower(s) and the rearward area of the hosebed for the installation of an adjustable divider(s).

The hosebed shall be easily removable to allow access to the booster tank below.

ALUMINUM HOSEBED DIVIDER(S) (1)

There shall be One (1) hosebed divider(s) provided the full fore-aft length of the hosebed. The hosebed divider(s) shall be constructed of 0.250" smooth aluminum plate with an extruded aluminum base welded to the bottom. The rear end of the divider(s) shall have a radius corner to protect personnel. The divider(s) shall be adjustable from side to side in the hose bed to accommodate varying hose loads.

HOSE BED COVER WITH VELCRO FASTENERS

A heavy duty 18 oz. vinyl hose bed cover shall be provided to protect the hose load from the weather. The cover shall extend from the front of the hosebed to the rear and then extend downward to cover the exposed rear of the bed and from the left side to the right side of the hosebed.

The cover, approximately 74.00” wide, shall be secured utilizing a Velcro fastening system at the front and sides of the hosebed body.

The vinyl cover shall be red in color.

APPARATUS BODY

BODY DESIGN AND CONSTRUCTION

The body shall be modular in design, allowing it to be removed and remounted on a new chassis. The body shall be fabricated using aluminum extrusions, angle, smooth aluminum sheet and aluminum treadplate. The apparatus body shall have full height compartments on both sides.

FLOOR AND UNDERSTRUCTURE

The tank area floor shall be a single piece design made of 0.125" Aluminum Sheet. The floor shall be supported by front and rear extruded 6061 aluminum alloy 2.00" x 4.00" x 0.250" wall structural tube crossmembers and incorporating flange style direct body mounting plates. The center section of the floor shall be supported by two (2) additional crossmembers of 2.00" x 2.00" x 0.250" structural aluminum tube, interlocked with three (3) longitudinal 2.00" x 2.00" x 0.250" sections of structural aluminum tube, connecting the front most and rearmost crossmembers. The front of the body shall be closed in with a 0.125" aluminum bulkhead panels the same height as the body.

COMPARTMENT CONSTRUCTION

The compartments shall be completely formed of 0.125" 5052-H32 aluminum alloy. Removable access panels bolted to welded in place light guards, shall be provided on each side of the body at front and rear bulkheads for body lighting and wiring service.

COMPARTMENT VENTS

Each body side compartment shall be properly vented in a manner that will minimize the possibility of moisture and road dirt entering the compartment. Venting shall be to atmosphere for front and rear side compartments. The center wheel well compartments shall be vented to the front and rear compartments.

COMPARTMENT SHELF TRACKS - ALUMINUM

All side body compartments be furnished with adjustable shelving track installed. The shelving track shall include a minimum of four (4) aluminum Uni-strut style channel tracks, mounted vertically on compartment side walls or vertical partitions. There shall be one (1) formed aluminum shelf angle bracket per shelving track to mount each shelf, tray, or adjustable storage module. Shelving hardware shall be heavy-duty commercial quality, providing unlimited vertical position adjustments.

COMPARTMENT SHELVING - SIDE COMPARTMENTS

Adjustable shelving shall be installed in the side compartments as identified later in this specification. Each shelf shall be made of 0.125” smooth aluminum with a 2.00” high

perimeter retaining lip with welded corners. Shelves shall have a rated capacity of 300-lbs., and shall be supported by a minimum of two (2) heavy-duty shelf brackets. Shelves shall have a maintenance free mill finish.

FENDER PANELS

A single piece wheel well panel made of 0.125" aluminum sheet shall be installed with no sharp edges to cut or damage cleaning equipment used in the wheel well area. The wheel well design shall provide for maximum wheel jounce and for use of tire chains without contacting the fender panel.

REAR WHEEL WELL LINERS

The rear wheel wells shall be equipped with replaceable circular liners to prevent road debris damage to adjacent side compartments. The liners shall be made from a single circular panel of 0.090" smooth aluminum and shall be the full depth of the side compartments. They shall be bolted in place and shall feature end flange bottom drains.

TREADPLATE AND TRIM

All treadplate overlays shall be 3003-H14 bright aluminum laser cut to fit. 3M double sided tape shall be applied to the NON-TREAD BRITE side. All treadplate shall be installed after paint.

BODY FRONT WALL OVERLAY

There shall be 0.063" polished aluminum treadplate provided for the entire front of the body to protect the paint from road debris and paint chipping. The panels shall be fit, have 3M Tape applied and installed after paint.

TOP PROTECTION

There shall be .063" embossed aluminum treadplate overlay provided for the compartment top outside of the integrated hose bed. The panels shall be fit, have 3M Tape applied and installed after paint.

REAR STEP RISER

There shall be 0.63" embossed aluminum treadplate step riser overlay for the rear of the body. The panel shall over lay from the lower edge of the body up to the cargo floor. The panel shall be fit, have 3M Tape applied and installed after paint.

BODY CONFIGURATION

The aluminum apparatus body shall be up to 164.00" long.

BODY WIDTH

The width of the apparatus body from the outside face of the left compartments to the outside face of the right compartments shall be 96.00" wide.

COMPARTMENT HEIGHT

The left side body compartments shall be 62.00" high.

COMPARTMENT HEIGHT

The right side body compartments shall be 62.00" high.

COMPARTMENT DEPTH, LH SIDE

The full height side compartments on the left hand side of the pumper body shall have a useable depth of 26.00" in the lower half of the compartment and 12.00" in the upper.

The standard height side compartments shall have a useable depth of 12.00".

COMPARTMENT DEPTH, RH SIDE

The full height side compartments on the right hand side of the pumper body shall have a useable depth of 26.00" in the lower half of the compartment and 12.00" in the upper.

The standard height side compartments shall have a useable depth of 12.00".

ROLL-UP DOORS

All compartment doors shall be equipped with AMDOR brand roll-up doors. The slats shall be 1.00” double wall aluminum with continuous ball and socket hinge joints designed to prevent water ingression and weather tight recessed dual durometer seals.

The interior door curtains shall be smooth to prevent equipment hang-ups. The door tracks and side frames shall each be one-piece aluminum. Each side seal shall be recessed, and non-marring with UV stabilizers to prevent warping.

The bottom panel flange shall have cut-outs for ease of access with gloved hands. The door strikers shall provide support beneath the lift bar to prevent door curtain bounce and potential false door ajar indications.

COMPARTMENTS- LEFT

LEFT SIDE COMPARTMENT IN FRONT OF REAR WHEELS, L1

There shall be a full height compartment located ahead of the rear wheels on the left side of the apparatus body. This compartment shall be designated as L1 within these specifications.

- Compartment Dimensions: 47.00" wide x 62.00" high
- Door Opening: 42.00" wide x 57.00" high
- Compartment Depth: 26.00" deep lower/ 12.00" deep upper

The compartment shall have a roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) full height Luma Bar LED strip light(s) shall be installed inside the compartment.

The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted uni-strut shelf trac for shelving installation.

ADJUSTABLE SHELF

There shall be One (1) adjustable shelf located in the compartment.

LEFT SIDE ABOVE WHEEL COMPARTMENT, L2

There shall be a standard height compartment located above the rear wheels on the left side of the apparatus body. This compartment shall be designated as L2 within these specifications.

- Compartment Dimensions: 58.00" wide x 33.00" high
- Door Opening: 58.00" wide x 28.00" high
- Compartment Depth: 12.00" deep

The compartment shall have a roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) full height Luma Bar LED strip light(s) shall be installed inside the compartment.

The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted uni-strut shelf trac for shelving installation.

ADJUSTABLE SHELF

There shall be One (1) adjustable shelf located in the compartment.

LEFT SIDE COMPARTMENT BEHIND REAR WHEELS, L3

There shall be a full height compartment located behind of the rear wheels on the left side of the apparatus body. This compartment shall be designated as L1 within these specifications.

- Compartment Dimensions: 59.00" wide x 62.00" high
- Door Opening: 54.00" wide x 57.00" high
- Compartment Depth: 26.00" deep lower/ 12.00" deep upper

The compartment shall have a roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) full height Luma Bar LED strip light(s) shall be installed inside the compartment.

The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted uni-strut shelf trac for shelving installation.

ADJUSTABLE SHELF

There shall be One (1) adjustable shelf located in the compartment.

PASSENGER'S SIDE COMPARTMENT DIMENSIONS:

RIGHT SIDE COMPARTMENT IN FRONT OF REAR WHEELS, R1

There shall be a full height compartment located ahead of the rear wheels on the right side of the apparatus body. This compartment shall be designated as R1 within these specifications.

- Compartment Dimensions: 47.00" wide x 62.00" high
- Door Opening: 42.00" wide x 57.00" high
- Compartment Depth: 26.00" deep lower/ 12.00" deep upper

The compartment shall have a roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) full height Luma Bar LED strip light(s) shall be installed inside the compartment.

The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted uni-strut shelf trac for shelving installation.

ADJUSTABLE SHELF

There shall be One (1) adjustable shelf located in the compartment.

RIGHT SIDE ABOVE WHEEL COMPARTMENT, R2

There shall be a standard height compartment located above the rear wheels on the right side of the apparatus body. This compartment shall be designated as R2 within these specifications.

- Compartment Dimensions: 58.00" wide x 33.00" high
- Door Opening: 58.00" wide x 28.00" high
- Compartment Depth: 12.00" deep

The compartment shall have a roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) full height Luma Bar LED strip light(s) shall be installed inside the compartment.

The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted uni-strut shelf trac for shelving installation.

ADJUSTABLE SHELF

There shall be One (1) adjustable shelf located in the compartment.

RIGHT SIDE COMPARTMENT BEHIND REAR WHEELS, R3

There shall be a full height compartment located behind of the rear wheels on the right side of the apparatus body. This compartment shall be designated as R1 within these specifications.

- Compartment Dimensions: 59.00" wide x 62.00" high

- Door Opening: 54.00" wide x 57.00" high
- Compartment Depth: 26.00" deep lower/ 12.00" deep upper

The compartment shall have a roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) full height Luma Bar LED strip light(s) shall be installed inside the compartment.

The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted uni-strut shelf trac for shelving installation.

ADJUSTABLE SHELF

There shall be One (1) adjustable shelf located in the compartment.

REAR CENTER COMPARTMENT, CR1

There shall be a full height compartment located at the rear of the apparatus body. This compartment shall be designated as CR1 within these specifications.

- Compartment Dimensions: 44.00" wide x 52.00" high
- Door Opening: 40.00" wide x 47.00" high
- Compartment Depth: 34.00" deep

The compartment shall have a roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) full height Luma Bar LED strip light(s) shall be installed inside the compartment.

The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

REAR STEP (TAPERED ENDS)

A rear tailboard shall be provided and installed at the rear of the body. The rear tailboard shall be a minimum of 10.00" deep and constructed of 0.188" 3003-H24 tread plate aluminum or an equal non-slip surface. The tailboard shall meet the NFPA 1901/1906 recommended requirements for non-slip surfaces.

The rear tailboard shall be the full width of the body, and tapered on each end.

The ladder storage shall have capacity for the following:

- One (1) Alco-Lite aluminum 24 ft. two-section extension ladder, model # PEL-24
- One (1) Alco-Lite aluminum 14 ft roof ladder, model # PRL-14
- One (1) Alco-Lite aluminum 10 ft. folding ladder, model # FL-10

LADDER SOURCE

The ladders shall be provided by the manufacturer and shall be detailed later in this specification.

PIKE POLE STORAGE

Two (2) pike pole storage tubes shall be provided in the ladder compartment.

PIKE POLE SOURCE

The pike poles shall be provided by the purchaser.

SUCTION HOSE STORAGE- LEFT

A hard suction compartment shall be located on the left side of the apparatus body below the hose bed in between the “L” compartments and the tank mounting area. The compartment shall have approximate dimensions of 33.00” tall x 12.00” wide x 126.00” deep. It shall be located just below the hose bed level. Access shall be from the rear of the apparatus.

Two (2) troughs shall be provided in the storage area for the hose to slide on and be held in position when stored. Appropriate stops shall be provided.

The design shall allow the hose to be individually removed from the rear of the apparatus.

A vertically hinged aluminum door with push button style latches shall be provided to enclose the suction hose at the rear.

The suction storage shall have capacity for two (2) 10.00' sections of 6.00" hard suction hose.

SUCTION HOSE SOURCE

New suction hose shall be provided by the manufacturer and shall be detailed later in this specification.

RUBRAILS

Extruded aluminum rubrails shall be installed to help protect the lower body and cushion against accidental contact.

STEPS

All steps shall have a surface area of at least 35 square inches and shall be able to withstand a load of at least 500 pounds. Steps shall be provided at any area that personnel may need to climb and shall be adequately lighted.

FOLDING STEPS- LH SIDE REAR

Three (3) large, heavy duty chrome folding steps shall be furnished and located, at the left hand apparatus rear. There shall be a barrier material installed between the body surface and the steps. The exact number of steps provided may vary depending upon body configuration and options.

FOLDING STEPS- RH SIDE FRONT OF BODY

Three (3) large, heavy duty chrome folding steps shall be furnished and located, at the right hand front of the body. There shall be a barrier material installed between the body surface and the steps.

EXTERIOR GRAB RAILS

Each grab rail shall be non-slip, 1.25" diameter extruded polished aluminum grab rails with rubber inserts designed to provide maximum gripping ability, strength, and durability. The rails shall comply with NFPA 1901.

GRAB RAILS, REAR STEP, VERTICAL

Two (2) extruded aluminum non-slip grab rails shall be provided and vertically mounted on the rear of the apparatus, one (1) on each side of the body.

GRAB RAIL, RH FRONT

One (1) extruded aluminum non-slip grab rail shall be provided and mounted on the front, upper, right hand side of the body.

SCBA BOTTLE COMPARTMENTS

Four (4) SCBA bottle compartments shall be installed, one (1) over each wheel well area. The compartments shall be constructed of an 8.00" diameter plastic polymer. The compartments shall allow the storage of a cylinder up to 7.75" in diameter. Each shall have a Cast Products brushed stainless steel door assembly.

12 VOLT ELECTRICAL SECTION

NFPA 1901 CERTIFIED 12 VOLT ELECTRICAL SYSTEM

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

NFPA MINIMUM ELECTRICAL LOAD DEFINITION

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

1. Propulsion engine and transmission.

2. The clearance and marker lights.

3. Communication equipment. 5 amp default.

4. Illumination of all walking surfaces, the ground at all egress points, control and instrumentation panels and 50% of total compartment lighting.

5. Minimum warning lights required for "blocking right of way" mode.

6. The current to simultaneously operate and fire pump and all specified electrical devices.

7. Anything defined by the purchaser, in the advertised specifications, to be critical to the mission of the apparatus.

RESERVE CAPACITY TEST

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

ALTERNATOR PERFORMANCE TEST AT IDLE

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

TEST CONDITIONS

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

12 VOLT ELECTRICAL SYSTEM

The truck shall have a 12-Volt electrical system.

All wiring will be run in convoluted high temperature plastic loom. Wiring shall be color and function coded and will be of adequate size to handle the assigned load. All solenoids, relays, and terminal blocks will be located in an easily accessible area.

All circuits provided shall have properly rated low voltage over current protective devices.

All wiring shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for the protected circuit. Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent. The wiring and wiring harness and insulation shall be in conformance to applicable SAE and NFPA standards. The wiring harness shall conform to SAE J-1128 with GXL temperature properties. All exposed wiring shall be protected in a loom with a minimum 289 degree Fahrenheit rating. All wiring looms shall be properly supported and attached to body members. The electrical conductors shall be constructed in accordance with applicable SAE standards, except when good engineering practice requires special construction.

All under side terminal junctions shall be fully enclosed in sealed plastic weather proof boxes.

Electromagnetic interference suppression shall be provided as required to satisfy the radiation limits specified in SAE J551/1.

CLASS1 ES-KEY SYSTEM

The electrical system shall utilize Class1 Inc. **ES-Key** technology where applicable.

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 load management functions, system switching, monitoring and reporting, and be fully programmable for a standardized electrical system utilizing the ES-Key Professional software program.

SUPERNODE II

The apparatus shall be equipped with a Class1 ES-Key system with a Supernode II high density input output node. The Supernode II shall have (24) inputs, (24) outputs, a Universal System Manager, a data logger, and programmable special utilities.

The Supernode II shall have an integrated USB port to allow for direct connection to the ES-Key system without additional interface devices.

LOAD MANAGER

The Supernode II shall have an integrated Load Manager. The Load Manager Sequencer shall assure that loads are applied and removed gradually, thus eliminating the possibility of inducing failures in the vehicle's equipment.

LOW VOLTAGE MONITOR

A voltage monitor shall be built into the ES-Key electrical system. It shall activate a warning when the alternator output voltage falls below any desired voltage (usually 11.5 volts).

1TOUCH SWITCH PANEL, 8 POSITION

An eight (8) position 1Touch switch panel module shall be installed in the cab.

MASTER WARNING SWITCH

A master switch shall be included in the main 1Touch switch panel. The switch shall have a red light indicator and be labeled “Master Warning” for identification. The switch shall feature control over all devices wired through it. Any warning device switch left in the “ON” position shall automatically power up when the master switch is activated.

CHASSIS GROUND LIGHTS

LED ground lights with outward facing angle brackets shall be installed, one (1) under each chassis door.

PUMP PANEL GROUND LIGHTS -SUPPLIED WITH PUMP

Two (2) LED ground lights with an outward facing angle brackets shall be installed under the pump panel running boards. One (1) light shall be located on the driver side and one (1) light located on the officer side of the apparatus.

FRONT OF BODY GROUND LIGHTS

Two (2) LED ground lights with outward facing angle brackets shall be installed under the front of the body. One (1) light shall be located on the driver side and one (1) light shall be located on the officer side of the apparatus.

REAR STEP GROUND LIGHTS

Two (2) LED ground lights with outward facing angle brackets shall be installed under the rear step of the apparatus, one (1) each side.

GROUND LIGHT SWITCHING

The cab and body ground lights shall activate by engaging the parking brake.

HAZARD LIGHT

One (1) Whelen model 0SR00FCR flashing red LED light, located in the driving compartment, the light shall be illuminated automatically whenever any compartment door is ajar.

The hazard light shall be marked with a sign that reads “Do Not Move Apparatus When Light is On”.

The warning light shall be interlocked to the parking brake and shall only alert the driver when the parking brake is released. The light shall also be used to signal that other ancillary equipment such as racks light towers etc. are not in their “ready for transport” position.

REAR DIRECTIONALS

Rear directional lighting shall be supplied as follows:

Two (2) Whelen model M6BTT LED brake/tail lights shall be installed on the rear of the body. Each light shall have a red lens.

Two (2) Whelen model M6T Amber LED turn signal lights with a populated arrow shall be installed on the rear of the body. Each light shall have a color lens.

Two (2) Whelen model M6BUW LED reverse lights shall be installed on the rear of the body.

HOUSINGS FOR DIRECTIONALS

The two (2) sets of Whelen rear signal lights shall each be housed in a vertical chrome plated housing, designed to hold four (4) lights each. The lower section of each casting shall contain the rear lower warning lights as described in the emergency lighting specifications.

MARKER LIGHTS

LED marker lights shall be installed on the vehicle in conformance to the Department of Transportation requirements. The side and rear of the body will be provided with reflectors. All marker lights shall be incorporated into the headlight circuit of the cab/chassis

Two (2) amber reflectors shall be provided on the apparatus body lower side, as far forward and low as practical, one (1) each side if the apparatus is 30 feet long or longer.

Four (4) red reflectors shall be provided on the apparatus rear, one (1) each side and two (2) on the rear.

LICENSE PLATE BRACKET

There shall be a license plate bracket mounted on the rear of the apparatus. A clear LED light shall be incorporated into the bracket

BODY STEP LIGHTS

Two (2) polished stainless steel, TecNiq Eon 3-LED horizontal surface mounted body step lights shall be provided and installed. Step lights shall be located to properly illuminate all body access steps and walkway areas and shall include a mounting gasket to provide a watertight seal.

The light(s) shall be wired to activate with the parking brake.

UPPER REAR SCENE LIGHTS

One (1) pair of Whelen model M9LZC LED scene lights shall be installed, one (1) each side on the upper rear of the apparatus body.

The light(s) shall be supplied and installed with a chrome bezel.

SCENE LIGHT AVTIVATION

The scene lights shall be activated by a switch on the 1Touch switch panel. All shall be activated by a single switch. The switch shall be labeled "SCENE LIGHTS".

SCENE LIGHT SWITCHING

The rear scene lights shall activate automatically upon placing the transmission into reverse.

REAR VISION SYSTEM

One (1) complete backup camera system shall be provided. There shall be (1) camera located at the rear of the apparatus as close to the centerline as possible. The camera shall be capable of viewing the entire area not visible in the side view mirrors. The camera shall have a 7.00” color display mounted in view of the driver. The system shall include audio transmission from the camera.

The rear vision camera shall be wired to automatically activate when the chassis transmission is placed in reverse.

The monitor for the rear vision system shall be mounted on the dash of the cab in easy view of the driver.

NFPA AUDIBLE AND LIGHTING WARNING PACKAGE

The following warning light package shall include all of the minimum warning light and actuation requirements for the current revision of the NFPA 1901-2009. The lighting as specified shall meet the requirements for both "Clearing Right of Way" and "Blocking Right of Way" which includes disabling all white warning lights when the apparatus is in "Blocking Right of Way" mode.

WARNING LIGHT FLASH PATTERN

All of the perimeter warning lights shall be set to the default NFPA flash pattern as provided by the warning light manufacturer.

LIGHTBAR

One (1) WHELEN model JE2NFPA 56.00” LED lightbar shall be supplied and mounted. The lightbar shall have clear lenses and contain the following modules:

Four (4) RED LIN6 LED modules, two (2) on each corner.
Four (4) RED CON3 LED modules, across the front
Two (2) WHITE CON3 LED modules, on the front

The forward facing white lights shall be automatically disabled for the "Blocking Right of Way" mode.

LIGHTBAR SWITCHING

One (1) switch with indicator shall be installed on 1Touch switch panel to control the lightbar. The switch shall be labeled "LIGHTBAR". The switch shall only be active when the master warning switch is engaged.

LOWER FRONT WARNING LIGHTS

One (1) pair of Whelen model M6 Series LED warning lights shall be installed, one (1) each side one the front of the chassis cab.

The driver side warning light shall be a Whelen Model M6R red Super-LED with red lens.

The officer side warning light shall be a Whelen Model M6R red Super-LED with red lens.

Each light shall be mounted with a Whelen Model M6FC chrome flange.

INTERSECTION WARNING LIGHTS

One (1) pair of Whelen model M7 LED warning lights shall be installed, one (1) each side of the chassis cab.

The driver side warning light shall be a Whelen Model M7R red Super-LED with red lens.

The officer side warning light shall be a Whelen Model M7R red Super-LED with red lens.

Each light shall be mounted with a Whelen Model M7FC chrome flange.

LOWER MID-BODY WARNING LIGHTS

One (1) pair of Whelen model M7 Series LED warning lights shall be installed, one (1) each side of the apparatus, mid-body.

The driver side warning light shall be a Whelen Model M7R red Super-LED with red lens.

The officer side warning light shall be a Whelen Model M7R red Super-LED with red lens.

Each light shall be mounted with a Whelen Model M7FC chrome flange.

LOWER REAR WARNING LIGHTS

One (1) pair of Whelen model M6 Series LED warning lights shall be installed, one (1) each side of the lower rear of the apparatus body.

The driver side warning light shall be a Whelen Model M6R red Super-LED with red lens.

The officer side warning light shall be a Whelen Model M6R red Super-LED with red lens.

The warning lights on the rear of the body shall be mounted in lower section of each tail light casting.

LOWER WARNING LIGHT SWITCHING

One (1) switch with indicator shall be installed on 1Touch switch panel to control the lower level warning lights. The switch shall be labeled "LOWER WARN". The switch shall only be active when the master warning switch is engaged.

REAR BEACONS

Two (2) Whelen model L31 LED beacons shall be provided and installed at the upper rear corners of the apparatus.

The beacon on the left hand side shall be red in color with a red lens.

The beacon on the right hand side shall be red in color with a red lens.

BEACONS SWITCH

The beacons lights shall be controlled through the master warning switch on the 1Touch switch panel.

BEACON LIGHT MOUNTING

The rear beacons shall be mounted on cast aluminum stanchions attached to the apparatus body, one on each side.

ELECTRIC SIREN AND CONTROL

One (1) Whelen model #295SLSA1 electronic siren shall be mounted in the cab. This unit shall feature an electronic air horn, wail, yelp, hi-lo and shall have a hard-wired PA microphone.

ELECTRONIC SIREN SPEAKER

One (1) Federal Signal model ES100 Dynamax 100-watt speaker shall be flush mounted as far forward and as low as possible on the front of the vehicle. A polished model ESFMT with ”Electric F” grille shall be provided on the outside of the speaker to prevent road debris from entering the speaker.

The speaker shall produce a minimum sound output of 120 dB at 10 feet to meet current NFPA 1901 requirements.

The speaker shall be located on the right hand side of the bumper.

PAINT, STRIPING, AND LETTERING SECTION

CHASSIS PAINT

The chassis shall be painted by the OEM Chassis Manufacturer.

PAINT PROCESS

The body exterior shall have no mounted components prior to painting to assure full coverage of treatments. Compartment doors (if applicable) will be painted separately to assure proper paint coverage on body, doorjambs and door edges.
All surfaces shall be sanded to remove all burrs and imperfections before etching and treatment.

The body shall be totally removed from the chassis during the painting process to insure the entire unit is covered.

PPG wax & grease solvent shall be used to clean and prep the body surface prior to any sanding. The surface shall then be rinsed with freshwater. This step removes wax, grease and other surface contaminants, thus leaving a bright, clean and conditioned surface.

PAINT FINISH

The body shall be painted with a PPG Delfleet Evolution Paint System.

As part of the curing process the painted body shall go through a baking process. The painted components shall be baked at 185 degrees for 3 hours to achieve a complete coating cure on the finished product.

After bake and ample cool down time, the coated surface shall be sanded using 3M 1000, 1200, and or 1500 grit sandpaper to remove surface defects. In the final step, the surface shall be buffed with 3M Super-duty compound to add extra shine to coated surface. No more than .5 mil shall be removed in this process.

All products and technicians shall be certified by PPG every two (2) years.

ANTI-CORROSION PROTECTION

Where dissimilar metals must be joined, overlaid, share perforations or otherwise come in contact with each other to achieve construction, performance or aesthetic requirements, such items shall be separated by a continuous contact, nonconductive coating or film to prevent or otherwise mitigate the effects of electrolysis. Only stainless-steel hardware and fasteners shall be used in the construction of the apparatus. Where stainless steel fasteners pass through an aluminum component, the

fastener contact surfaces, including the head, washer and nut shall be coated with ECK anti-corrosion material.

UNDERCOATING

The body underside, including the sub-frame and the inside of the wheel wells, NOT THE WHEEL WELL LINERS, shall be thoroughly coated with SWT commercial automotive undercoat and sound deadening material to protect the body module against corrosion. The coating shall be black and shall be tested to ASTM B117 Salt Spray test for 1,000 hours at 10-mils.

COMPARTMENT FINISH, ZOLATONE

The apparatus side compartment interiors are to be coated with Zolatone, a polychromatic, modified nitrocellulose coating with a flat background color with accenting fleck colors. The compartments shall be cleaned with a grease remover, and then the surface sanded and prepared for painting. The Zolatone finish is washed and waxed like paint, and is resistant to man solvents and wear.

Apollo Grey in color.

WHEEL RIMS

The chassis wheels shall be as furnished by the chassis OEM. No additional finishes shall be provided by apparatus manufacturer.

LETTERING

Reflective lettering shall be applied to the cab doors at the direction of the purchaser.

Photos or drawings of the lettering and striping layout shall be provided by the purchaser prior to construction.

REFLECTIVE STRIPE

There shall be a reflective Scotchlite band located on the apparatus cab and body. The band shall be per the purchaser’s size, design and color specifications.

The reflective band shall be in compliance with current NFPA requirements.

Photos or drawings of the layout shall be provided by the purchaser prior to construction.

CHEVRON STRIPING

At least 50% of the rear of the unit shall be covered with Red and Fluorescent Yellow-Green alternating 6.00" stripe in an inverted Chevron pattern.

EQUIPMENT SECTION

EQUIPMENT

The following equipment (if listed below) shall be supplied with the apparatus. It shall be shipped loose unless detailed below or otherwise in these specifications.

SUCTION HOSE

Two (2) 6.00" X 10’ section(s) of KOCHEK, PVC type hard, suction hose shall be provided on the apparatus. The hose(s) shall be light weight type with pyrolite, long handle female x rocker lug male, NST threads. The hose shall be black in color.

EXTENSION LADDER, 2 SECTION

One (1) 24 foot, Alco-Lite model# PEL-24, two (2) section aluminum extension Ladder shall be supplied with the finished apparatus.

ROOF LADDER

One (1) 14 foot, Alco-Lite model # PRL-14, single section aluminum roof ladder with folding roof hooks shall be supplied with the finished apparatus.

FOLDING ATTIC LADDER

One (1) 10 foot, Alco-Lite model# FL-10, aluminum folding attic ladder shall be supplied with the finished apparatus.

END OF SPECIFICATION