

YAMHILL FIRE PROTECTION DISTRICT

Brian Jensen – Fire Chief

INVITATION TO BID

The Yamhill Fire Protection District will receive sealed bids for a new custom Fire Engine. Specifications are available at the Yamhill Fire Protection District located at PO Box 249 / 275 South Olive Street, Yamhill, Oregon 97148 or on the district website at www.yamhillfpd.org Sealed bids must be clearly marked “Fire Engine – Pumper” on the outside of the envelope and delivered Chief Jensen at the Yamhill Fire Station by 1:00 p.m. local time on Wednesday, August 28th, 2019. Questions regarding the bid can be directed to Brian Jensen at 503-680-8022 or email at brian@yamhillfire.org The Yamhill Fire Protection District reserves the right to waive informalities and to reject any and all bids.

Yamhill Fire Protection District

Fire Engine – Pumper

The framework of this document has been developed using many specifications for a Pumper. This is not meant to limit another manufacturer's ability to submit a bid. Consideration will be given to all bids regardless of the vehicle manufacturer.

Bids are requested for one custom Fire Engine – Pumper.

The manufacturer, who is awarded the bid, shall meet with a Fire District representative to review the apparatus, attached equipment, and loose equipment specifications, to ensure the specifications (model numbers, sizes, etc.) are the most appropriate, as to ensure the completed apparatus functions at the most appropriate performance levels.

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 specially 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 current year manufacture and is to be new and unused. The bid price shall not include any local, 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 never 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 whereas 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.

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 nonresponsive 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 deliver 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.

WARRANTY

The following warranties shall be provided:

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

BODY WARRANTY, LIFETIME

The Poly apparatus body detailed herein shall have a structural and corrosion warranty against defects in materials and workmanship for a period of the life of the apparatus, effective upon final payment in full by the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. This warranty applies only to the original body as mounted by the apparatus

manufacturer on the original chassis. Any unauthorized alterations or modifications to the original body or remounting of 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. 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.

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.

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 District 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 axles 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 District.
- E). The manufacturer shall furnish copies of the transmission approval signed by the transmission manufacturer upon delivery of the chassis to the Fire District.
- F). The manufacturer shall furnish copies of the front and rear axle approvals upon delivery of the apparatus to the Fire District.

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 (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. No 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 the cab. Failure to comply may injure or 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
- Air compressor system lubricant
- Generator system lubricant

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.

APPARATUS DIMENSIONS

These are standard truck dimensions. Changes in configuration or additional options may affect these dimensions. The contract specification shall contain the exact dimensions.

OVERALL HEIGHT

An overall height restriction has not been specified for this apparatus.

OVERALL LENGTH

No overall length restriction has been specified for this apparatus.

OVERALL WIDTH

No overall width restriction has been specified for this apparatus.

OVERALL WHEELBASE

No overall wheelbase restriction has been specified for this apparatus.

PUMP MODULE WIDTH

No pump module width restriction has been specified for this apparatus.

ANGLE OF APPROACH

No angle of approach restriction has been specified for this apparatus.

ANGLE OF DEPARTURE

No angle of departure restriction has been specified for this apparatus.

COMMERCIAL CHASSIS SPECIFICATION

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

KENWORTH CHASSIS

A Kenworth T-370 4-door chassis per the attached specifications shall be furnished.

CAB

Four Door Crew Cab.

DRIVER'S SEAT

The driver's seat shall be a Kenworth air cushion plus High Back vinyl with dual arm rests. It shall have a RED NFPA compliant seat belt, and a pressure sensor for the seat belt monitor.

PASSENGER'S SEAT

The passenger's seat shall be a High Back vinyl with dual armrests. It shall have a RED NFPA compliant seat belt, and a pressure sensor for the seat belt monitor.

An accessible toolbox shall be located below the seat.

RADIO

Kenworth radio with AM/FM, Weather band with USB and Bluetooth.

MIRRORS

Dual Kenworth aerodynamic heated motorized 7.00" x 13.00" mirror w/chrome shell. LH/RH convex mirrors 5.00" x 7.00" heated. Mirror brackets set for 8.5 ft. load width. The switch shall be located on the door pad.

CAB EQUIPMENT

- Curved glass conventional
- Single-piece Windshield
- Sloped aerodynamic hood
- Cab heater with integral defrosters & A/C (45,000 BTU heater)
- Adjustable telescoping tilt steering column
- Dash mounted air cleaner restriction gauge
- Multi-Function Highline Display

- Instrument package (speedometer, tachometer, fuel gauge, DEF level gauge, coolant temperature gauge, engine oil pressure gauge, voltmeter, air gauge)
- Full burl wood dash panels
- Warning light for parking brake
- Self-canceling turn signals
- LH & RH NFPA compliant grab handles
- Daylite doors, includes right hand peeper window.
- Electric window lifts
- Electric Door Locks LH/RH
- Four position ignition switch, keyless. (NFPA)
- Electric windshield wipers, 2-speed plus intermittent
- Electric windshield washers

CAB INTERIOR

- Color: Pinnacle Includes vinyl headliner
- Glove box door with locking latch
- Dash mounted cruise control
- Turn signal switch with column mounted dimmer
- Slate gray interior primary color
- Floor mat
- Inside sun visor, LH/RH
- Door courtesy lights
- Under-dash center console w/cup holder, ashtray, and lighter
- NFPA compliance kit (seat sensors, seatbelt switches, VDR harness)

4-DOOR CREW CAB

- 52" Crew cab addition
- 84" wide at rear of crew cab
- All-aluminum cab with Huck bolt, adhesive tape and sealant assembly
- One-piece fiberglass roof with 4" raised rear section, Huck bolt perimeter and bond to windshield cowl
- Two-piece molded rear headliner
- Kenworth door assemblies and door panels with electric windows and electric door locks
- Relocated Kenworth corner panels
- Side wall, rear wall and ceiling insulation
- Granite Gray vinyl interior trim
- One-piece vinyl floor mat

- Interior materials meet FMVSS 302 flammability rating
- Kenworth dome light
- Kenworth interior grab handles
- Kenworth exterior grab handles
- DuPont Imron 5000 paint, on crew cab, roof and rear doors. Kenworth factory paint will remain on the hood, fenders, front doors and windshield cowl
- Access steps, left and right, frame-mount

CHASSIS PAINT COLOR

The cab shall be painted a Single color.

SCBA SEAT BRACKET(S) x 3

Each seat specified for SCBA's shall include a Flame-fighter SCBA bracket. The cylinder clips shall be spring steel for greater durability and long life.

A model 39015-12 NFPA 1901 approved restraint strap shall be provided for each bracket.

CAB STEPS

The existing cab steps on the left side of the commercial 4 door chassis shall be covered with slip resistant aluminum tread plate for compliance to applicable NFPA standards.

CAB STEPS

The existing cab steps on the right side of the commercial 4 door chassis shall be covered with slip resistant aluminum tread plate for compliance to applicable NFPA standards.

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 10 (10) 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)

Two (2) pair of stainless-steel high-hat hub covers shall be provided on the rear axle's 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.

REAR TOW PLATES

Two (2) rear tow plates with 1.50" I.D. holes, constructed with 1.00: steel plate shall be provided on the apparatus. These shall be located below the apparatus body and fastened to the rear chassis frame rails.

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 Class 1 "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 BEALT 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 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 Class 1 model #629-00025 USB VDR download harness shall be supplied with the system to allow the data to be downloaded to a computer.

RADIO COAX & MOUNTS

There shall be five (5) mobile antenna mounts installed on the roof in a way that the antenna's will not interfere with the light tower.

The coax from the five (5) mobile antenna mounts will be run from the roof to the center console box to be used by the radio installers after the purchaser has received the apparatus.

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 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.

BATTERY CHARGER, BUILT-IN BATTERY SAVER

One (1) Kussmaul Auto Charge #1000 Series Model #091-215-12, 15-amp battery charger and 3-amp Battery saver shall be installed. The charger shall include a Model #091-199-001 remote digital display.

The Auto Charge 1000 with Parasitic Load Compensation (PLC) is a compact, microprocessor controlled, completely automatic, single channel battery charger designed for vehicles with a single battery system. The PLC charger is designed to withstand the shock and

vibration encountered by vehicle mounted equipment. The Battery Saver component shall eliminate drain on vehicle's battery system when vehicle is not in use. The system shall automatically disconnect auxiliary vehicle loads from battery when the charger is energized.

Parasitic Load Compensation feature is designed especially to meet the heavy-duty requirements of emergency vehicles. Parasitic load compensation allows you to input the total number of parasitic load amps on the vehicle. Then the charger will shift the absorption stage set point so the battery voltage will drop to the float voltage when the desired current is reached. This will lead to a longer battery life and no overcharging or overheating.

The charger shall have the following operational specifications:

- a) 120 volts AC input at 3.5 amps
- b) Battery Charger: 12 volts DC output at 15 amps
- c) Battery Saver: 3 amps 12 Volt DC output
- d) 8 Pin Selector Switch on front panel
 - a. Battery Type: Lead-Acid, Gel Cell, AGM or Odyssey
 - b. Float / 3-Step
 - c. Battery Saver ON/OFF
 - d. Parasitic Load Compensation
- e) AC power applied light on front panel
- f) System LED Status Indicator on front panel
- g) Dimensions of 9.35" high x 5.9" wide x 4.725" deep and weighs 11 lbs.

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.

The disconnect shall be equipped with a NEMA 5-20P female receptacle, which shall automatically eject the shoreline when the vehicle starter is energized. The mating connector shall be included with the auto eject and shall be provided as loose equipment.

BATTERY CHARGER DISPLAY/COVER

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

The cover shall be Yellow in color.

ELECTRICAL INLET LOCATION

The location of the inlet auto eject shall be determined during the pre-build conference.

SHORELINE POWER INLET PLATE

A shoreline power receptacle information plate shall be permanently affixed at or near the power inlet. The plate shall indicate the following:

- Type of Line Voltage
- Current Rating in Amps Power Inlet Type (DC or AC).

AIR INLET LOCATION

The location of the air inlet shall be determined during the pre-build conference.

SHORELINE AIR INLET PLATE

A shoreline air receptacle information plate shall be permanently affixed at or near the air inlet.

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

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.

DARLEY PSP, SINGLE STAGE, PTO PUMP

The pump shall be a Darley PSP single stage fire pump.

The pump shall be a midship mounted design and operate through a mounted PTO. The pump is to be placed in gear from the chassis cab. Pump shift to be clearly labeled. The PTO and pump gear ratios are to be selected so as to provide good pump performance.

Pump casing shall be of ductile iron vertically split, with a minimum tensile strength of 65,000 PSI, bronze fitted.

PUMP SHAFT

Pump shaft to be precision-ground stainless steel with long-wearing chromium hard coating. The pump shaft shall be splined to receive broached impeller hubs, for greater resistance to wear, torsional vibration, and torque imposed by engine, as well as ease of maintenance and repair. The bearings shall be heavy duty, deep groove, and radial-type ball bearings oversized for long life. Sleeve bearings on any portion of the pump or transmission shall be prohibited due to wear, deflection, and alignment concerns. Bearings to be protected at all openings from road dirt and water splash with oil seals and water slingers.

IMPELLER

The impellers shall be high-strength bronze alloy of mixed flow design, splined to the pump shaft for precision fit, durability, and ease of maintenance. Impeller shall be vacuum cast designed for maximum lift and highest capacity. The seal rings shall be renewable, double labyrinth, wrap around bronze type. Impeller shaft oil seals shall be constructed to be free from steel components except for the internal lip spring.

PUMP TRANSMISSION

The pump transmission case shall be heavy duty cast iron. A magnetic drain plug shall be provided. Transmission case interior shall be powder coated to reduce oil contamination.

Gears shall be helical in design and precision ground for quiet operation and extended life. Gears to be cut from high strength alloy steel, ground, and carburized. Pump drive shaft shall be precision-ground, heat-treated alloy steel-minimum 1-1/2" x 10-spline ends.

DRIVELINE INSTALLATION

The pump drivelines shall be sized for intended application and torque requirements. The installation shall comply with driveline manufacturer's guidelines.

SIX YEAR FIRE PUMP WARRANTY

A Six (6) year warranty for the Darley fire pump shall be provided.

MIDSHIP FIRE PUMP DRIVESHAFTS AND INSTALLATION

The midship PTO fire pump shall be installed and shall include installation of the fire pump, modification and/or fabrication of new drivelines and all pump-mounting brackets.

1500 GPM FIRE PUMP SPECIFICATIONS

The centrifugal type fire pump shall be a Darley model PSP with 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)

POWER TAKE OFF

A ten (10) bolt Muncie model CS10-A1010-H3CX heavy duty transmission driven PTO shall be installed.

LEFT SIDE INLET – 6.00”

One (1) 6.00” suction steamer inlet with male NH threads shall be provided, on the left side pump panel. The inlet shall have a removeable screen.

INTAKE TRIM RING WITH WARNING LABEL – BURGUNDY

An Innovative Controls chrome plated molded plastic trim ring shall be installed for the pump intake. A warning label shall be installed on the bezel, that states the following: “WARNING: Do not supply inlet with a pressurized source when valve is closed. Serious injury or death can result.”

INLET CAP

The inlet shall have a polished chrome long handle female cap with 6.00” NST threads. The cap shall be engraved with the pump manufacturer’s logo and name. The logo and name shall be painted with a high quality urethane paint.

RIGHT SIDE INLET – 6.00”

One (1) 6.00” suction steamer inlet with male NH threads shall be provided, on the right-side pump panel. The inlet shall have a removeable screen.

INTAKE TRIM RING WITH WARNING LABEL – BURGUNDY

An Innovative Controls chrome plated molded plastic trim ring shall be installed for the pump intake. A warning label shall be installed on the bezel, that states the following: “WARNING: Do not supply inlet with a pressurized source when valve is closed. Serious injury or death can result.”

INLET CAP

The inlet shall have a polished chrome long handle female cap with 6.00” NST threads. The cap shall be engraved with the pump manufacturer’s logo and name. The logo and name shall be painted with a high quality urethane paint.

PTO PUMP SHIFT SPECIFICATIONS – PUMP AND ROLL

An electric powered PTO pump shift shall be installed in the cab driver’s area where not subject to accidental engagement. The pump shift system shall permit “pump and roll” operations, as well as stationary pumping operations.

The following indicator lights shall be included with pump shift.

1. A green indicator light, labeled “PUMP ENGAGED” shall indicate pump has successfully been completed.
2. A green indicator light, labeled “OK TO PUMP” shall indicate the chassis transmission is in neutral, and the parking brake is engaged.
3. A green indicator light, labeled “OK TO PUMP AND ROLL” shall be energized when the pump is engaged, the chassis transmission is in road gear, and the parking brake is released.

When the “OK TO PUMP AND ROLL” indicator is energized, the “OK TO PUMP” indicator shall not be energized.

The pump shall be capable of “Pump and Roll” up to 5 mph where the safety interlock shall disengage the PTO automatically.

REMOTE MOUNTED DISCHARGE PRESSURE GAUGE

One (1) 2.50” Noshok discharge pressure gauge (0-400 PSI) shall be provided in the cab. The face of the gauge shall be a WHITE dial with black letters.

PLUMBING SYSTEM

The plumbing system shall consist stainless steel hard piping, or flexible high-pressure hose, as deemed necessary for the application. Upon completion, the entire system shall be fully pressure tested.

Each gated intake shall be equipped with a 0.75” bleeder valve located in close proximity to the intake. All intakes shall be provided with suitable closures (valves or caps) capable of withstanding 500 PSI.

When any 3.00” or larger intake or discharge is gated (except tank to pump valve), the valve shall have a mechanism to allow the valve to fully open or fully close no faster than 3 seconds.

Any 2.50” or larger discharge outlet, mounted 42.00” or higher from ground, which hose to be connected, and which is not in a hose storage area, shall be supplied with a sweep elbow of at least 30 degrees.

Each gated 1.50” or larger inlet and discharge shall have a quarter turn drain valve installed. The drain valves shall be located along the bottom on each pump panel. Inlets & discharges shall be plumbed to each drain at the lowest point. Each drain shall be plumbed with low-pressure hose to drain below bottom of the apparatus and be directed away from the pump operator. Each drain valve shall have a color-coded function label.

Small lines within the pump enclosure shall be constructed from Synflex hose. Uses include but are not limited to such lines as priming control, gauge lines, drain lines, air control valves, pump shift, supplemental cooling, foam flush and air bleeder valves.

PLUMBING SYSTEM

The plumbing system shall be left unpainted by the apparatus manufacturer.

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.

INTAKE RELIEF VALVE

One (1) Task Force Tips model #A1821 pressure relief valve shall be provided. The valve shall have an easy to read adjustment range from 90 to 300 PSI with easy to read 90, 125, 150, 200, 250, 300 psi settings and an "OFF" position. Pressure adjustment can be made utilizing a ¼" hex key, 9/16" socket or 14mm socket. For corrosion resistance the cast aluminum valve shall be hard coat anodized with a powder coat interior and exterior finish. The valve shall be configured with a 2.6" male NPT threaded inlet. The valve shall have a 2.00" male NPT threaded discharge outlet. The valve shall meet NFPA 1901 requirements for pump inlet relief valve. The unit shall be covered by a five-year warranty.

AIR PRIMER

The fire pump priming system shall consist of one (1) Trident Auto AirPrime 3 Barrel with Gauge. The primer controls shall be located on the pump operator's panel and labeled.

U.L. TEST POINTS

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

MASTER PUMP DRAIN VALVE

A Trident model #30.001.7 type #12-PE master pump drain valve shall be provided. The twelve (12) port brass valve shall have a round chrome plated brass handle. The valve shall be enclosed with a rubber type boot for a single drainage outlet. 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.

PRESSURE GOVERNOR and ENGINE MONITORING DISPLAY

A Fire Research PumpBoss series PBA401-D00 pressure governor and monitoring display kit shall be installed. The kit shall include a control module, intake pressure sensor, discharge

pressure sensor, and cables. The control module case shall be waterproof and have dimensions not to exceed 6.75” high by 4.625” wide by 1.50” deep. The control knob shall be 2.00” in diameter with no mechanical stops, have a serrated grip, and a red idle push button in the center. It shall not extend more than 1.75” from the front of the control module. Inputs for monitoring information shall be from a J1939 databus or engine specific wiring. Inputs to the control module from the pump discharge and intake pressure sensors shall be electrical.

The following continuous displays shall be provided:

- Engine RPM; shown with four daylight bright LED digits more than 0.50” high
- Check engine and stop engine warning LEDs
- Oil pressure; shown on a dual color (green/red) LED bar graph display
- Engine coolant temperature; shown on a dual color (green/red) LED bar graph display
- Transmission Temperature: shown on a dual color (green/red) LED bar graph display
- Battery voltage; shown on a dual color (green/red) LED bar graph display
- Pressure and RPM operating mode LEDs
- Pressure / RPM setting; shown on a dot matrix message display
- Throttle ready LED

The dot-matrix message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator. All LED intensity shall be automatically adjusted for day and nighttime operation.

The program shall store the accumulated operating hours for the pump and engine to be displayed with the push of a button. It shall monitor inputs and support audible and visual warning alarms for the following conditions:

- High battery Voltage
- Low Battery Voltage (Engine Off)
- Low Battery Voltage (Engine Running)
- High Transmission Temperature
- Low Engine Oil Pressure
- High Engine Coolant Temperature
- Out of Water (visual alarm only)
- No Engine Response (visual alarm only)

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

The governor shall operate in two (2) control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between modes. A throttle ready LED shall light when the interlock signal is recognized. The governor shall start in pressure mode and set the engine RPM to idle. In pressure mode the governor shall

automatically regulate the discharge pressure at the level set by the operator. In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi. Other safety features shall include recognition of no water conditions with an automatic programmed response and a push button to return the engine to idle.

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

LEFT SIDE INLET

There will be one (1) auxiliary inlet with a 2.50" valve at the left side pump panel, terminating with a 2.50" female NST adapter.

The auxiliary inlet will be provided with a strainer and a polished chrome swivel.

A 2.50" Darley bronze valve shall be provided for the left side inlet. It shall be a quarter turn ball type, self-locking, fixed pivot design and have a high polished stainless-steel ball.

The valve shall be recessed behind the pump panel.

The side auxiliary inlet will incorporate a quarter-turn ball valve with a sing-type manual control located adjacent the intake.

One (1) 2.50" chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain.

There shall be an Innovative Controls 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.

RIGHT SIDE INLET

There will be one (1) auxiliary inlet with a 2.50" valve at the right-side pump panel, terminating with a 2.50" female NST adapter.

The auxiliary inlet will be provided with a strainer and a polished chrome swivel.

A 2.50" Darley bronze valve shall be provided for the right-side inlet. It shall be a quarter turn ball type, self-locking, fixed pivot design and have a high polished stainless-steel ball.

The valve shall be recessed behind the pump panel.

The side auxiliary inlet will incorporate a quarter-turn ball valve with a sing-type manual control located adjacent the intake.

One (1) 2.50" chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain.

There shall be an Innovative Controls 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.

TANK TO PUMP LINE (MANUAL)

One (1) 3" tank to pump line shall be provided for connection between the water tank and the fire pump.

The valve shall be a 3.00" Elkhart Brass Unibody, model EB30, with a brass valve body and a stainless-steel ball.

The quarter turn valve shall be manually operated with a locking push/pull "T" handle located on the left-hand side pump operator's panel.

TANK FILL

One (1) 2.00" gated full flow pump to tank refill shall be provided. Tank fill plumbing shall utilize 2.00" high pressure hose for tank connection to accommodate flexing between components.

The valve shall be an Akron Brass 2.00" Generation II Swing-Out™ Valve. The valve shall have an all brass body with flow optimizing stainless-steel ball and dual polymer seats.

The quarter turn valve shall be manually operated with a push/pull "T" handle located on the left-hand side pump operator's panel.

LEFT SIDE FRONT DISCHARGE – 2.50"

One (1) 2.50" discharge outlet shall be supplied at the left-hand side pump panel.

The valve shall be a 2.50" Darley bronze valve. It shall be a quarter turn ball type, self-locking, fixed pivot design and have a high polished stainless-steel ball.

The quarter turn valve shall be manually operated with a lever control from the left-hand side pump operator's panel.

One (1) 2.50" Noshok discharge pressure gauge (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters.

There shall be an Innovative Controls 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.

The discharge shall have a 2.50” Female NST swivel rocker lug x 2.50” Male NST 30-degree chrome elbow adapter provided.

One (1) 2.50: chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped rocker lugs and chain.

LEFT SIDE REAR DISCHARGE – 2.50”

One (1) 2.50” discharge outlet shall be supplied at the left-hand side pump panel.

The valve shall be a 2.50” Darley bronze valve. It shall be a quarter turn ball type, self-locking, fixed pivot design and have a high polished stainless-steel ball.

The quarter turn valve shall be manually operated with a lever control from the left-hand side pump operator’s panel.

One (1) 2.50” Noshok discharge pressure gauge (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters.

There shall be an Innovative Controls 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.

The discharge shall have a 2.50” Female NST swivel rocker lug x 2.50” Male NST 30-degree chrome elbow adapter provided.

One (1) 2.50: chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped rocker lugs and chain.

RIGHT SIDE FRONT DISCHARGE – 2.50”

One (1) 2.50” discharge outlet shall be supplied at the righthand side pump panel.

The valve shall be a 2.50” Darley bronze valve. It shall be a quarter turn ball type, self-locking, fixed pivot design and have a high polished stainless-steel ball.

The quarter turn valve shall be manually operated with a lever control from the left-hand side pump operator’s panel.

One (1) 2.50” Noshok discharge pressure gauge (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters.

There shall be an Innovative Controls 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.

The discharge shall have a 2.50” Female NST swivel rocker lug x 2.50” Male NST 30-degree chrome elbow adapter provided.

One (1) 2.50: chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped rocker lugs and chain.

RIGHT SIDE REAR DISCHARGE – 2.50”

One (1) 2.50” discharge outlet shall be supplied at the right-hand side pump panel.

The valve shall be a 2.50” Darley bronze valve. It shall be a quarter turn ball type, self-locking, fixed pivot design and have a high polished stainless-steel ball.

The quarter turn valve shall be manually operated with a lever control from the left-hand side pump operator’s panel.

One (1) 2.50” Noshok discharge pressure gauge (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters.

There shall be an Innovative Controls 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.

The discharge shall have a 2.50” Female NST swivel rocker lug x 2.50” Male NST 30-degree chrome elbow adapter provided.

One (1) 2.50: chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped rocker lugs and chain.

CROSSLAY PRE-CONNECT #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. 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.

The crosslay discharge shall terminate below the hose bed floor with a 1.50” NST male chicksan swivel adapter.

A 2.00” Elkhart Brass Unibody model EB20 valve shall be provided for the crosslay #1 discharge. The valve shall have an all brass valve body and stainless-steel ball.

The quarter turn valve shall be manually operated with a locking push/pull “T” handle located on the left-hand side pump operator’s panel.

One (1) 2.50” (6.35cm) Noshok discharge pressure gauge (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters.

There shall be an Innovative Controls 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.

CROSSLAY PRE-CONNECT #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. 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.

The crosslay discharge shall terminate below the hose bed floor with a 1.50” NST male chicksan swivel adapter.

A 2.00” Elkhart Brass Unibody model EB20 valve shall be provided for the crosslay #1 discharge. The valve shall have an all brass valve body and stainless-steel ball.

The quarter turn valve shall be manually operated with a locking push/pull “T” handle located on the left-hand side pump operator’s panel.

One (1) 2.50” (6.35cm) Noshok discharge pressure gauge (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters.

There shall be an Innovative Controls 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.

CROSSLAY #3 2.50” HOSEBED (“DEADLAY”)

One (1) deadlay hosebed, without plumbing, shall be installed above the pump compartment. The deadlay shall have the capacity to hold 250 feet of 2.50” fire hose and nozzle.

DECK GUN DISCHARGE

There shall be a 3.00” deck gun discharge installed at the top of the pump. The valve shall be a quarter turn ball type of fixed pivot design. 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 valve shall be a 3.00” Elkhart Brass Unibody, model EB30, with a brass valve body and stainless-steel ball.

The valve shall be equipped with an Elkhart Slo Cloz to prevent changing the position of the valve from full open to full close, or vice-versa, in less than 3 seconds as required by NFPA.

The quarter turn valve shall be manually operated with a locking push/pull “T” handle located on the left-hand side pump operator’s panel.

One (1) 2.50” (6.35cm) Noshok discharge pressure gauge (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters.

There shall be an innovative Controls 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.

DECK GUN MOUNTING ADAPTER

One (1) 3.00” FNPT 150# Ansi Companion Flange shall be installed on the end of the deck gun outlet for mounting of a deck gun.

ELKHART STINGER 2.0 MONITOR

One (1) Elkhart Stinger 2.0 model 8297-98F with a 3.00” waterway shall be mounted on the deck gun riser. It shall have one (1) 3.00” 150# ANSI flange base inlet, and one (1) 2.50” NST outlet.

The monitor shall be constructed of durable, lightweight Elk-O-Lite. It shall be easily detached from the base for attaching to an auxiliary portable mount. The monitor shall have hand-wheel driven worm gear for vertical movement from 75 degrees above to 15 degrees below horizontal. The monitor shall have full 360 degrees horizontal movement with positive twist-lock mechanism. It shall be capable of flowing up to 1250 gpm. The monitor shall have a 200 PSI liquid-filled gauge.

ST-194 STACKED TIPS

One (1) set of Elkhart model ST-194 quad stacked tips shall be provided. The tip orifices shall be 1-3/8", 1-1/2", 1-3/4", and 2.00". The tips shall be fabricated of lightweight Elk-O-Lite.

ELKHART 282-A STREAM SHAPER

One (1) Elkhart model 282-A Elk-O-Lite pipe/stream shaper shall be provided for the monitor.

UNDER CAB BOOSTER REEL – RH SIDE

One (1) HANNAY painted steel booster reel with electric rewind shall be supplied and mounted under the rear cab step in a diamond plate enclosure on the right-hand side. The reel shall be capable of carrying 100.00' of 1.00" booster hose.

HOSE REEL DISCHARGE

The hose reel discharge shall be plumbed to the hose reel utilizing 1.50" Class 1 rubber hose.

The valve shall be an Elkhart Brass Unibody, model EB15, with a brass valve body and stainless-steel ball.

The quarter turn valve shall be manually operated with a locking push/pull "T" handle located on the life-hand side of the pump operator's panel.

One (1) 2.50" (6.35cm) Noshok discharge pressure gauge (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters.

There shall be one (1) hose reel rewind switch installed and properly labeled. It shall be a weather-resistant momentary push button switch and shall be located near the booster reel.

One (1) 4-way, full length stainless-steel capture roller assembly shall be installed near the reel.

BOOSTER REEL HOSE

The booster reel shall be supplied with 100' of 1.00" NST red rayon braided reinforced neoprene booster reel hose. The hose shall have a minimum proof test pressure of 800 PSIG.

UNDER CAB BOOSTER REEL – LH SIDE

One (1) HANNAY painted steel booster reel with electric rewind shall be supplied and mounted under the rear cab step in a diamond plate enclosure on the left-hand side. The reel shall be capable of carrying 100.00’ of 1.00” booster hose.

HOSE REEL DISCHARGE

The hose reel discharge shall be plumbed to the hose reel utilizing 1.50” Class 1 rubber hose.

The valve shall be an Elkhart Brass Unibody, model EB15, with a brass valve body and stainless-steel ball.

The quarter turn valve shall be manually operated with a locking push/pull “T” handle located on the life-hand side of the pump operator’s panel.

One (1) 2.50” (6.35cm) Noshok discharge pressure gauge (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters.

There shall be one (1) hose reel rewind switch installed and properly labeled. It shall be a weather-resistant momentary push button switch and shall be located near the booster reel.

One (1) 4-way, full length stainless-steel capture roller assembly shall be installed near the reel.

BOOSTER REEL HOSE

The booster reel shall be supplied with 100’ of 1.00” NST red rayon braided reinforced neoprene booster reel hose. The hose shall have a minimum proof test pressure of 800 PSIG.

MASTER INTAKE GAUGE

One (1) Noshok, 4.00” liquid filled master intake gauge with a 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.

MASTER PRESSURE GAUGE

One (1) Noshok, 4.00” 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.

MASTER GAUGE BEZEL ASSEMBLY

The two (2) master gauges shall be installed into decorative chrome-plated zinc mounting bezel that also incorporates a test port manifold and a graphic overlay that identifies the master intake and discharge gauges, the vacuum test port, and the pressure test port.

LED WATER LEVEL GAUGE (PUMP PANEL)

One (1) Innovative Controls SL-PLUS model #3030730-02-37, Ultra-Bright LED water level monitor shall be provided on the left-hand side of the pump operator's control panel. The gauge shall feature a 180 degree highly visible wide view ultra-brite LED display showing the level of the booster tank.

PUMP, MODULE, AND RELATED ITEMS

SIDE PANEL MODULE

The pump module body shall be a self-supported structure mounted independently from the body and chassis cab. The pump module shall be constructed entirely of extrusions and aluminum plate. 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. The welded ends of the tubing shall be chamfered prior to welding and shall be ground smooth.

INDEPENDENT PUMP MODULE

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

PUMP MODULE WIDTH

Pump Module to be 40.00" (side to side).

HINGED GAUGE PANEL

The pump operator's upper gauge panel shall be located on the left-hand side of the pump module above the main control panel. It shall be full width and hinged for easy access. It shall be provided with two (2) latches and a means to prevent the front of the gauge panel from coming in contact with other panels when open.

LEFT SIDE PUMP PANEL

The pump panel installed on the left-hand side of the pump enclosure shall be fastened to the pump enclosure with stainless-steel bolts. They shall be completely removeable and designed for easy access and servicing.

PANEL FASTENERS

Stainless-steel machine screws and lock washers shall be used to hold these panels in position. The panels shall be easily removable to provide complete access to the pump for major service.

RIGHT SIDE PUMP PANEL

The pump panel installed on the right-hand side of the pump enclosure shall be fully removable without the use of hand tools.

SIDE PANELS – BLACK VINYL

The pump compartment module shall have left, and right-side pump panels constructed of black vinyl clad aluminum sheets.

CROSSLAY HOSEBED

The crosslays shall be arranged on top of the pump module with #1 crosslay toward the front of the pump house and the #2 crosslay immediately behind the first, and crosslay #3 (2.50" Deadlay) immediately behind the second.

DUNNAGE AREA

The dunnage area shall be provided above the pump enclosure to the rear of the two (2) crosslays. This area shall be furnished with a aluminum tread plate floor and shall be closed on the sides.

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

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.

PUMP PANEL LIGHT SHIELD LEFT

One (1) extruded aluminum light shield assembly shall be provided above the left side pump panel area.

One (1) waterproof strip light with 72 LEDs shall be installed within the shield. The light(s) shall be 23.80" in length, have a clear acrylic lens, aluminum housing, and have a minimum effective output of 1200 lumens.

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

PUMP PANEL LIGHT SHIELD RIGHT

One (1) extruded aluminum light shield assembly shall be provided above the right-side pump panel area.

One (1) waterproof strip light with 72 LEDs shall be installed within the shield. The light(s) shall be 23.80" in length, have a clear acrylic lens, aluminum housing, and have a minimum effective output of 1200 lumens.

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

PUMP COMPARTMENT LIGHTS

Two (2) LED lights shall be provided inside the pump compartment area. The dimensions of the lights shall be 1.00" x 3.00". Each light shall operate at 12 volts DC, generate 120 lumens, and shall be mounted on an adjustable bail mount bracket.

The lights shall function with the switch for the pump operator's gauge panel lights.

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 side panel 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 side panel 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 AND REAR PUMP HOUSE ENCLOSURE

The front and rear of the pump enclosure shall be enclosed with .08" bright aluminum treadplate.

WARNING LABEL, FAMA 22, HOSE RESTRAINT REQUIRED

Safety sign FAMA 22, which warns of the need to secure hose, shall be visible to personnel at each side of the 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 the 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 FAMA 25, which warns of the need for training prior to operating the apparatus, shall be located on the pump operator's panel.

PUMP PANEL ID PLATE

An identification plate, prepared by the fire pump manufacturer, 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.

PUMP PANEL COLOR TRIM PANELS

Innovative Controls intake and discharge trim rings shall be installed to the apparatus with mounting bolts. These bezel assemblies will be used to identify intake and discharge ports with color and verbiage. These trim rings are designed and manufactured to withstand the specified apparatus service environment and shall be backed by a warranty equal to that of the exterior paint and finish. The specified assemblies feature a chrome-plated panel-mount bezel with durable UV resistant polycarbonate inserts. These UV resistant polycarbonate graphic inserts shall be sub-surface screen printed to eliminate the possibility of wear and protect the inks from fading. All inserts labels shall be backed with 3M permanent adhesive (200MP), which meets UL969 and NFPA standards.

FOAMPRO 1600 FOAM SYSTEM

The apparatus shall be equipped with an electronic, fully automatic, variable speed, direct injection, discharge side foam proportioning system. The system shall be capable of handling Class A foam concentrate. The foam proportioning operation shall be based on direct measurement of water flows and remain consistent within the specified flows and pressures. System must be capable of delivering accuracy to within 3% of calibrated settings over the advertised operation range when installed according to factory standards. The system shall be equipped with a control module suitable for installation on the pump panel. Incorporated within the motor driver shall be a microprocessor that receives input from the system

flowmeter, while also monitoring foam concentrate pump output, comparing valves to ensure that the operator preset proportional amount of foam concentrate is injected into the discharge side of the fire pump.

The control module shall enable the pump operator to:

- Activate the foam proportioning system
- Select proportioning rates from 0.1% to 1.0%
- See a “low concentrate” warning light flash when the foam tank runs low and in two minutes, if foam concentrate is not added to the tank, shut the foam concentrate pump down

A 12-volt electric motor driven positive displacement plunger pump shall be provided. The pump capacity shall be from 0.1 gpm (0.38 L/min) to 1.7 gpm (6.4 L/min) at 200 psi (13.8 BAR) with a maximum operating pressure up to 400 psi (27.6 BAR). The pump shall have the capability to draw 3 foot of lift. The system will draw a maximum of 30 amps @ 12. The motor shall be controlled by the microprocessor (mounted to the base of the pump). It shall receive signals from the control module and power the 1/3 hp (.25 Kw) electric motor in a variable speed duty cycle to ensure that the correct proportion of concentrate is injected into the water stream.

A full flow check valve shall be provided in the discharge piping to prevent foam contamination of fire pump and tank water. A 12 psi (.83 BAR) opening pressure check valve shall be provided in concentrate line.

FOAM SYSTEM RATING PLACARD FOR FOAM PRO 1600 SYSTEM

There shall be a Foam Pro part number 6032-0018 foam system rating placard provided in close proximity to the pump operator’s position as required by NFPA 1901.

FOAM SYSTEM SCHEMATIC PLACARD FOR SINGLE TANK SYSTEM

There shall be a Foam Pro part number 6032-0015 foam system layout placard provided and located in close proximity to the pump operator’s position as required by NFPA 1901.

FOAM LEVEL GAUGE, PUMP PANEL, LH SIDE

One (1) Innovative Controls SL-PLUS model #3030732-01-37A, Ultra-Bright LED Class A Foam level monitor shall be provided on the left-hand side pump operator’s control panel. The gauge shall feature a 180 degree highly visible wide view ultra-brite LED display showing the level of the foam tank.

The gauge shall use a pressure transducer #3030376-01 installed near the bottom of the foam tank to determine the correct volume in the tank.

WATER TANK, FIRE BODY & RELATED COMPONENTS

BODY CONSTRUCTION

The body and water tank shall be fabricated using special high strength copolymer materials; providing a durable, impact resistant, corrosion resistant, and lightweight design.

INTEGRAL BODY/TANK CONSTRUCTION

The water tank shall be integral with the body. The body and water tank shall be fabricated using the same special high strength copolymer materials; providing a durable, impact resistant, corrosion resistant, and lightweight design. Due to the added strength and durability provided with this integral design, there shall be NO EXCEPTION to this requirement.

SUBFRAME

The body shall be attached to and supported by a heavy duty, spring loaded, steel subframe bolted to the truck frame. The subframe shall be spring mounted to the chassis frame to allow for independent flexing of the body in relation to the chassis frame. The subframe shall be constructed from structural steel angle and C-channels. No welding shall be allowed to the truck frame. Rubber isolator strips shall be installed at all contact points between body and subframe.

Due to the importance of the subframe flexibility and corrosion resistance, there shall be no exception to these requirements.

1500 GALLON TANK – COPOLYMER

The tank shall have a capacity of 1500 US gallons / 1249 Imperial gallons / 5678 liters,

The booster tank shall be constructed of a copolymer material and properly baffled.

The tank shall be provided with at least one (1) full length longitudinal baffle and a sufficient number of transverse baffles so that the maximum dimension of any spaces in the tank either transverse or longitudinal, shall not exceed 46.00”, and not less than 23.00”.

The baffles shall have openings at both the top and bottom to permit movement of air and water between spaces to allow maximum flow requirements. The baffles shall form an

integral part of the tank, and design shall be to provide and maintain safe road stability regardless of water level.

The tank outlet connection shall be designed with a 12.00” anti-swirl baffle plate above tank outlet to prevent air from missing with the water when pumping from the tank. The tank fill tower shall extend upward from the hose bed the same approximate height as the body sides.

The tank shall be mounted per the manufacturer’s requirements.

The tank shall carry a lifetime warranty provided, per the tank manufacturer.

The fill tower shall be installed on front corner of the tank in tank top, unless options such as coffin boxes are specified by the purchaser. It shall be of adequate size, minimum 10.00” X 10.00”, to accommodate overflow and vents, and shall have a hinged cover and screen installed.

FILL TOWER LOCATION

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

SUMP

There shall be one (1) sump standard per tank. The sump shall be located in the front left 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 sump.

TANK OVERFLOW

The fill tower shall have a 4.00” overflow 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.

DIRECT TANK FILL, REAR

There shall be a one (1) 2.50” direct tank fill located on the rear of the apparatus. The valve shall be an Elkhart Unibody swing out valve model EB25. The valve inlet shall be a 2.50” female NST and feature a 30-degree droop with a wire screen inlet strainer and a polished chrome swivel. The valve shall be actuated by an Elkhart Brass model D1F manual actuator installed on the valve.

PLUG

One (1) 2.50” chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain.

FOAM TANK – 20 US GALLONS – CLASS A

A foam tank shall be installed inside the main water tank. The foam tank shall have a capacity of 20 U.S. gallons for Class A foam and shall be constructed of polypropylene material.

The foam cell shall have a rectangular fill tower, approximately 10.00” x 10.00”, with a hinged cover and a removeable screen. A tank drain shall be provided inside the pump compartment.

FOAM FILL LABEL

A label that reads “FOAM TANK FILL” shall be placed at the foam fill opening.

DO NOT MIX FOAM LABEL

A FAMA 19 warning label shall be placed near the foam tank that reads “Foam Failure Hazard. Do NOT mix brands and types of foam concentrate. Mixed concentrate may fail to form proper foam. Poor foam may fail to suppress fire leading to death”.

HOSE BED CONSTRUCTION

The hose bed walls shall be of the same copolymer materials as the body, reinforced at the corners. The upper, outer edges shall have a solid tube type design for strength and stiffness. The hose bed shall be free from all projections, which may interfere with the unloading of hose.

The interior surface of the walls in the hose bed area shall be overlaid with textured black copolymer material for ultimate protection.

HOSE BED FLOORING

Hose bed flooring shall be furnished and installed full length, and width of the hose bed area. The flooring shall help capacity hose drying when loaded on the apparatus.

The flooring shall be constructed from 1.00” high c 6.00” wide polymer slats that shall be nitrogen welded into a grid system.

BULKHEAD HOSEBED DIVIDER/DUNNAGE COMPARTMENT

A bulkhead divider, constructed of 0.75” copolymer material, shall be provided in the front area of the hosebed separating the hosebed from the tank fill tower(s). The balance of this area that is not occupied by fill tower or other mounted equipment shall be used as a dunnage compartment.

HOSE BED STORAGE CAPACITY

The hose bed shall be designed to have a storage capacity for the specified fire district supplied fire hose.

HOSE BED DIVIDER(S)

One (1) full length, full height, adjustable hosebed divider shall be installed in the hosebed. The divider(s) shall be constructed of 0.75” copolymer material.

The divider(s) shall be adjustable by sliding in tracks which are recessed flush into the hosebed flooring, one (1) on the front and one (1) on the rear. The divider(s) shall be held in place by two (2) bolts on each end of the divider(s).

There shall be a hand hole at the rear of the divider(s) to assist the firefighter’s grip when accessing the hosebed area.

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.

COPOLYMER PUMPER BODY CONSTRUCTION

The body shall be fabricated using special high strength, copolymer sheet materials, providing a durable, impact resistant, corrosion resistant, and lightweight body. The body shall be fabricated using Aristech TI-4007-L copolymer (or equal) extruded sheets. Sheet thickness shall be 0.375”, 0.50” and 0.75”. All seams shall be welded. All outside corners on body shall have a minimum 0.50” radius. The entire body shall be a welded one-piece module, assembled and painted prior to mounting on the subframe and the chassis. Due to the importance of the strength and impact resistance of the copolymer material, there shall be no exception to these requirements. Only builders who can show examples of previous copolymer constructed bodies shall be accepted.

COMPARTMENT CONSTRUCTION

The compartments, including the floors, shall be constructed of the same heavy-duty smooth copolymer material as used for the body. All seams shall be completely welded. Divider walls between compartments shall be single wall construction with a minimum wall thickness of 0.375”

For adequate ventilation and air displacement, each compartment shall be properly louvered with square vents. The forward wall of the front compartments, and rearmost wall of the rear compartments, shall have removeable panels, constructed from the same body material, to cover and protect all 12-volt electrical accessories mounted on the walls. The panels shall be removeable to provide access to those components.

FASTENERS

All fasteners used to mount or secure components to the body shall be of stainless-steel construction. Items fastened directly into the body shall use sheet metal screws, stainless-steel T-nuts or threaded brass inserts, depending on application.

COMPARTMENT SHELF TRACKS – ALUMINUM

Heavy-duty aluminum Uni-Strut tracks shall be provided in the compartments as specified. The track shall not be welded to the apparatus body. The Uni-Strut tracks shall allow the

shelving to be positioned at any location in the compartment by simply loosening a bolt on each end of the shelf, push inward on the bolt, and sliding the shelf to the desired location.

FENDER PANELS

Side fender panels above the rear wheels shall be heavy duty smooth copolymer material. Each shall be painted the same color as the exterior body.

FENDER LINERS

Copolymer fender liners shall be welded into the wheel well area, above the rear wheels. Adequate clearance shall be provided for the installation of tire chains. The inner liners shall be textured black copolymer material.

FENDERETTES

Four (4) polished stainless-steel fenderettes shall be provided over the rear wheel well openings, two (2) each side. Each fenderettes shall be made of 14 gauge 304 stainless-steel. The stainless-steel fenderettes shall be secured into place with stainless-steel fasteners and shall be easily removable for replacement.

The fenderettes must be bolted into place and removable for replacement.

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 100.00" wide.

BODY WIDTH

The apparatus body shall be 219.00" long.

COMPARTMENT HEIGHT, LH SIDE

The left-hand side body compartments shall be 57.50".

COMPARTMENT HEIGHT, RH SIDE

The right-hand side body compartments shall be 57.50”.

COMPARTMENT HEIGHT, LH SIDE

The full height side compartments on the left-hand side of the pumper body shall have a useable depth of 27.00”.

COMPARTMENT HEIGHT, RH SIDE

The full height side compartments on the right-hand side of the pumper body shall have a useable depth of 27.00”.

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 ingress 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.

COMPARTMENT SHELF TRACKS – ALUMINUM

Heavy-duty aluminum Uni-Strut tracks shall be provided in the compartments as specified. The tracks shall not be welded to the apparatus body. The Uni-Strut tracks shall allow the shelving to be positioned at any location in the compartment by simply loosening a bolt on each end of the shelf, pushing inward on the bolt, and sliding the shelf to the desired location.

COMPARTMENT SHELVING-SIDE COMPARTMENTS

The compartment shelving shall be constructed from the same copolymer material as the body. Each shelf shall have a 2” upward bend on each side.

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 and any ensuing paperwork or drawings after contract execution.

- Door Opening: 27:50” wide x 57.50” high x 27.00” depth

The compartment will have one (1) SCBA bracket mounted inside to accommodate one (1) SCBA pack and one (1) 20-lb Fire Extinguisher provided and mounted.

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

COMPARTMENT LIGHT(S)

One (1) 36.00: R.O.M. DuroStrip LED strip light shall be installed inside the compartment. The light(s) shall be IPX7 water resistant, Mil 810 rev A vibration tested, and provide 250 lumens of light per foot.

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

One (1) 6.00” x 5.00” black plastic louvered vent(s) shall be provided in the compartment.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted Uni-Strut trac for shelving installation.

ADJUSTABLE SHELF(S)

There shall be One (1) full depth adjustable shelf located in the compartment. The shelf(s) shall be constructed of the same poly material as the body.

LEFT SIDE ABOVE WHEEL COMPARTMENTS, 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 and any ensuing paperwork or drawings after contract execution.

- Door Opening: 61.75” wide x 27.25” high x 27.00” depth

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

COMPARTMENTS LIGHT(S)

One (1) 18.00” R.O.M. DuroStrip LED strip light(s) shall be installed inside the compartment. The light(s) shall be IPX7 water resistant, Mil 810 rev A vibration tested, and provide 250 lumens of light per foot.

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

The compartment shall be cross vented into the full height compartments.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted Uni-Strut trac for shelving installation.

ADJUSTABLE SHELF(S)

There shall be One (1) full depth adjustable shelf located in the compartment. The shelf(s) shall be constructed of the same poly material as the body.

LEFT SIDE ABOVE WHEEL COMPARTMENTS, L3

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 L3 within these specifications and any ensuing paperwork or drawings after contract execution.

- Door Opening: 61.75” wide x 27.25” high x 17.00” depth

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

COMPARTMENTS LIGHT(S)

One (1) 18.00” R.O.M. DuroStrip LED strip light(s) shall be installed inside the compartment. The light(s) shall be IPX7 water resistant, Mil 810 rev A vibration tested, and provide 250 lumens of light per foot.

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

The compartment shall be cross vented into the full height compartments.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted Uni-Strut shelf trac for shelving installation.

ADJUSTABLE SHELF(S)

There shall be One (1) half depth adjustable shelf located in the compartment. The shelf(s) shall be constructed of the same poly material as the body.

LEFT SIDE COMPARTMENT BEHIND REAR WHEELS, L4

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 L4 within these specifications and any ensuing paperwork or drawings after contract execution.

- Door Opening: 41.00” wide x 57.50” high x 27.00” depth

The compartment will have a pull-out tray for the Holmatro Extrication equipment.

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

COMPARTMENT LIGHT(S)

One (1) 36.00” R.O.M. DuroStrip LED strip light shall be install inside the compartment. The light(s) shall be IPX7 water resistant, Mil 810 rev A vibration tested, and provide 250 lumens of light per foot.

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

One (1) 6.00” x 5.00” black plastic louvered vent(s) shall be provided in the compartment.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted Uni-Strut shelf trac for shelving installation.

ADJUSTABLE SHELF(S)

There shall be One (1) full depth adjustable shelf located in the compartment. The shelf(s) shall be constructed of the same poly material as the body.

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 and any ensuing paperwork or drawings after contract execution.

- Door Opening: 27.50” wide x 57.50” high x 27.00” depth

The compartment will have one (1) SCBA bracket mounted inside to accommodate one (1) SCBA pack and one (1) 20-lb Fire Extinguisher provided and mounted.

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

COMPARTMENT LIGHT(S)

One (1) 36.00: R.O.M. DuroStrip LED strip light shall be installed inside the compartment. The light(s) shall be IPX7 water resistant, Mil 810 rev A vibration tested, and provide 250 lumens of light per foot.

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

One (1) 6.00” x 5.00” black plastic louvered vent(s) shall be provided in the compartment.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted Uni-Strut trac for shelving installation.

ADJUSTABLE SHELF(S)

There shall be One (1) full depth adjustable shelf located in the compartment. The shelf(s) shall be constructed of the same poly material as the body.

RIGHT SIDE ABOVE WHEEL COMPARTMENTS, 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 and any ensuing paperwork or drawings after contract execution.

- Door Opening: 61.75” wide x 27.25” high x 17.00” depth

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

COMPARTMENTS LIGHT(S)

One (1) 18.00” R.O.M. DuroStrip LED strip light(s) shall be installed inside the compartment. The light(s) shall be IPX7 water resistant, Mil 810 rev A vibration tested, and provide 250 lumens of light per foot.

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

The compartment shall be cross vented into the full height compartments.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted Uni-Strut shelf trac for shelving installation.

ADJUSTABLE SHELF(S)

There shall be One (1) half depth adjustable shelf located in the compartment. The shelf(s) shall be constructed of the same poly material as the body.

RIGHT SIDE ABOVE WHEEL COMPARTMENTS, R3

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 R3 within these specifications and any ensuing paperwork or drawings after contract execution.

- Door Opening: 61.75” wide x 27.25” high x 17.00” depth

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

COMPARTMENTS LIGHT(S)

One (1) 18.00” R.O.M. DuroStrip LED strip light(s) shall be installed inside the compartment. The light(s) shall be IPX7 water resistant, Mil 810 rev A vibration tested, and provide 250 lumens of light per foot.

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

The compartment shall be cross vented into the full height compartments.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted Uni-Strut shelf trac for shelving installation.

ADJUSTABLE SHELF(S)

There shall be One (1) half depth adjustable shelf located in the compartment. The shelf(s) shall be constructed of the same poly material as the body.

RIGHT SIDE COMPARTMENT BEHIND REAR WHEELS, R4

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 R4 within these specifications and any ensuing paperwork or drawings after contract execution.

- Door Opening: 41.00” wide x 57.50” high x 27.00” depth

The compartment will have a pull-out tray that the Honda Generator can be placed on.

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

COMPARTMENT LIGHT(S)

One (1) 36.00” R.O.M. DuroStrip LED strip light shall be install inside the compartment. The light(s) shall be IPX7 water resistant, Mil 810 rev A vibration tested, and provide 250 lumens of light per foot.

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

One (1) 6.00” x 5.00” black plastic louvered vent(s) shall be provided in the compartment.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted Uni-Strut shelf trac for shelving installation.

ADJUSTABLE SHELF(S)

There shall be One (1) full depth adjustable shelf located in the compartment. The shelf(s) shall be constructed of the same poly material as the body.

REAR BODY CONFIGURATION

The rear of the apparatus body shall have a recessed design with the side compartments extending past the rear compartment. This design helps decrease the overall length of the apparatus.

REAR CENTER COMPARTMENT, C-R

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 and any ensuing paperwork or drawings after contract execution.

- Door Opening: 39.00" wide x 54.50" high x 20.25" depth

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

COMPARTMENT LIGHT(S)

One (1) 18.99" R.O.M. DuroStrip light(s) shall be installed inside the compartment. The light(s) shall be IPX7 water resistant, MIL 810 rev A vibration tested, and provide 250 lumens of light per foot.

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

One (1) 6.00" x 5.00" black plastic louvered vent(s) shall be provided in the compartment.

REAR TAILBOARD

The rear tailboard shall be bolted to a heavy-duty steel support assembly attached to the chassis frame. The rear tailboard shall be a minimum of 10.00" deep and constructed of embossed fire apparatus quality bright aluminum treadplate or grip struct material.

The rear tailboard shall be full width between the extended side compartments.

The step height from ground to first step shall not exceed 24.00".

LADDER STORAGE – RIGHT

A ladder storage compartment shall be provided at the right side of the apparatus between the water tank and the body compartments. The compartment and all support for the ladders shall be constructed from the same copolymer material as the body. It shall be located just below

the hose bed level. Access shall be from the rear of the apparatus. Appropriate stops shall be provided at the front of the ladders.

In order to provide a comfortable and safe level of access to the ladders, and allow maximum compartmentation, there shall be no exception allowed to this feature.

A vertically hinged door with push button style latches shall be provided to enclose the ladders at the rear. The hinged door shall be constructed of smooth material, with chevron striping applied to match the rear of the apparatus body.

The ladder storage shall have capacity for one (1) aluminum 24 ft. two-section extension ladder, and one (1) aluminum 14-foot roof ladder.

FOLDING ATTIC LADDER MOUNTING

Storage shall be provided for one (1) 10 ft. folding attic ladder in the ground ladder storage compartment.

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.

SUCTION HOSE STORAGE – LEFT

A suction hose storage compartment shall be provided at the left side of the apparatus between the water tank and the body compartments. The compartment shall be constructed from the same copolymer material as the body. It shall be located just below the hose bed level. Access shall be from the rear of the apparatus.

In order to provide a comfortable and safe level of access to the hoses, and allow maximum compartmentation, there shall be no exception allowed to this feature.

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.

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' sections of hard suction hose.

BARREL STRAINER STORAGE

Storage area for one (1) barrel strainer shall be provided in the suction hose compartment.

RUBRAILS

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

FRONT BODY PROTECTION PANELS

The front body corners shall have a 0.125" aluminum diamond plate stone guards added to the lower corners. The stone guards shall be a minimum of 12.00" high.

COMPARTMENT TOP PROTECTION PANELS

Aluminum tread plate overlays and panels shall be installed the full length of the compartment tops.

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 REAR

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, approximately 30.00” in length, 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.

LEFT FRONT WHEEL WELL PROVISION – LH Wheel Chock 1

The wheel well provisions shall be located on the left side of the apparatus, ahead of the rear wheels, and will have storage for two (2) Wheel Chocks.

SCBA BOTTLE COMPARTMENT

One (1) SCBA bottle compartment that will hold three (3) SCBA bottles shall be installed in the wheel well area.

LEFT REAR WHEEL WELL PROVISION – LH SCBA 2

The wheel well provisions shall be located on the left side of the apparatus, ahead of the rear wheels, and will have storage for three (3) SCBA bottles.

SCBA BOTTLE COMPARTMENT

One (1) SCBA bottle compartment that will hold three (3) SCBA bottles shall be installed in the wheel well area.

RIGHT FRONT WHEEL WELL PROVISION – RH SCBA 1

The wheel well provisions shall be located on the right side of the apparatus, ahead of the rear wheels, and will have storage for three (3) SCBA bottles.

SCBA BOTTLE COMPARTMENT

One (1) SCBA bottle compartment that will hold three (3) SCBA bottles shall be installed in the wheel well area.

RIGHT REAR WHEEL WELL PROVISION – RH SCBA 2

The wheel well provisions shall be located on the right side of the apparatus, behind the rear wheels, and will have storage for three (3) SCBA bottles.

SCBA BOTTLE COMPARTMENT

One (1) SCBA bottle compartment that will hold three (3) SCBA bottles shall be installed in the wheel well area.

12 VOLT ELECTRICAL SECTION

NFPA 1901 CERTIFIED 12 VOLT ELECTRICAL SYSTEM

The 12-voltt 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 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 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 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.

CLASS 1 ES-KEY SYSTEM

The electrical system shall utilize Class 1 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 Class 1 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).

LOW VOLTAGE ALARM

One (1) Cole Hersee model # 4112-RC light/buzzer shall be located in the cab and wired to the low voltage monitor on the ES-Key System.

SWITCH PANEL

The system shall be controlled from a multiplexed switch panel located in the center console between the driver and officer position. The switch panel shall have back lighted identification plates on a non-glare panel surface. The panel shall be illuminated when the master battery disconnect switch is in the "On" position.

CHASSIS GROUND LIGHTS

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

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 No 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, lights towers etc. are not in their “ready for transport” position.

REAR DIRECTIONALS

Rear directional lighting shall be supplied as follows:

Two (2) Whelen 600 Series model 60BTT LED brake/taillights shall be installed on the rear of the body. Each light shall have a red lens.

Two (2) Whelen 600 Series model 60A00TAR Amber LED turn signal lights with a populated arrow shall be installed on the rear of the body.

Two (2) Whelen 600 Series model 60C00VCR LED reverse lights shall be installed on the rear of the body.

HOUSING FOR DIRECTIONALS

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

Two (2) amber LED side marker and turn lights shall be provided on the apparatus lower side, forward of the rear axle, one (1) each side if the apparatus is 30 feet long or longer.

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.

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, TecNig 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 90SC0ENZR Super-LED surface mount gradient scene lights shall be installed, one (1) each side on the upper rear of the apparatus body.

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

SCENE LIGHT SWITCHING

One (1) scene light switch with indicator shall be installed on the 1Touch switch panel to control the rear scene light(s). The switch shall be labeled "REAR SCENE".

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

LED TELESCOPIC BOTTOM RAISE FLOODLIGHTS

Two (2) Akron SceneStar LED model ELSS-SLDC telescopic lights shall be installed. The light pole shall be anodized aluminum and have knurled twist lock mechanism to secure the extension pole in position. The extension pole shall rotate 360 degrees. The outer pole shall be grooved aluminum extrusion and qualify as an NFPA compliant handrail. The pole mounting brackets shall have a 4.00" offset. Wiring shall extend from the pole bottom with a 4' retractile cord.

The lamp head shall have eight (8) ultra-bright white LEDs. It shall operate at 12 volts DC, draw 13 amps, and generate 14,000 lumens. The lamp head shall direct 50 percent of the light onto the action area while providing 50 percent to illuminate the working area. The light head shall tilt up and down with two heavy duty handles and shall be mounted with a swivel assembly. The lamp head shall incorporate heat-dissipating fins and be no more than 5.60"

deep by 4.25” high by 14.00” wide. The lamp head and mounting arm shall be powder coated white. The floodlight shall be for fire service use.

An on/off switch with weatherproof boot shall be provided on the light head.

The telescopic light poles will be located on the back of the cab, One (1) on the driver’s side and one (1) on the officer’s side of the cab.

LIGHT TOWER PROVISION

The cab roof shall include reinforcement for a light tower. The reinforcement shall consist of four (4) aluminum pads mounted to the exterior of the body roof and additional internal body roof structure.

LIGHT TOWER ORIENTATION

The roof reinforcement shall be installed parallel to the front wall of the body.

LIGHT TOWER LIGHT HEAD ORIENTATION

The roof reinforcement shall be oriented in order for the light head on the light tower to be to the lift side while in the stored position.

LIGHT TOWER

A Shadow-RT, manufactured by Command Light, part number SL442-RT-LED, light tower shall be provided for installation on the apparatus. The location of the light tower and its controls shall be installed according to instructions given by the customer and the requirements of the light tower manufacturer.

The light tower shall extend 49.50” above the mounting surface and shall extend to full upright position in less than 15 seconds. The overall size of nested light tower shall be 48.00” long x 30.00” wide x 8.50” high and weigh approximately 75 pounds.

Light Tower Construction and Design

The Command Light assembly shall be of aluminum construction, with stainless-steel shafts and bronze bushings for long life and low maintenance.

The electrically controlled unit shall not require usage of the vehicle’s air supply for operation, thereby eliminating the chance for air leaks in the vehicle braking system. Hydraulic or pneumatic type floodlights are not acceptable alternatives to the specified all electric light tower.

The light tower shall be tested to in wind conditions of 90 mph (150 kph) minimum. Other type floodlights that have not been tested to these conditions are not acceptable.

Light Tower Electrical System

The light tower shall be a single-stage device with a lighting capable of 355-degree rotation. The light shall be elevated by an electric linear actuator, the actuator shall be adjusting the light bank angle from 0 to 110-degrees.

The tower base shall have a light that illuminates the envelope of motion during any movement of the light tower mast as required by NFPA 1901.

Light Tower Controls

The light tower shall be controlled with a hand-held 6-foot umbilical line remote control. The storage station for the remote-control unit shall be equipped with a button to activate the “Auto-Park” automatic nesting feature. The controls on the remote box shall be:

Two (2) switches for each 2 light banks.

One (1) switch for elevating / retracting the arm.

One (1) switch for rotation of the light bank.

One (1) switch to engage Auto-Park.

One (1) indicator light to indicate when light bank is out of the roof nest position.

One (1) indicator light to indicate when light bank is rotated to proper nest position.

Light Tower Floodlights

The Command Light shall be equipped with the following bank of floodlights:

Floodlight manufacturer:	Whelen Engineering
Number of lamp heads:	Four (4) Pioneer Plus LED
Voltage:	12 Volt
Watts of each lamp head:	150 Watt
Total watts of light tower:	600 Watts
Amperage per lamp head:	12.5 amps
Total amperage of light tower:	50 amps
Total Lumens of light tower:	45,000 lumens
Configuration:	The light heads shall be mounted in two (2) on each side of the light tower, giving two (2) vertical lines of two (2) when the lights are in the upright position.

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 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.

LIGHT BAR SWITCH

The lightbar shall be controlled through the master warning switch.

LOWER FRONT WARNING LIGHTS

One (1) pair of Whelen model 60R02FRR Super LED warning lights shall be installed, one (1) each side on the front of the chassis cab.

The lights shall be red in color with red lens.

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

INTERSECTION WARNING LIGHTS

One (1) pair of Whelen model 60R02FRR Super LED warning lights shall be installed, one (1) each side of the chassis cab.

The lights shall be red in color with red lens.

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

LOWER MID-BODY WARNING LIGHTS

One (1) pair of Whelen model 60R02FRR Super LED warning lights shall be installed, one (1) each side of the apparatus, mid-body.

The lights shall be red in color with red lens.

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

LOWER REAR WARNING LIGHTS

One (1) pair of Whelen model 60R02FRR Super LED warning lights shall be installed, one (1) each side on the lower rear of the apparatus body.

The lights shall be red in color with red lens.

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

LOWER WARNING LIGHT SWITCH

The lower warning lights shall be controlled through the master warning switch.

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 blue in color with a clear lens.

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

BEACON LIGHT SWITCH

The beacons shall be controlled through the master warning switch.

BEACON LIGHT MOUNTING

The rear beacons shall be mounted on the upper rear corners of the apparatus body, one (1) 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.

GENERATOR

There shall be a Honda EM6500SXX2 gas powered, 120/240 Volt generator installed on the apparatus. The generator shall have an intermittent rating of 6500 Watts and a continuous rating of 5500 Watts. The engine shall be a Honda overhead valve design, 4 stroke, single cylinder which shall be air cooled. The generator engine shall have an electric starter with a recoil backup. The generator engine shall be rated at 13 horsepower.

The generator shall come with its own fuel tank with a capacity of 6.6 US gallons. No fuel pump shall be required. The system shall be gravity fed, as designed by Honda; requiring no special maintenance or fuel pump replacements.

The generator engine shall have an electric starter that is connected to the chassis batteries. The generator electric starter shall have a quick disconnect battery plug installed.

The generator shall be located in the right-hand R4 compartment on a roll out tray.

ELECTRIC CORD REEL

One (1) Hannay model ECR1618-17-18, 3-conductor, 12-volt electric rewind cord reel shall be supplied and installed.

The reel shall be capable of holding 200 feet of 10/3.

The reel shall be located in the top of the L4 compartment.

A Hannay model #EH-678 captive type roller assembly shall be installed on the reel assembly. The roller shall be mounted to permit the cable to feed directly off the reel and away from the compartment.

ELECTRIC CORD REEL REWIND SWITCH

The cord reel shall be equipped with a weather resistant push button switch mounted in a safe and convenient position.

ELECTRICAL CORD

200 ft of 10/3 SOOW (black) cord shall be installed on the electric cord reel, complete with an HS-3 ball stop.

ELECTRICAL CORD TERMINATION

The cord reel wiring shall be wired directly into the junction box.

AKRON/GFE 125 VOLT OUTLET BOX

One (1) Akron electrical junction box shall be installed. The electrical junction box shall be a heavy duty, cast aluminum that has at least one quarter of an inch (0.25") thick walls and the four corner edges shall be at least one half of an inch (0.50") thick to withstand the roughest of handling. The carrying handle shall be large enough to fit fully gloved hand and be an integral part of the box casting. Each side of the electrical junction box shall be fitted with a quarter of inch (0.25") thick polypropylene faceplates. Faceplates shall be backlit so that plug orientation to the receptacle is quick and easy to align. Each receptacle shall be equipped with a spring-loaded snap cover that is marked in white lettering with that receptacle's voltage and ampere rating. All electrical receptacles plug, and snap type weatherproof covers shall be UL Listed components.

The unit shall be equipped with the following receptacles:

The outlet in Location #1 shall be:

Duplex 5-15 125 Volt 15-amp AC straight blade outlet with spring-loaded cover.

The outlet in Location #2 shall be:

Duplex 5-15 125 Volt 15-amp AC straight blade outlet with spring-loaded cover.

The outlet in Location #3 shall be:

Duplex 5-15 125 Volt 15-amp AC straight blade outlet with spring-loaded cover.

The outlet in Location #4 shall be:

Duplex 5-15 125 Volt 15-amp AC straight blade outlet with spring-loaded cover.

Color: The Junction box shall be gray.

PAINT, STRIPPING, AND LETTERING SECTION

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 ensure the entire unit is covered.

PPG436 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.

After the body has been sanded, it shall be washed again with PPG436 to remove any contaminants on the surface.

CHASSIS PAINT

The chassis shall be painted by the OEM Chassis Manufacturer.

PRIMING

All surfaces to be painted shall be primed with three (3) parts PPG F3993 Primer mixed with one (1) PPG F3996 Primer Harder, and a half (.5) part PPG Thinner F3320.

Two (2) applications of primer shall be applied. The first application shall be four (4) coats and the second application shall be three (3) coats.

A final application of sealer shall be applied using Primer Filler.

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.

COMPARTMENT INTERIORS

The side compartment interiors shall be unpainted and in their natural finish.

PAINT COLOR

The apparatus body paint shall be “cross referenced” from the chassis paint and shall be painted to match the main chassis color as close as possible.

WHEEL RIMS

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

REFLECTIVE STRIPPING

Reflective striping shall be applied to the perimeter of the truck. Size and design shall be determined by the Fire District.

CHEVRON STRIPING

At least 50% of the rear of the unit shall be covered with Red and Yellow alternating 6” stripe in an inverted Chevron pattern.

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.

NFPA Compliant reflective material shall be affixed to the inside of each hinged door.

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 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.

BARREL STRAINER & LOW FLOW STRAINER

One (1) 6.00” aluminum barrel strainer with NST threads and One (1) 6.00” aluminum low flow strainer shall be provided. The strainers shall be powder coated silver in color.

EXTENSION LADDER, 2 SECTION

One (1) 24-foot, two (2) section aluminum extension ladder shall be supplied with the finished apparatus.

ROOF LADDER

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

FOLDING ATTIC LADDER

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

HYDRAULIC HOSE REEL – ELECTRIC REWIND

Two (2) electric rewind hydraulic hose reel, shall be provided on the apparatus.

HOSE ROLLER ASSEMBLY ON REEL

A captive type roller assembly shall be installed on the reel assembly. The roller shall be mounted to permit the hose to feed directly off the reel and away from the compartment.

MOUNTING

The reel(s) shall be mounted in the top of compartment L4 next to the electrical cord reel.

There shall be one (1) hydraulic reel rewind switch installed and properly labeled for each reel. They shall be a weather resistant momentary push button switch and shall be located near the hydraulic reel(s).

HYDRAULIC HOSE – HALMATRO

Two (2) 100-foot Holmatro Hose CORE hoses, (1- Orange in color and 1 – Green in color) shall be provided on the apparatus.

Two (2) 6-foot Holmatro Hose CORE hoses, (1 – Orange in color and 1 – Green in color) shall be provided on the apparatus.

HOSE STOP

Two (2) ball stop shall be attached to the Holmatro Hydraulic Hose to prevent total re-wind and to allow the hose to remain at a reachable position. The ball(s) shall positively attach to the hose and be bright orange in color for high visibility.

FIRE HOSE – 1.75”

Sixteen (16) sections of 1.75” x 50 foot of Hose shall be provided on the apparatus. The following color hose will make up the sixteen (16) sections;

Four (4) hose sections in green

Four (4) hose sections in blue

Four (4) hose sections in red

Four (4) hose sections in yellow

FIRE HOSE – 2.50”

Sixteen (16) sections of 2.50” x 50 foot of Hose shall be provided on the apparatus. The following color hose will make up the sixteen (16) sections;

Eight (8) hose sections in orange

Eight (8) hose sections in tan

FIRE HOSE – 4.00”

Fifteen (10) sections of 4.00” x 100 foot of L.D.H. shall be provided on the apparatus.

Nozzles – 1.50”

Three (3) 1.50” Automatic nozzles with Pistol Grip shall be provided on the apparatus.

Nozzles – 2.50”

Two (2) 2.50” nozzles shall be provided on the apparatus.

Nozzles – 1.00” BOOSTER LINE

Two (2) 1.00” Booster Line nozzles shall be provided on the apparatus.

Nozzles – 1.50” FOAM

Two (2) 1.5” Foam nozzles shall be provided on the apparatus.

WHEEL CHOCKS

Two (2) wheel chocks, mounted in readily accessible locations, that meet or exceed the requirements of SAE J348, Standard for Wheel Chocks, for the wheel diameter on which the chocks are to be used.