

SOLICITATION 15-35001-001

PUTNAM COUNTY FIRE RESCUE
TOP MOUNT PUMPER



Putnam County Board of Commissioners
117 Putnam Drive, Suite A
Eatonton, GA 31024

AUGUST 21, 2015

9:00 A.M.

PUTNAM COUNTY BOARD OF COMMISSIONERS



117 Putnam Drive, Suite A ♦ Eatonton, GA 31024
Tel: 706-485-5826 ♦ Fax: 706-923-2345 ♦ www.putnamcountyga.us

PUTNAM COUNTY SOLICITATION # 15-35001-001 PUTNAM COUNTY FIRE RESCUE TOP MOUNT PUMPER

The Putnam County Board of Commissioners requests sealed proposals, good for 90 business days, for a **Top Mount Pumper Truck**.

Prospective bidders must obtain a bid package from the office of the Putnam County Board of Commissioners.

Proposals must be submitted on the proposal form issued by Putnam County and contained in the bid package.

Proposals must be received by **Friday, August 21, 2015 at 9:00 a.m.** The proposals will be read at that time.

LOCAL AND MINORITY OWNED/OPERATED AND/OR WOMEN OWNED/OPERATED BUSINESSES ARE ENCOURAGED TO SUBMIT PROPOSALS.

PUTNAM COUNTY RESERVES THE RIGHT TO REJECT ANY AND ALL BIDS, TO WAIVE ANY AND ALL TECHNICALITIES AND TO AWARD THE BID BASED ON THE LOWEST AND/OR BEST INTEREST OF PUTNAM COUNTY.

07/30/2015 & 08/06/2015

PUTNAM COUNTY BOARD OF COMMISSIONERS



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**INSTRUCTIONS AND SPECIFICATIONS FOR BIDDERS:
SOLICITATION # 15-35001-001
PUTNAM COUNTY FIRE RESCUE TOP MOUNT PUMPER
PUTNAM COUNTY, GEORGIA**

SECTION 1 – GENERAL NOTICE

Sealed proposals for a TOP MOUNT PUMPER TRUCK (SOLICITATION: 15-35001-001) will be received by the office of the Board of Commissioners of Putnam County, Georgia, up to the hour of 9:00 A.M. local time, on Friday, August 21, 2015, at which time and place they will be publicly opened and read aloud. Bidders are invited to be present.

SECTION 2 – BID DOCUMENTS

Copies of the Proposal, Specifications, Plans (if required) and other document forms may be obtained from the office of the County Commissioners. Bidders are required to examine the same and satisfy themselves that all requirements are fully understood.

SECTION 3 – BIDDING PROCEDURE

Bidder shall submit one complete set of the bid documents and all supporting material. All appropriate blanks shall be completed. Any interlineations, alteration, or erasure on the specification document shall be initialed by the signer of the bid. Bidder shall not change the proposal form nor make additional stipulations on the specification document. Any amplified or qualifying information shall be on the bidder's letterhead and firmly attached to the bid document.

Bid prices shall be submitted on the Proposal Form included in the bid document.

Each bid must be legibly printed in ink or by printer, include the full name, business address, and telephone number of the bidder and be signed in ink by the bidder.

A bid by a firm or organization other than a corporation must include the name and address of each member.

A bid by a corporation must be signed in the name of such corporation by a duly authorized official thereof.

No bidder shall submit more than one proposal nor submit two or more proposals under different names.

In order to be considered, the outside of the sealed envelope must be clearly marked with the offeror's name, address and phone number, the project number, name of the project for which the proposal is being submitted, and the bid opening date and time of Friday, August 21, 2015 at 9:00 a.m. All proposals shall be delivered by a delivery service or in person to Putnam County Board of Commissioners, 117 Putnam Drive, Suite A, ATTN: County Manager, Eatonton, GA 31024, on or before the time and date prescribed above.

Bids received after the time and date established for receiving bids will be rejected.

SECTION 4 – QUALIFICATION OF BIDDERS

All bidders shall provide a Work Resume and file it with their bid. The resume shall include projects which are similar to the type of work being bid for which the bidder had direct control over and was charged with full responsibility of the outcome.

SECTION 5 – ADDENDA

Addenda are written instruments issued by the County prior to the date for receipt of bids which modify or interpret the specification document by addition, deletion, clarification, or correction.

Addenda will be mailed or delivered to all who are known by the County to have received a complete set of specification documents.

Copies of addenda will be available for inspection at the office of the County Manager.

No addendum will be issued later than forty-eight (48) hours prior to the date and time for receipt of bids, except an addendum withdrawing the invitation to bid or an addendum which includes postponement of the bid.

Bidders shall ascertain prior to submitting their bid that they have received all addenda issued and they shall acknowledge receipt of addenda on the proposal form.

SECTION 6 – BIDDER'S REPRESENTATION

Each bidder by signing and submitting a bid, represents that the bidder has read and understands the specification documents and the bid has been made in accordance therewith.

Each bidder for services further represents that the bidder is familiar with the local conditions under which the work is to be done and has correlated the observations with the requirements of the bid documents.

NON-COLLUSION AFFIDAVIT: By submitting a proposal, the bidder represents and warrants that such bid is genuine and not a sham or collusion or made in the interest or in behalf of any person not therein named, and that the bidder has not directly or indirectly induced or solicited any other bidder to put in a sham bid, or any other firm, person or corporation to refrain from bidding and that the bidder has not in any manner sought by collusion to secure to that bidder any advantage over any other bidder.

INTEREST OF: By submitting a proposal, the bidder represents and warrants that neither a commissioner, administrator, manager, employee, nor any other person employed by PUTNAM COUNTY or in any other way connected with the county has, in any manner, an interest, either directly or indirectly, in the bid or in the contract which may be made under it, or in any expected profits to arise therefrom.

CERTIFICATE OF INDEPENDENT PRICE DETERMINATION: By signing and submitting this bid, the bidder certifies that the prices in this bid have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor; unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder prior to bid opening directly or indirectly to any other bidder or to any competitor; no attempt has been made, or will be made, by the bidder to induce any person or firm to submit, or not to submit, a bid for the purpose of restricting competition.

No bid or proposal for projects that require a licensed professional will be accepted from unlicensed persons. In addition, the licensed contractor must be the prime contractor on the project. It is not permissible for an unlicensed individual/firm to subcontract with a licensed contractor. The validity of all licenses will be checked.

SECTION 7 – BIDDER’S SECURITY

BID BOND: Furnished upon request.

PERFORMANCE BOND: Furnished upon request.

SECTION 8 – EQUAL OPPORTUNITY

Each bidder agrees that it shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, disability, national origin, age, or marital status. In the employment of persons, bidder shall take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to race, color, religion, sex, disability, national origin, age, or marital status.

SECTION 9 – CLARIFICATION OF SPECIFICATION DOCUMENTS

Bidders shall promptly notify the County Manager of any ambiguity, inconsistency, or error which they may discover upon examination of the specification documents.

Bidders desiring clarification or interpretation of the Specification documents shall make a written request which must reach the County Manager at least seven (7) calendar days prior to the date and time for receipt of bids.

Interpretations, corrections, and changes made to the Specification Documents will be made by written addenda. Oral interpretations or changes to the Specification Documents made in any other manner, will not be binding on the County; and bidders shall not rely upon such interpretations or changes.

SECTION 10 – SCHEDULE

The project shall be Substantially Complete within 120 calendar days from the date of issuance of Notice to Proceed. Liquidated damages of \$200.00 per day will be assessed if work is not completed within 120 calendar days from the date of the Notice to Proceed.

SECTION 11 – BID EVALUATION AND AWARD

The signed bid proposal shall be considered an offer on the part of the bidder. Such offer shall be deemed accepted upon issuance, by the County, of purchase orders, contract award notifications, or other contract documents appropriate to the work.

No bid shall be modified or withdrawn for a period of ninety (90) calendar days after the time and date established for receiving bids and each bidder so agrees in submitting the bid.

Award will be made to the vendor submitting the lowest responsive and responsible bid. The Putnam County Board of Commissioners reserves the right to reject any or all bids, to waive technicalities and to re-advertise or make an award as deemed in its best interest. The written bid documents supersede any verbal or written prior communication between the parties.

SECTION 12 – CONTRACT AND BOND

After the acceptance of the bid, the successful bidder must execute a written Contract between the bidder and the County; such contract will incorporate the County's contract documents and be on forms provided by the County.

SECTION 13 – INSURANCE

All bidders shall take special note of the attached insurance sheet titled "Insurance Clause for all County Contracts."

The successful bidder must provide proof of insurance in accordance with the contract documents.

SECTION 14 – INDEMNIFICATION

The bidder shall indemnify and hold harmless the County, its members, its officers, and employees from and against all claims, damages, losses, and expenses, including, but not limited to attorney's fees arising out of or resulting from the performance of the contract, provided that any such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property other than goods, materials, and equipment furnished under this contract, including the loss of use resulting therefrom; is caused in whole or part by any negligent act or omission of the bidder, any subcontractor, or anyone directly or indirectly employed by any one of them or anyone for whose acts made by any of them may be liable, regardless of whether or not it is caused by a party indemnified hereunder.

In any and all claims against the County or its members, officers or employees by an employee of the bidder, any subcontractor, anyone directly or indirectly employed by any of them or by anyone for whose acts made by any of them may be liable, the indemnification obligation listed above shall not be limited in anyway by any limitation of the amount or type of damages, compensation, or benefits payable by or for the bidder or any subcontractor under worker's or workmen's compensation acts, disability benefit acts, or other employee benefit acts.

SECTION 15 – LAWS

The Laws of the State of Georgia shall govern the rights, obligations, and remedies of the Parties under this proposal and any agreement reached as a result of this process.

SECTION 16 – INDEPENDENT CONTRACTOR

It is the express intent of the parties that this Contract shall not create an employer-employee relationship, and the Contractor, or any employee or other person acting on behalf of Contractor in the performance of this Contract, shall be deemed to be independent contractor(s) during the entire term of this Contract or any renewals thereof. Contractor shall be responsible for all compensation and benefits payable to Contractor's employee(s) under this Contract and Contractor's employees shall not be entitled to any compensation from County or to any benefits made to their employees, including, but not limited to, overtime, vacation, retirement benefits, workers' compensation, sick leave, or injury leave. Contractor shall also be responsible for maintaining workers' compensation insurance, unemployment insurance, and for payment of all federal, state, local and any other payroll taxes with respect to the employee's compensation.

SECTION 17 – CERTIFICATION

By signing and submitting a proposal, the bidder certifies that they have carefully examined the plans for this project and the applicable federal, state and local regulations and the special provisions included in and made a part of this proposal, and have also personally examined the site of the work. If awarded, the bidder further proposes to execute the contract agreement described in the specifications as soon as the work is awarded.

SECTION 18 - DRUG-FREE WORK PLACE CERTIFICATION

By signing and submitting a proposal, the bidder certifies that the provisions of Code Sections 50-24-1 through 50-24-6 of the Official Code of Georgia Annotated, relating to the "Drug-free Work Place Act", have been complied with in full. The bidder further certifies that:

(1) A drug-free work place will be provided for the contractor's employees during the performance of the contract; and

(2) Each contractor who hires a subcontractor to work in a drug-free work place shall secure from that subcontractor a written certification that a drug free work place will be provided for the subcontractor's employees during the performance of this contract pursuant to paragraph (7) of subsection (b) of Code Section 50-24-3.

Also, they further certify that they will not engage in the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana during the performance of the contract.

SECTION 19 – SECURITY AND IMMIGRATION COMPLIANCE

It is further certified that pursuant to O.C.G.A. §13-10-91 I and all contractors and sub-contractors performing work under this Agreement are in compliance with the Federal Work Authorization Program. Prime contractors and sub-contractors may participate in any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 ("IRCA"). **Contractor Affidavit, Subcontractor Affidavit (if applicable), and Sub-subcontractor Affidavit (if applicable) must be completed and turned in with your bid.**

It is further certified that pursuant to O.C.G.A. §50-36-1 I am a United States citizen, a legal permanent resident of the United States, or a qualified alien or non-immigrant under the Federal Immigration and Nationality Act with an alien number issued by the Department of Homeland Security or other federal immigration agency. **Affidavit must be completed and turned in with your bid.**

SECTION 20 – PAYMENTS

Contractor shall be paid by and in accordance with Putnam County payment regulations. Putnam County will strive to take advantage of all discounts offered for prompt payment, therefore, indicate all discounts on monthly invoices. Invoices shall not be submitted more frequently than once a month.

SECTION 21 – SPECIFICATIONS

Intent of Specifications

It is the intent of these specifications to clearly describe the furnishing and delivery to the Purchaser, a complete apparatus equipped as specified. The primary objective of these specifications is to obtain the most acceptable apparatus for service in the Fire Department. These specifications cover specific requirements as to the type of construction and tests the apparatus must conform, together with certain details as to finish, material preferences, equipment and appliances with which the successful bidder must conform.

The design of the apparatus must embody the latest approved automotive design practices. The workmanship must be of the highest quality in its respective field. Special consideration shall be given to service access to areas needing periodic maintenance, ease of operation, and symmetrical proportions. Construction must be heavy-duty and ample safety factors must be provided to carry loads as specified. The construction method employed will be in such a manner as to allow ready removal of any component for service or repair.

The apparatus shall conform to the National Fire Protection Association Standard for Automotive Fire Apparatus, number 1901, in its most recent edition, unless otherwise specified in this document. Only the specified firefighting support equipment listed in these specifications shall be provided.

The apparatus shall further conform to all Federal Motor Vehicle Safety Standards. No exception.

Each bidder shall furnish satisfactory evidence of their ability to design, engineer, and construct the apparatus specified and shall state the location of the factory producing the apparatus. They shall also substantiate they are in a position to render prompt and proper service and to furnish replacement parts for the apparatus.

Each bid must be accompanied by a set of detailed contractor's specifications consisting of a detailed description of the apparatus and equipment proposed. All bid proposal specifications must be in the same sequence as the advertised specification for ease of comparison. These specifications shall include size, location, type, and model of all component parts being furnished. Detailed information shall be provided on the materials used to construct all facets of the apparatus body. Any bidder who fails to submit detailed construction specifications, or who photo copies and submits these specifications as their own construction details will be considered non-responsive and shall render their proposal ineligible for award. No exception.

Bids will be addressed and submitted in accordance with the instructions provided on the cover sheet. The words "Putnam County Fire Rescue Top Mounted Pumper", the date, and bid opening time shall be stated on the front of the bid envelope.

It shall be the responsibility of the bidder to assure that their proposal arrives at the location and time indicated. Late proposals, telegrams, facsimile, or telephone bids will not be considered. No exception.

All bidders are required to detail the payment terms for apparatus on the bidder's proposal page. Any required prepayments or progress payments must be explained in detail.

ISO Compliance

The manufacturer shall operate a Quality Management System meeting the requirements of ISO 9001:2000.

The International Organization for Standardization (ISO) is a recognized world leader in establishing and maintaining stringent manufacturing standards and values. The manufacturer's certificate of compliance affirms that these principles form the basis for a quality system that unswervingly controls design, manufacture, installation, and service.

The manufacturer's quality systems shall consist of, but not be limited to, all written quality procedures (aka QOP) and other procedures referenced within the pages of the manufacturer's Quality Manual, as well as all Work Instructions, Workmanship Standards, and Calibration Administration that directly or indirectly impacts products or processes. In addition, all apparatus assembly processes shall be documented for traceability and reference. The manufacturer shall also engage the services of a certified third party for testing purposes where required.

If the manufacturer operates more than one manufacturing facility each facility must be ISO certified.

By virtue of its ISO compliance the manufacturer shall provide an apparatus that is built to exacting standards, meets the customer's expectations, and satisfies the customer's requirements.

A copy of the manufacturer's certificate of ISO compliance for each manufacturing facility shall be provided with the bid.

Service Requirements

It is the intent of the Purchaser to assure that parts and service are readily available for the equipment specified. Each bidder must thoroughly explain their service capabilities, including location of the closest factory authorized service center, mobile service capabilities and ability to promptly respond to the department when required. Service capabilities will be one of the criteria for award of this contract.

Final Inspection

A final inspection of the completed apparatus will be held at the factory of the successful bidder. All travel, hotel and meals for three (3) Department representatives will be provided by the successful bidder. If the factory is over 350 miles from Eatonton, Georgia, round trip commercial air fare will be supplied from Atlanta.

Delivery

Delivery must be stated in calendar days from the date of the purchase order. The completed unit shall be delivered to the fire department with full instructions provided to Fire Department personnel on operation, care and maintenance of the apparatus. (NO EXCEPTIONS)

NFPA Compliance

The supplied components of the apparatus shall be compliant with NFPA 1901, 2009 edition.

Commercial Chassis 2016 Model Year or Newer

The commercial chassis shall be an International Model 4400 two (2) door and shall be supplied with the following equipment:

GVW Rating

The gross vehicle weight rating shall be 36,000 lbs with an overall wheel base of 209".

Frame

The chassis frame rails shall be channel type, heat treated alloy steel (120,000 psi) 10.375" x 3705" x 0.438" steel. The frame shall have a 41" rear frame overhang.

Tow Hooks

There shall be two (2) front tow hooks, frame-mounted.

Front Axle

The front axle shall have a 12,000 lbs. capacity.

Front Suspension

The front suspension shall be taper leaf with a 12,000 lb capacity and front shock absorbers.

Front Tires

Front tires shall be 11R22.5 tubeless type 14 ply radial tires.

Rear Axle

The rear axle shall have a 24,000 lbs. capacity. Gear ratio 5.25.

Rear Suspension

The rear suspension shall be Vari-Rate; 31,000-lb Capacity, with 4500 lb Auxiliary Rubber Spring.

Rear Tires

Rear tires shall be on-off hwy 11R22.5 tubeless type 16 ply radial tires.

Brake System

The vehicle shall be equipped with a dual air brake system, front and rear to be S-Cam with ABS. Air dryer to have a heater.

Air Compressor

Air compressor to be a Bendix 13.2 cfm capacity.

Cooling System

The radiator shall be sized for current emissions requirements. The radiator shall include premium rubber radiator hoses. The cooling system shall be provided with anti-freeze protection to -40 degrees Fahrenheit. Auxiliary engine water cooler for fire truck application.

Exhaust System

The exhaust system shall be switchback horizontal aftertreatment device, frame mounted right side under cab for use with single long horizontal tail pipe. The tailpipe shall exit on the right side ahead of the rear wheel.

A switch shall be provided in the cab that shall allow the exhaust regeneration process to be overridden when applicable.

Fuel Tank

A fifty (50) gallon 24" diameter non-polished fuel tank shall be mounted left side under cab.

Transmission

An Allison EVS3000 automatic 5 speed transmission shall be provided. The push-button electronic shift control shall be located within easy reach of the driver and shall be indirectly lit for after-dark operation. A label shall be provided within easy view of the driver to indicate the chassis transmission shift selector position to be used for pumping.

A transmission water-to-oil cooler shall be provided in the radiator end tank.

A transmission fluid check and fill with electronic oil level check.

A frame-mounted water-to-oil transmission cooler.

A five (5) year/unlimited miles parts and labor warranty shall be provided as standard by Allison Transmission.

International Engine

The chassis shall be equipped with an International N9 engine.EPA 10, SCR, 330 HP.

The engine shall be 330HP @ 2000 RPM (2200 RPM Governed) with 950 lb/ft @ 1200 RPM.

Exhaust Brake

International engine shall include an exhaust brake.

Speed

Speed shall be limited to NFPA 60 mph.

Battery System

A single start battery system shall be provided consisting of three (3) maintenance-free, 12 volt, 1950 CCA batteries, battery box with aluminum cover, mounted driver's side, under the cab.

Alternator

The alternator shall be a 12 volt 320 amp alternator pad mounted.

Air Conditioning

International air conditioning with integral heater.

Ember Separator

An ember separator shall be provided for the engine air intake in accordance with NFPA.

Fire Apparatus/Rescue Prep

The following items shall be installed on the commercial chassis in preparation for fire apparatus/rescue application:

- Exhaust Extension - The chassis exhaust pipe shall be extended to the front of the right rear wheels.
- Fast Idle System - A fast idle system shall be provided and controlled by a cab or pump panel mounted switch. The system shall increase engine idle speed to a preset RPM for increased alternator output.
- Master Light Switch - The master light switch shall consist of one (1) illuminated rocker switch wired through a solenoid to accessory switches to allow pre-selected switches to be turned on or off at one time.
- Battery Master Disconnect - A heavy duty on/off single battery master disconnect switch shall be mounted in the cab within easy reach of the driver.
- Auxiliary Engine Cooler - As required for pumping applications, an engine cooler shall be installed. The engine cooler shall be required to lower engine water temperature during prolonged pumping operations and shall be controlled at the pump operator's position.

Front Bumper

The vehicle shall be equipped with a one-piece 10" high bumper, made from 10 gauge (0.135" nominal) polished stainless steel for corrosion resistance, strength, and long-lasting appearance. It shall be mounted directly to the front frame extensions for maximum strength. The bumper shall incorporate two (2) stiffening ribs.

Front Bumper Extension

The bumper shall be extended approximately 20" from the face of the cab as required.

Bumper Gravel Shield & Top Discharge

The extended front bumper gravel shield shall be made of 1/8" (.125") aluminum treadplate material. The 1.5" discharge shall be located on the officer's side on top.

Lid, Bumper Hose Tray

The center bumper tray shall have a diamond plate lid. The lid shall be hinged and shall be secured in the closed position by a latch and held open with a pneumatic shock.

Bumper Tray - Center

A hose tray constructed of 1/8" aluminum shall be recessed into the front bumper extension. The tray shall be located in the center of the bumper and be approximately 16" deep (15" to the top of the slats). One inch thick aluminum slats shall be included in the bottom of the hose tray to aid in the dissipation of water from the tray.

Rims - Aluminum

The chassis rims shall be Accuride 22.5" x 8.25" 10 hub piloted polished aluminum with complete trim kits, front covers, rear top hats and chrome lug nut covers.

Tire Pressure Indicators

The apparatus shall be provided with Real Wheels AirGuard LED tire pressure indicating valve stem caps. When the tire is under inflated by 5-10 PSI, the LED indicator on the cap shall flash red. The indicator housings shall be shock resistant and constructed from polished stainless steel. The indicators shall be calibrated by attaching to valve stem of a tire at proper air pressure per load ratings and easily re-calibrated by simply removing and re-installing them during service.

Air Inlet

A 1/4" male plug air hose inlet shall be connected to the air reservoir tank. A 1/4" inline check valve will be installed in the line. Air hose connection will provide the capability of filling the air brake system with air from an outside source. Location: driver's door step area.

Air Horns International

Dual Hadley Hood Mounted Air Horns with driver's steering wheel to have air horn control and D.O.T. horn controls. A selector switch shall be supplied.

Mirrors

Cab mirrors shall be Lang Mekra bright finish heads and brackets, heated and remote controlled.

Rear Tow Eyes

Two (2) heavy duty tow eyes made of 3/4" (0.75") thick steel having 2-1/2" diameter holes shall be mounted below the body at the rear of the vehicle to allow towing (not lifting) of the apparatus without damage. The tow eyes will be welded to the lower end of a 5" steel channel that is bolted at the end of the chassis frame rails. The tow eyes shall be painted chassis black.

Chassis Trim Package

A diamond plate trim package shall be provided for an International two (2) door cab.

All stepping surfaces on the trim package shall be in accordance with NFPA by including a multi-directional aggressive gripping surface incorporated into the aluminum diamond plate. This surface shall extend vertically from the diamond plate a minimum of a 1/8" (0.125") and shall be 1" in diameter in design with a maximum of 4" on center. **(NO EXCEPTIONS)**

The driver and officer side trim shall include an upper and lower full width step. The trim package shall include fuel, DEF and battery access and a mounting surface for the battery charger receptacle and air inlet (as applicable).

Logo Package

The apparatus shall have manufacturer logos provided on the cab and body as applicable.

Cab Door Reflective Material

Reflective Red/Lemon Yellow material striping shall be supplied on each of the cab doors. The stripes shall be angled from the lower outer corner to the upper inside corner, forming an "A" shape when viewed from the rear. The reflective material shall be at least 96 square inches to meet NFPA 1901 requirements.

Label ``Diesel Fuel Only``

Located above each fuel filler housing shall be a metallic label that designates "Diesel Fuel Only" requirements. It shall be black with white or equivalent contrasting letters a minimum of 1/2" high.

Diesel Exhaust Fluid

The International chassis shall include a five (5) gallon diesel exhaust fluid tank located on the left side under the cab.

Rear Cab Overlay

The exterior rear of the cab shall have a diamond plate overlay. The overlay shall be provided to protect the rear painted surface of the cab when personnel are in or on the top mount walkway area.

Cab Seating

There shall be seating provided in the cab for two (2) people.

The seating shall be one (1) National Brand air suspension for the driver and one (1) National Brand air suspension for the officer.

Each seat shall have a Type-2 pelvic and upper torso restraint-style seat belt made of a high visibility red material in accordance with NFPA.

Seating Capacity Tag

A tag that is in view of the driver stating seating capacity of two (2) personnel shall be provided.

Cab Console

The console shall be centrally located and shall allow the driver and/or officer access to all components while seated with seat belts secured.

The console shall be constructed of aluminum smooth plate with a sanded finish. The top surface shall have a non-reflective material for increased visibility of labels and controls.

All switches located on the console shall be clearly labeled and shall be back-lit for easy operation and visibility.

Battery Charger Receptacle

A 20 amp battery charger receptacle shall be installed in the specified location.

The receptacle shall be located driver's door step area.

The cover color shall be Yellow.

Battery Charger

An LPC 20 battery charger with remote mounted LED display shall be installed.

A fully automatic charging system shall be installed on the apparatus. The system shall have a 120 volt, 60 hertz, 7 amp AC input with an output of 20 amps 12 volts DC. The battery charging system shall be connected directly to the shoreline to ensure the batteries remain fully charged while the vehicle is in the fire station or firehouse.

The system shall include a remote charging status indicator panel. The panel shall consist of two (2) LED lights to provide a visual signal if battery voltage is good or drops below 11.5 volts. The microprocessor shall be continuously powered from the battery to provide the charge status.

Driver Side Assembly

The driver side assembly shall be constructed entirely of aluminum extrusions and interlocking aluminum plates. This aluminum modular design shall provide a high strength-to-weight ratio for increased equipment carrying capacity.

The driver side body corners shall be 6063-T5 extruded aluminum corner sections with a 3/16" (0.188") wall thickness. The side body extrusions shall be 6063-T5 aluminum tubing with a 3/16" (0.188") wall thickness and 3/16" (0.188") outside corner radius. The corners and sides shall be welded both internally and externally at each joint using an aluminum alloy welding wire.

The driver side body shall be completely sanded and deburred to assure a smooth finish and painted job color.

Driver Side Compartments

The three (3) driver side compartments shall be constructed from 3003 H14 1/8" (.125") smooth aluminum plate. The compartments shall be modular in design and shall not be a part of the body support structure.

There shall be one (1) compartment located ahead of the rear wheels. This compartment shall be approximately 36" wide x 68" high x 26" deep in the lower 30" high section and 12" deep in the upper 38" high section. The compartment shall contain approximately 25.7 cu. ft. of combined storage space. The door opening shall be approximately 36" wide x 68" high.

There shall be one (1) compartment located over the rear wheel. The compartment shall be approximately 56" wide x 34" high x 12" deep and contain approximately 13.2 cu. ft. of storage space. The door opening shall be approximately 56" wide x 34" high.

There shall be one (1) compartment located behind the rear wheel. The compartment shall be approximately 50" wide x 68" high. The forward area of the compartment shall be 36" wide x 30" high x 26" deep in the lower area and 36" wide x 38" high x 12" deep in the upper area. The enhanced extended rear portion of the compartment shall be approximately 14" wide x 68" high x 25" deep in the lower 30" high section and 10" deep in the upper 38" high section. The total combined storage space shall be approximately 34.8 cu. ft. The lower forward area of this compartment shall be transverse through to the rear compartment(s). The door opening shall be approximately 50" wide x 68" high.

Each compartment seam shall be sealed using a permanent pliable silicone caulk. The walls of each compartment shall be machine-louvered for adequate ventilation.

An externally-mounted compartment top shall be provided and constructed of a 1/8" (.125") aluminum treadplate.

Officer Side Assembly

The officer side assembly shall be constructed entirely of aluminum extrusions and interlocking aluminum plates. This aluminum modular design shall provide a high strength-to-weight ratio for increased equipment carrying capacity.

The officer side body corners shall be 6063-T5 extruded aluminum corner sections with a 3/16" (0.188") wall thickness. The side body extrusions shall be 6063-T5 aluminum tubing with a 3/16" (0.188") wall thickness and 3/16" (0.188") outside corner radius. The corners and sides shall be welded both internally and externally at each joint using an aluminum alloy welding wire.

The officer side body shall be completely sanded and deburred to assure a smooth finish and painted job color.

Officer Side Compartments

The two (2) officer side compartments shall be constructed from 3003 H14 1/8" (.125") smooth aluminum plate. The compartments shall be modular in design and shall not be a part of the body support structure.

There shall be one (1) compartment located ahead of the rear wheels. This compartment shall be approximately 36" wide x 30" high x 26" deep. The compartment shall contain approximately 16.2 cu. ft. of combined storage space. The door opening shall be approximately 36" wide x 30" high.

There shall be one (1) compartment located behind the rear wheel. The compartment shall be approximately 50" wide x 30" high. The forward area of the compartment shall be 36" wide x 30" high x 26" deep. The enhanced extended rear portion of the compartment shall be approximately 14" wide x 30" high x 25" deep. The total combined storage space shall be approximately 22.2 cu. ft. The forward area of this compartment shall be transverse through to the rear compartment(s). The door opening shall be approximately 50" wide x 30" high.

Each compartment seam shall be sealed using a permanent pliable silicone caulk. The walls of each compartment shall be machine-louvered for adequate ventilation.

An externally-mounted compartment top shall be provided and constructed of a 1/8" (.125") aluminum treadplate. The compartment top shall be removable for easy access to the main body wiring harness.

Ladder Storage

Ladder storage shall be provided over the officer side compartment top.

There shall be two (2) aluminum adjustable ladder tracks vertically-mounted to the hosebed side.

There shall be two (2) cast ladder brackets provided with spring-loaded hold-down handles mounted in the adjustable ladder tracks. Brackets shall be provided to protect the painted body side surface.

Rear Body Assembly

The rear body shall be constructed entirely of aluminum extrusions and interlocking aluminum plates and includes a full height center rear compartment.

The rear body frame shall be 6063-T5 1.5" x 4" and 1.5" x 3" aluminum extrusions with a 3/16" (0.188") wall thickness and 3/16" (0.188") outside corner radius and 1/8" (0.125") smooth plate. The rear extrusions shall be welded both internally and externally at each joint using an aluminum alloy welding wire.

Rear Body Compartment

The full height center rear compartment shall be constructed from 3003 H14 1/8" (.125") smooth aluminum plate. The compartment shall be modular in design and shall not be a part of the body support structure.

The compartment shall be approximately 38" wide and shall vary in height and depth dependent upon water tank capacity. The lower area of this compartment shall be transverse through to the side rear compartments.

The compartment seams shall be sealed using a permanent pliable silicone caulk. Machined louvers shall be provided for adequate ventilation.

Tailboard Step

A tailboard step shall be provided at the rear of the body. The tailboard shall be approx. 15.5" in depth and in accordance with NFPA in both step height and stepping surface. The maximum rear step height to the tailboard shall not exceed 24".

The tailboard step shall be formed from 3/16" (0.188") aluminum treadplate and shall be reinforced with 6063-T5 1.5" x 3" aluminum extrusion. The tailboard shall be in accordance with current NFPA requirements and shall include a multi-directional aggressive gripping surface incorporated into the diamond plate. The surface shall extend vertically from the diamond plate sheet a minimum of 1/8" (0.125"). Gripping surfaces shall be circular in design, a minimum of 1" diameter and on centers not to exceed 4".

The tailboard step shall be bolted on to the body from the underside assuring a clear surface and shall be easily removable for replacement in the case of damage.

Enhanced Extended Compartment Framework

Each side of the tailboard shall be the external compartment frame work of the enhanced extended side compartments. The compartment frame work shall be 6063-T5 1.5"x 4" and 1.5" x 3" aluminum extrusions with a 3/16"(0.188") wall thickness and 3/16" (0.188") outside corner radius. The rear extrusions shall be welded both internally and externally at each joint using an aluminum alloy welding wire.

The compartment frame work shall include two (2) compartment tops. The compartment tops shall be constructed of 3/16" (0.188") aluminum diamond plate. Each compartment top shall include a multi-directional aggressive gripping surface incorporated into the diamond plate. The surface shall extend vertically from the diamond plate sheet a minimum of 1/8" (0.125"). Gripping surfaces shall be circular in design, a minimum of 1" diameter and on centers not to exceed 4". The compartment tops shall be bolted on and shall be easily removable for replacement in the case of damage.

Hosebed Access Steps

Heavy-duty folding step shall be provided for access to the officer side enhanced extended compartment top. The step shall be in accordance with NFPA in both step height and stepping surface. The step shall be located one (1) low on the officer side.

Rear Access Handrails

Handrails shall be provided at the rear of the body to assist ground personnel accessing the tailboard step and hosebed area. Each handrail shall be constructed of 6063T5 1.25" OD anodized aluminum tube, with an integral ribbed surface to assure a good grip for personnel safety, and shall be mounted between chrome stanchions.

One (1) handrail shall be provided (as applicable) on the driver side upper hosebed side. This handrail shall be for use with the driver side hosebed access steps.

Handrails shall be located- two (2) handrails, one (1) on each side, appropriately sized handrail mounted vertical on the trailing edge of the body and appropriately sized handrail(s) mounted horizontal below the rear hosebed opening.

Roll Up Compartment Doors (6)

A ROM brand roll up door with satin finish shall be provided on all compartments. The doors shall be installed on all six (6) compartment openings.

The Robinson door slats shall be double wall box frame and manufactured from anodized aluminum. The slats shall have interlocking end shoes on each slat. The slats shall have interlocking joints with a PVC/vinyl inner seal to prevent any metal to metal contact and inhibit moisture and dust penetration.

The track shall be anodized aluminum with a finishing flange incorporated to provide a finished look around the perimeter of the door without additional trim or caulking. The track shall have a replaceable side seal to prevent water and dust from entering the compartment.

The doors shall be counterbalanced for ease in operation. A full width latch bar shall be operable with one hand, even with heavy gloves. Securing method shall be a positive latch device.

A magnetic type switch integral to the door shall be supplied for door ajar indication and compartment light activation.

The door opening shall be reduced by 2" in width and approximately 8-9" in height depending on door height.

Permanent Shelves (2)

There shall be a permanent mounted aluminum shelf provided for compartment L1 at offset (above extrusion if applicable), L3 at offset (above extrusion if applicable). The shelf shall be at the offset within the compartment.

The shelf shall be constructed of 3/16" (.187") smooth aluminum plate. The shelf shall have a minimum 2" front lip for added strength and reinforcement and to accommodate optional plastic interlocking compartment tile systems.

The shelf shall be capable of holding 100 lbs.

Adjustable Shelf (1)

There shall be an aluminum adjustable shelf provided for compartment R2.

The shelf shall be constructed of 3/16" (.187") smooth aluminum plate. The shelf shall have a minimum 2" front and rear lips to accommodate optional plastic interlocking compartment tile systems. For additional strength and reinforcement of the shelf a return break shall be provided on the outward lip. The adjustable shelf shall be capable of holding 250 lbs.

The shelf shall be sized, width and depth, to match the size and location in the compartment.

Adjustable Tracks (1)

Tracks shall be provided in R2 for use with adjustable shelves and/or trays in deep non-transverse compartments. The tracks shall be vertically mounted and attached to the side and/or rear walls of the compartments.

Fixed Shelf (1)

Fixed shelf with 1" front lip. For non-transverse compartments that are 16" or greater in depth. Location: B1 mounted 9" below roll-up door drum, angles to be only as large as needed.

Roll-Out Trays (3)

There shall be a floor mounted roll-out tray provided in compartment L1, L3, B1.

The roll-out tray shall be constructed of 3/16" (.187") smooth aluminum plate with a sanded finish and welded corners for increased strength and rigidity. The tray shall be sized in width and depth as applicable.

For greater tray accessibility, the drawer slides shall feature one hundred percent extension. The tray shall utilize a gas spring to secure the tray in the open or closed position.

The tray shall have a total capacity of 500 lbs.

Hose Bed Cover

A cover constructed of Red 18 oz. PVC vinyl coated polyester shall be installed over the apparatus hose bed. The base fabric shall be 1000 x 1300 Denier Polyester with a fabric count of 20 x 20 square inch.

The front edge of the cover shall be mechanically attached to the body. The sides of the cover shall be held in place with heavy duty Velcro strips running the length of the hose bed. The rear of the cover shall have an integral flap that extends down to cover the rear of the hose bed. This flap shall be secured in place with heavy duty nylon straps to comply with the latest edition of NFPA 1901.

Vinyl Crosslay Cover

A cover constructed of Red 18 oz. PVC vinyl coated polyester shall be installed on the crosslay. The base fabric shall be 1000 x 1300 Denier Polyester with a fabric count of 20 x 20 per square inch.

The cover shall be held in place across the top of the body by chrome snaps. The sides of the cover shall have integral flaps that extend down to cover the sides of the crosslay. The side flaps shall be secured in place to comply with the latest edition of NFPA 1901.

Pump Module

Pump Module Width

Pump module shall be 76" wide.

Pump Module Frame

An extruded aluminum pump module shall be provided and located forward of the apparatus body. The pump module shall be constructed entirely of welded aluminum alloy extrusions and interlocking aluminum plates. The pump module framework shall consist of 1.5" x 3" x .188" wall, 1.5" x 3" x .375" wall with center web and 3" x 3" x .188" wall extrusions.

The pump module design and mounting shall be separate from the body to allow the pump module and body to move independently of each other in order to reduce stress from frame twisting and vibration.

The exterior surface of the pump module framework shall have a sanded finish.

Pump Module Mounting

The pump module shall be attached to the chassis using four (4) center bonded isolation mounts and a steel mounting frame. The isolation mounts shall be 2.75" diameter and mount to the chassis with two (2) 4" x 4" x .312" A36 steel angles.

Pump Access

A pump service access door shall be provided at the front of the pump module. The door shall be secured with two (2) thumb latches.

Top Mounted Pump Control Area

The upper area of the module shall be configured for a top mount pump operator's panel. The upper side walls of the module shall be tapered for improved operator visibility.

Crosswalk

An extruded aluminum crosswalk shall be provided at the front of the pump module. The crosswalk shall be integral to the pump module and be constructed entirely of aluminum extrusions. The crosswalk walkway shall be in accordance with NFPA in both step height and stepping surface. The crosswalk walkway floor shall be formed from .188" aluminum treadplate. The walkway floor shall be bolted on to the module and be easily removable to service chassis components or for replacement in the case of damage.

The crosswalk entry shall include two (2) 5" wide formed diamond plate steps located one (1) on each side offset forward and two (2) handrails, a minimum 24" long, located one (1) on each side mounted vertically on the forward extrusion of the pump module.

Pump Module Running Boards

The pump module shall include a running board on each side. The running boards shall be in accordance with NFPA in both step height and stepping surface. The running boards shall be formed from .125" aluminum treadplate. Each running board shall be bolted on to the pump module and be easily removable for replacement in the case of damage.

Stepping Surfaces

The top mount crosswalk and each running board shall include a multi-directional, aggressive gripping surface incorporated into the treadplate. The surface shall extend vertically from the diamond plate sheet a minimum of .125". Gripping surfaces shall be circular in design, a minimum of 1" diameter and on centers not to exceed 4".

Pump Panel Opening

The panel opening on the pump module shall be 39" wide.

Pump Module Height

The pump module height shall be 75".

Top Mount Pump Panels

The top mount gauge panel, driver and officer side pump panels shall be constructed of 14 gauge stainless steel.

The top mount gauge panel shall be able to lift forward for access to panel mounted electrical connections.

The driver and officer panels shall have the ability to be removed from the module for easier access and for maintenance in the pump area.

Pump Access Doors

The driver and officer side pump module shall have a hinged pump panel with a lower fixed panel for bleeder valves.

The upper panels shall have vertical stainless steel piano type hinges with 1/4" pins along the forward edge of the pump module. The hinges shall be "staked" on every other knuckle to prevent the pins from sliding. The panels shall have push button style latches to secure the panels in the closed position. The hinged panels shall have one (1) pneumatic shock each to hold the panels in the open position.

Pump Panel Tags

Color coded pump panel labels shall be supplied to be in accordance with NFPA 1901 compliance.

Flex Joint

The area between the pump modules and body shall include a rubber flex joint.

Module Logos

Logos with the OEM brand name can be provided and may be mounted one (1) each side on pump module/pre-connect panels. Logos shall be sized as applicable to available space on panel(s).

Air Horn Switch

A heavy duty weatherproof push-button switch shall be installed at the pump operator's panel to operate the air horns.

The switch shall be labeled "Evacuation Alert".

Location: top mount control panel.

Double Crosslay Hosebed

Two (2) crosslay hosebeds shall be provided on the pump module. The crosslays shall have increased depth to lower the hosebed and increase the carrying capacity. Each of the two (2) crosslay areas shall have a capacity of up to 400` of 2.0" double-jacket fire hose double stacked. The crosslay floor and side walls shall be constructed of 3/16" (.188) smooth aluminum plate. The floor shall be slotted to prevent the accumulation of water and allow for ventilation of wet hose. One (1) 1/4" (.25") smooth aluminum plate fixed divider with a sanded finish shall be provided to separate the two (2) hose storage areas.

Top Mount Walkway Compartments (2)

The area directly below the top mount pump panel walkway shall include two (2) compartments, located one (1) each side. Each compartment shall provide approximately 1.5 cu. ft. of storage space (2.5 cu. ft. if equipped with speedlays). The compartments shall include spring loaded, vertically-hinged 1/8" (.188") aluminum treadplate door with a push-button latch. A switch wired to the door ajar indicator light in the cab shall be provided. One (1) LED light shall be installed in each compartment.

1250 Gallon Water Tank PLUS 30 Gallon Foam Tank (1280 TOTAL LIQUID)

A 1250 gallon (US) booster tank shall be supplied.

The booster tank shall be constructed of polypropylene material. The booster tank shall be completely removable without disturbing or dismounting the apparatus body structure. The top of the booster tank is fitted with removable lifting assembly designed to facilitate tank removal.

The booster tank top, sides, and bottom shall be constructed of a minimum 1/2" (0.50") thick black UV-stabilized copolymer polypropylene. Joints and seams shall be fused using nitrogen gas as required and tested for maximum strength and integrity. The tank construction shall include technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method will provide a liquid barrier offering leak protection in the event of a weld compromise. The tank cover shall be constructed of 1/2" thick polypropylene and UV stabilized, to incorporate a multi-piece locking design, which allows for individual removal and inspection if necessary. The tank cover(s) shall be flush or recessed 3/8" from the top of the tank and shall be fused to the tank walls and longitudinal partitions for maximum integrity. Each one of the covers shall have hold downs consisting of 2" minimum polypropylene dowels spaced a maximum of 40" apart. These dowels shall extend through the covers and will assist in keeping the covers rigid under fast filling conditions.

The tank shall have a combination vent and manual fill tower with a hinged lid. The fill tower shall be constructed of 1/2" polypropylene and shall be a typical dimension of 8" x 8" outer perimeter (subject to change for specific design applications). The fill tower shall be blue in color indicating that it is a water-only fill tower. The tower shall have a 1/4" thick removable polypropylene screen and a polypropylene hinged cover. The capacity of the tank shall be engraved on the top of the fill tower lid.

The booster tank shall have two (2) tank plumbing openings. One (1) for a tank-to-pump suction line with an anti-swirl plate, and one (1) for a tank fill line. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates per the tank fill inlet size.

The sump shall be constructed of a minimum of 1/2" polypropylene. The sump shall have a minimum 3" N.P.T. threaded outlet 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" above the inside floor.

The transverse and longitudinal swash partitions shall be manufactured of a minimum of 3/8" polypropylene. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow. All swash partitions interlock with one another and are completely fused to each other as well as to the walls of the tank. All partitions and spacing shall comply with NFPA 1901. The walls shall be welded to the floor of the tank providing maximum strength.

Inside the fill tower there shall be a combination vent/overflow pipe. The vent overflow shall be a minimum of schedule 40 polypropylene pipe with an I.D. of 3" or larger that is designed to run through the tank. This outlet shall direct the draining of overflow water past the rear axle, thus reducing the possibility of freeze-up of these components in cold environments. This drain configuration shall also assure that rear axle tire traction shall not be affected when moving forward.

The booster tank shall undergo extensive testing prior to installation in the truck. All water tanks shall be tested and certified as to capacity on a calibrated and certified tilting scale.

Each tank shall be weighed empty and full to provide precise fluid capacity. Each tank shall be delivered with a Certificate of Capacity delineating the weight empty and full and the resultant capacity based on weight. Engineering estimates for capacity calculations shall not be permitted for capacity certification. The tank must be designed and fabricated by a tank manufacturer that is ISO 9001:2008 certified in each of its locations. The ISO certification must be to the current standard in effect at the time of the design and fabrication of the tank.

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

The tank shall have a limited Lifetime warranty that provides warranty service for the life of the fire apparatus in which the tank is installed. Warranties are transferable if the apparatus ownership changes by requesting the transfer from the tank manufacturer.

Tank capacity is 1280 US gallons / 1065 Imperial gallons / 4845 Liters.

Fill Tower Location (2)

Two (2) fill towers shall be located offset to officer side of water tank.

Tank Fill 2 Akron Valve

One (1) 2" pump-to-tank fill line having a 2" manually operated full flow valve. The valve control shall be located at the pump operator's panel and shall visually indicate the position of the valve at all times. The fill line shall be controlled using a chrome handle with an integral tag.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.

The valve shall be of unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

Tank To Pump

One (1) manually operated 3" Akron valve shall be installed between the pump suction and the booster tank. Includes flex hose with stainless steel hose clamps for connection to the 4" tank sump outlet. The valve control shall be located at the pump operator's panel and shall visually indicate the position of the valve at all times.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position and water is flowing through it.

The valve shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

A check valve shall be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank. The valve control shall be located at the pump operator's panel and shall visually indicate the position of the valve at all times.

Rear Tank Inlet, 2.5

One (1) 2.5" (63.5 mm) water tank fill connection shall be provided and mounted in the specified location. The connection shall include an inlet strainer, 2.5" (63.5 mm) FNST chrome inlet swivel and a chrome plug with cable. A 2.5" check valve shall be installed to prevent back flow of water while disconnecting the hose. A 2.5" (63.5 mm) stainless steel pipe and/or high pressure flexible hose will connect to the water tank.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

Location: officer rear.

30 Gallon Foam Tank

A 30 gallon (U.S.) foam cell for Class A foam shall be supplied. The foam cell shall be integral to the water tank.

The integral tank top, sides, and bottom shall be constructed of black polypropylene material. Joints and seams shall be fused using nitrogen gas as required and tested for maximum strength and integrity. The tank construction shall include technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method will provide a liquid barrier offering leak protection in the event of a weld compromise. The copolymer polypropylene material shall be used for its high strength and corrosion resistance for a prolonged tank life.

The foam tank shall have a manual fill tower. The fill tower shall be constructed of 1/2" polypropylene and shall be a typical dimension of 8" x 8" outer perimeter (subject to change for specific design applications). Foam fill tower shall be constructed of a Green colored material indicating type of foam utilized. The capacity of the tank shall be engraved on the top of the fill tower lid. The fill tower shall be located in the forward area of the tank. The tower shall have a 1/4" thick removable polypropylene screen. Inside the fill tower, approximately 1.5" down from the top, there shall be an anti-foam fill tube that extends down to the bottom of the tank. A pressure vacuum vent shall be provided in the lid of the fill tower. The foam fill tower shall be removable to facilitate the cleaning of the foam tank.

The foam tank shall undergo extensive testing prior to installation in the truck. All foam tanks shall be tested and certified as to capacity. The tank must be designed and fabricated by a tank manufacturer that is ISO 9001:2008 certified in each of its locations. The ISO certification must be to the current standard in effect at the time of the design and fabrication of the tank.

The tank shall have a limited Lifetime warranty that provides warranty service for the life of the fire apparatus in which the tank is installed. Warranties are transferable if the apparatus ownership changes by requesting the transfer from the tank manufacturer.

Hard Suction Hose Rack

One (1) hard suction hose storage rack shall be provided on the driver side compartment top.

The storage rack shall be constructed of anodized extruded aluminum and includes two (2) spring-mounted latch handles with stainless steel scuff plates. The scuff plates shall be located on the hose bed side to protect the painted surface.

The storage rack shall be capable of storing one (1) 6" x 10' hard suction hose.

Hard Suction Hose Rack

One (1) hard suction hose storage rack shall be provided above the officer side adjustable ladder tracks.

The storage rack shall be constructed of anodized extruded aluminum and includes two (2) spring-mounted latch handles.

The storage rack shall be capable of storing one (1) 6" x 10' hard suction hose.

Ladder Storage

Attic Ladder Storage Brackets

Two (2) brackets shall be provided that shall be capable for the storage of one (1) attic ladder. The brackets shall be constructed of high tensile strength aluminum alloy and shall be located officer side compartment top.

Ladder Brand

The ladder brand capable of being carried on the unit shall be Alco-Lite.

Pike Pole Storage

Two (2) aluminum tubes shall be mounted for storing two (2) pike poles.

Location: officer side compartment top.

Pike Pole

The pike pole(s) capable of being stored shall be the following length: (2) 10' pike poles.

Ladders

The length of ladders capable of being stored shall be the following: 24' 2-section and 14' roof ladder.

Storage Tube Retaining Pins (2)

The storage tubes shall have a secondary retaining pin with cable. This retaining pin shall provide additional securing of the tube contents while the apparatus is in transit and on scene.

Hose Bed Folding Steps (2)

Dual lighted LED folding steps, two (2) shall be positioned to the driver side rear of the body. The steps shall be NFPA compliant for access to the hose bed storage area and in step height and surface area. The steps shall be staggered stepped as applicable with tailboard depth, not applicable with recessed step mounting.

Dual lighted LED folding step with LED lights integral to the step on the top to provide NFPA requirements of 2 FC on the stepping surface. Each step shall also have a LED light integral to the bottom of the step to meet NFPA requirements of a stepping surface up to 18" below the step.

The folding step shall sustain a minimum static load of 500 lbs. The folding step shall also meet NFPA slip resistance qualifications.

One (1) hand rail shall be installed (as applicable) in compliance with current NFPA. The hand rail shall be constructed of 6063T5 1.25" OD anodized aluminum tube, with an integral ribbed surface to assure a good grip for personnel safety, mounted between chrome stanchions.

Hose Bed Folding Steps (2)

Dual lighted LED folding steps, two (2) shall be positioned to the officer side rear of the body. The steps shall be NFPA compliant for access to the hose bed storage area and in step height and surface area. The steps shall be staggered stepped as applicable with tailboard depth, not applicable with recessed step mounting.

Dual lighted LED folding step with LED lights integral to the step on the top to provide NFPA requirements of 2 FC on the stepping surface. Folding step shall also have a LED light integral to the bottom of the step to meet NFPA requirements of a stepping surface up to 18" below the step. The folding step shall sustain a minimum static load of 500 lbs. The folding step shall also meet NFPA slip resistance qualifications.

One (1) hand rail shall be installed (as applicable) in compliance with current NFPA. The hand rail shall be constructed of 6063T5 1.25" OD anodized aluminum tube, with an integral ribbed surface to assure a good grip for personnel safety, mounted between chrome stanchions.

Folding Steps (5)

Dual lighted LED folding step, one (1) shall be located officer side front compartment face and Four (4) driver side front compartment face. The folding step shall meet current NFPA in step height and surface area.

Dual lighted LED folding step with LED lights integral to the step on the top to provide NFPA requirements of 2 FC on the stepping surface. Folding step shall also have a LED light integral to the bottom of the step to meet NFPA requirements of a stepping surface up to 18" below the step. The folding step shall sustain a minimum static load of 500 lbs. The folding step shall also meet NFPA slip resistance qualifications.

One (1) hand rail shall be installed in compliance with current NFPA. The hand rail shall be constructed of 6063T5 1.25" OD anodized aluminum tube, with an integral ribbed surface to assure a good grip for personnel safety, mounted between chrome stanchions.

Rear Mud Flaps

The rear tires shall have a set of black mud flaps mounted behind the rear chassis wheels.

Body Height and Mainframe Construction

The body mainframe shall be entirely constructed of aluminum. The complete framework shall be constructed of 6061T6 and 6063T5 aluminum alloy extrusions welded together using 5356 aluminum alloy welding wire.

The body mainframe shall include 3" x 3" 6061-T6 aluminum 3/8" (0.375") wall crossmember extrusion or 3" x 3" I-beam section aluminum extrusion depending on the application at the front of the body. A solid 3" x 3" "I-beam" section aluminum extrusion shall be provided the full width of the body forward and rearward of the rear wheel well. The crossmembers shall be designed to support the compartment framing and shall be welded to 1-3/16" x 3" (1.188" x 3") solid 6063-T5 aluminum frame sill extrusions. The frame sill extrusions shall be shaped to contour with the chassis frame rails and shall be protected from contact with the chassis frame rails by 5/16" x 2" (0.31" x 2") fiber-reinforced rubber strips to prevent wear and galvanic corrosion caused when dissimilar metals come in contact.

Body Mounting System

The main body shall be attached to the chassis frame rails with six (6) of 5/8" (0.625") diameter steel U-bolts. This body mounting system shall be used to allow easy removal of the body for major repair or disassembly.

Water Tank Mounting System

The body design shall allow the booster tank to be completely removable without disturbing or dismantling the apparatus body structure. The water tank shall rest on top of a 3" x 3" frame assembly covered with rubber shock pads and corner braces formed from 3/16" angled plate to support the tank. The booster tank mounting system shall utilize a floating design to reduce stress from road travel and vibration. To maintain low vehicle center of gravity the water tank bottom shall be mounted within 5" of the frame rail top.

Hosebed Side Assembly

The hosebed side assemblies shall be made of 3" x 3" slotted aluminum extrusion and 3/16" (.188") smooth plate. The hosebed side assemblies shall provide a 90" high body.

The exterior hosebed side surface shall be completely sanded and deburred to assure a smooth finish and painted job color. The interior hosebed side surface shall be completely sanded and deburred to assure a smooth sanded finish.

Hose Bed Capacity

The hose bed capacity shall meet NFPA (ULC) minimum recommendation with estimated hose load weight up to 1,200 lbs.

Hosebed

The area above the booster tank shall have a hose storage area provided. The hosebed shall be constructed entirely from maintenance-free, 3/4" deep x 7.5" wide, extruded aluminum slats that shall be pop-riveted into a one-piece grid system. Each slat shall have all sharp edges removed and have an anodized ribbed top surface that shall prevent the accumulation of water and allow for ventilation of wet hose.

The hosebed shall include an open area for the fill tower(s). The hosebed design shall incorporate adjustable tracks in the forward area rearward of the fill tower(s) and the rearward area of the hosebed for the installation of an adjustable divider(s). The adjustable tracks shall hold an adjustable divider(s) mounting nut straight, so only a Philips head screwdriver is required to adjust a divider(s) from side to side (as is practical with other hosebed mounted equipment).

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

Hose Bed Dividers (2)

There shall be two (2) hose bed dividers provided the full fore-aft length of the hose bed.

The hose bed divider shall be constructed of 1/4" (0.25") smooth aluminum plate with an extruded aluminum base welded to the bottom. The rear end of the divider shall have a 3" radius corner to protect personnel. The divider shall be natural finish aluminum for long-lasting appearance and shall be sanded and de-burred to prevent damage to the hose.

The dividers shall be adjustable from side to side in the hose bed to accommodate varying hose loads.

Hose Bed Divider Hand Hold (2)

There shall be hand hold cut-outs on the trailing edge of each hose bed divider. The cut-outs are specifically sized for use in adjusting of the hose bed divider.

Overall Height Restriction

The apparatus shall have no overall height restrictions.

Overall Length Restriction

The unit has no overall length restrictions.

Body Wheel Well

The body wheel well frame shall be constructed from 6063-T5 aluminum extrusion with a slot the full length to permit an internal fit of 1/8" (0.125") aluminum treadplate. The wheel well trim fenderette shall be constructed from 6063-T5 formed aluminum extrusion with a sanded finish. The wheel well liners shall be constructed of a 3/16" (.187") composite material. The liners shall be bolt-on and shall provide a maintenance-free and damage-resistant surface.

Recessed Directional Light Bar Mount

An area at the rear of the body shall be provided for recess mounting of a directional light bar. The recess shall reduce the opening height of the rear compartment(s) (if applicable).

Body Rubrail Package

The main body of the apparatus shall have a rubrail package installed on all the lower outboard painted structural surfaces of the body. Each rubrail shall include a white reflective surface.

SCBA Wheel Well Bottle Storage (8)

The body wheel well area shall store eight (8) SCBA bottles- four (4) on the officer side and four (4) on the driver side. The bottles shall be secured in each storage area by a vertical hinged door which shall be secured in the closed position by a push button latch. The doors shall have a brushed stainless steel finish.

Each storage area shall provide individual storage of a bottle and shall not allow forward or rearward movement of the bottle. The bottle(s) shall be removable from the storage area without the bottle(s) coming into contact with any surface area of the wheel well (NO EXCEPTIONS).

SCBA Straps (8)

Straps shall be provided in each exterior storage compartment to provide secondary means to hold each SCBA bottle in the compartment. The straps shall be constructed from 1" nylon webbing formed in a loop. The strap(s) shall be mounted to the storage compartment ceiling directly inside the door opening at each bottle location.

Fire Pump System

The pump shall be a midship mounted Hale Qflo single stage centrifugal pump. The pump shall be mounted on the chassis frame rails and shall be split-shaft driven.

The entire pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI (207 MPa). All metal moving parts in contact with water shall be of high quality bronze or stainless steel. Pump body shall be horizontally split in two (2) sections, for easy removal of impeller assembly including wear rings and bearings from beneath the pump without disturbing pump mounting or piping.

The pump impeller shall be hard, fine grain bronze of the mixed flow design and shall be individually ground and hand balanced. Impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body, and of wrap-around double labyrinth design for maximum efficiency.

The pump shaft shall be heat-treated, corrosion-resistant stainless steel and shall be rigidly supported by three (3) bearings for minimum deflection. The sleeve bearing is to be lubricated by a force fed, automatic oil lubricated design, pressure balanced to exclude foreign material. The remaining bearings shall be heavy-duty, deep groove ball bearings in the gearbox and shall be splash-lubricated. Pump shaft must be sealed with double-lip oil seal to keep road dirt and water out of the gearbox.

Two (2) 6" diameter suction ports with 6" NST male threads and removable screens shall be provided, one (1) each side. The ports shall be mounted one (1) on each side of the midship pump and shall extend through the side pump panels. Inlets shall come equipped with long handle chrome caps.

Mechanical Seal

A mechanical seal shall be provided on the inboard side of the pump. The mechanical seal shall be two (2) inches in diameter and shall be spring-loaded, maintenance-free, and self-adjusting.

Discharge Manifold

The pump system shall utilize a stainless steel discharge manifold system that allows a direct flow of water to discharge valves. The manifold and fabricated piping systems shall be constructed of a minimum of Schedule 10 stainless steel to reduce corrosion.

The apparatus manufacturer shall provide a full 10 year stainless steel plumbing components warranty. This warranty shall cover defects in materials or workmanship of apparatus manufacturer designed foam/water plumbing system stainless steel components for 10 years. A copy of the warranty document shall be provided with the proposal.

Priming System

The electrically-driven priming pump shall be a positive displacement vane type. One (1) priming control, located at the pump operator's position, shall open the priming valve and start the priming motor. The primer shall be oil-less type. The priming valve shall be electronically interlocked to the "Park Brake" circuit to allow priming of the pump before the pump is placed in gear.

Pump Shift

The pump shift shall be pneumatically-controlled using a power shifting cylinder.

The power shift control valve shall be mounted in the cab and be labeled "PUMP SHIFT". The apparatus transmission shift control shall be furnished with a positive lever, preventing accidental shifting of the chassis transmission.

A green indicator light shall be located in the cab and be labeled "PUMP ENGAGED". The light shall not activate until the pump shift has completed its full travel into pump engagement position.

A second green indicator light shall be located in the cab and be labeled "OK TO PUMP". This light shall be energized when both the pump shift has been completed and the chassis automatic transmission has obtained converter lock-up (4th gear lock-up).

Systems

Two (2) test plugs shall be pump panel mounted for third party testing of vacuum and pressures of the pump.

A master drain valve shall be installed and operated from the pump operator's panel. The master pump drain assembly shall consist of a Class 1 bronze master drain with a rubber disc seal and turning handle.

The manual master drain valve shall have six (6) individually-sealed ports that allow quick and simultaneous draining of multiple intake and discharge lines. It shall be constructed of corrosion-resistant material and be capable of operating at a pressure of up to 600 PSI.

The master drain shall provide independent ports for low point drainage of the fire pump and auxiliary devices.

Auxiliary Engine Cooler

An engine cooler used to lower engine water temperature during prolonged pumping operations and controlled at the pump operator's panel shall be provided.

The engine cooler shall be installed in the engine coolant system in such a manner as to allow cool pump water to circulate around engine water, thus forming a true heat exchanger action. Cooler inlet and outlet shall be continuous, preventing intermixing of engine coolant and pump water.

Pump Rating

The fire pump shall be rated at 1250 GPM.

Pump Certification: 1250 GPM

The pump, when dry, shall be capable of taking suction and discharging water in accordance with current NFPA 1901. The pump shall be tested at the manufacturer's facility by an independent, third-party testing service. The conditions of the pump test shall be as outlined in current NFPA 1901.

The tests shall include, at a minimum, the pump test, the pumping engine overload test, the pressure control system test, the priming device tests, the vacuum test, and the water tank to pump flow test as outlined in current NFPA 1901.

A piping hydrostatic test shall be performed as outlined in current NFPA 1901.

The pump shall deliver the percentage of rated capacities at pressures indicated below:

- 100% of rated capacity at 150 psi net pump pressure
- 100% of rated capacity at 165 psi net pump pressure
- 70% of rated capacity at 200 psi net pump pressure
- 50% of rated capacity at 250 psi net pump pressure

A test plate, installed at the pump panel, shall provide the rated discharges and pressures together with the speed of the engine as determined by the certification test, and the no-load governed speed of the engine.

A Certificate of Inspection certifying performance of the pump and all related components shall be provided at time of delivery. Additional certification documents shall include, but not limited to, Certificate of Hydrostatic Test, Electrical System Performance Test, Manufacturer's Record of Pumper Construction, and Certificate of Pump Performance from the pump manufacturer.

Speed Counter

The test connection shall be installed on the pump panel to manually verify the vehicle engine speed displayed on the electronic tachometer.

Steamers, Flush+1

The pump 6" steamer intake(s) shall be mounted approximately 1" from the pump panel to back of cap when installed. The "Flush+1" dimension can vary + or - 1-1/4" or as practicable depending on the pump module width and options selected. (Example 72" or 76" modules.)

Location: driver's side, officer's side.

Master Drain Valve

A manual master drain valve shall be installed on the pump panel. The master pump drain assembly shall consist of a Class 1 bronze master drain with a rubber disc seal. The master drain shall have a rubber seal to prevent water from running out on the running board.

The manual master drain valve shall have twelve (12) individual-sealed ports that allow quick and simultaneous draining of multiple intake and discharge lines. It shall be constructed of corrosion-resistant material and be capable of operating at a pressure of up to 600 PSI.

The master drain shall provide independent ports for low point drainage of the fire pump and auxiliary devices.

Pump Cooler

The pump shall have a 3/8" line installed from the pump discharge to the booster tank to allow a small amount of water to circulate through the pump casing in order to cool the pump during sustained periods of pump operation when water is not being discharged. The pump cooler line shall be controlled from the pump operator's panel by an Innovative Controls 1/4 turn valve with "T" handle. Each 1/4 turn handle grip shall feature built-in color-coding labels and a verbiage tag.

Intake 2.5 Top Mount Control Akron Valve

One (1) 2-1/2" suction inlet with a manually operated 2-1/2" Akron valve shall be provided on the driver side pump panel.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position and water is flowing through it.

The valve shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

The outlet of the valve shall be connected to the suction side of the pump with the valve body located behind the pump panel. The valve shall come equipped with a brass inlet strainer, 2-1/2" NST female chrome inlet swivel and shall be equipped with a chrome plated rockerlug plug with a retainer device.

The valve shall be controlled by a vertically mounted quarter turn locking handle located on the top mounted pump operator's panel and shall visibly indicate the position of the valve at all times.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance, and decreased friction loss.

A 3/4" bleeder valve assembly will be installed on the side pump panel.

Intake Pressure Relief

A18 Series - PRESSURE RELIEF VALVE – TFT's pressure relief valve is adjustable from 50 to 250 psi (3 to 14 bar) with easy to see 25 psi (2 bar) increments. The aluminum casting is plastic impregnated, hardcoat anodized, and TFT powder coat finished inside and out for maximum corrosion protection. Works with Darley, Waterous, or Hale bolt hole patterns for direct use on pump flanges.

Front Jump Line 1.5 Akron Valve

One (1) 1-1/2" preconnect outlet with a manually operated Akron valve shall be supplied to the extended front bumper. The preconnect shall consist of a 2" heavy duty hose coming from the pump discharge manifold to a 2" FNPT x 1-1/2" MNST mechanical swivel hose connection to permit the use of the hose from either side of the apparatus.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.

The valve shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

An air blow-out valve shall be installed between the chassis air reservoir and the front jump line. The control shall be installed on the pump operator's panel.

The discharge shall be supplied with a Class 1 automatic 3/4" drain valve assembly. The automatic drain shall have an all-brass body with stainless steel check assembly. The drain shall normally be open and automatically close when the pressure is greater than 6 psi.

The valve control shall be located at the pump operator panel and shall visually indicate the position of the valve at all times.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

Deck Gun 3" Discharge Akron Valve

One (1) 3" deck gun discharge outlet with a manually operated Akron valve and 3" stainless steel pipe shall be provided above the pump compartment.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.

The valve shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

The valve shall be equipped with a device that limits the opening and closing speeds to comply with the current edition of NFPA 1901.

The valve control shall be located at the pump operator's panel and shall visually indicate the position of the valve at all times.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

Front Bumper Discharge Swivel, Officer's Side Extension

There shall be a brass swivel provided for the front bumper discharge located on top of the bumper extension, officer's side.

1.5 Double Crosslays Akron Valves (2)

Two (2) crosslay discharges shall be provided at the front area of the body. The crosslays shall include one (1) 2" brass swivel with a 1-1/2" hose connection to permit the use of hose from either side of the apparatus.

The crosslay hose bed shall consist of a 2" heavy-duty hose coming from the pump discharge manifold to the 2" swivel. The hose shall be connected to a manually operated 2" Akron valve. The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.

The valve shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

The valve control shall be located at the pump operator's panel and shall visually indicate the position of the valve at all times.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

Location: crosslay 1 & 2.

Left Panel 2.5 Discharge Akron Valves (2)

Two (2) 2-1/2" discharge outlets with a manually operated Akron valves shall be provided at the left hand side pump panel.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.

The valve shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

The valve control shall be located at the pump operator panel and shall visually indicate the position of the valve at all times.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

Location: left side discharge 1, left side discharge 2.

Right Panel 2.5 Discharge Akron Valves (2)

Two (2) 2-1/2" discharge outlets with a manually operated Akron valves shall be provided at the right side pump panel.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.

The valve shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

The valve control shall be located at the pump operator panel and shall visually indicate the position of the valve at all times.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

Location: right side discharge 1, right side discharge 2.

Left Rear 2.5" Discharge Akron Valve

One (1) 2-1/2" discharge outlet with a manually operated Akron valve shall be supplied to the left rear of the apparatus by a 2-1/2" stainless steel pipe.

The valve shall be an Akron 8800HD series with a 316 stainless steel ball and dual polymer seats for ease of operation and increased abrasion resistance. The valve shall have a self-locking ball feature using an automatic friction lock design to balance the stainless steel ball when in a throttle position with water flowing through it.

The valve shall be of the unique Akron swing-out design to allow the valve body to be removed for servicing without disassembling the plumbing.

The valve control shall be located at the pump operator panel and shall visually indicate the position of the valve at all times.

All fabricated piping shall be a minimum of Schedule 10 stainless steel for superior corrosion resistance and decreased friction loss.

Location: left rear discharge.

Deck Gun Location

Deck gun piping shall be positioned centered in deck gun channel or centered and offset forward in dunnage area (as applicable to upper module area design). This location shall allow for optimal operation of a deck gun monitor once installed.

Bleeder Drain Valves (9)

The bleeder/drain valves shall be Innovative Controls $\frac{3}{4}$ " ball brass drain valves with a chrome-plated $\frac{1}{4}$ turn handle. Each $\frac{1}{4}$ turn handle grip shall feature built-in color-coding labels and a verbiage tag identifying each valve.

Top Mount Valve Controls (12)

For valve actuation, the apparatus pump panel shall be equipped with Innovative Controls Top Mount Valve Controls. The ergonomically designed grip-activated T-handles shall be chrome-plated zinc with recessed UV-resistant labels for color-coding and verbiage. The patented spring-loaded handle and control rod assembly shall open and close valves when the user simply squeezes the T-handle and pivots the rod. When the T-handle grip is released, the valve control shall lock at the desired position automatically to eliminate valve drift. No secondary manual tightening method shall be required. A robust die cast and chrome-plated pivot arm shall house the internal locking mechanism protecting it from environmental hazards. A brass bushing and closely-toleranced stainless steel rod shall ensure long-term smooth valve control operation and never require lubrication.

The valve control handles shall mount to sections of decorative clear anodized aluminum extrusion, designed to evenly space the handles and provide a secure mount for the handle's pivot rod.

Garnish Ring Bezel

Innovative Controls intake and/or discharge garnish rings shall be installed to the apparatus with mounting bolts. These bezel assemblies will be used to identify intake and/or discharge ports with color and verbiage. These garnish 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 insert labels shall be backed with 3M permanent adhesive (200MP), which meets UL969 and NFPA standards.

Pump Pressure Governor

The apparatus shall be equipped with a Class 1 "TOTAL PRESSURE GOVERNOR" (TPG) Integrated pump control system. The TPG shall have a weatherproof color display. The TPG will operate as an engine/pump pressure governor/throttle system that is connected directly to the Electronic Control Module (ECM) mounted on the engine. The TPG is to operate as a pressure sensor (regulating) governor (PSG).

The TPG shall display engine RPM, oil pressure, engine temperature and voltage along with providing critical warnings. The warning levels for oil pressure, high engine temperature, low voltage and high voltage shall be independently programmable.

GAUGE IC 10 LED WATER TANK LEVEL

One (1) Innovative Controls brand water tank level gauge shall be located at the pump operator's panel to provide a high-visibility display of the water tank level. Ten (10) high-intensity light emitting diodes (LED's) on the display module shall have a 3-dimensional lens allowing the full, $\frac{3}{4}$, $\frac{1}{2}$, $\frac{1}{4}$, and refill levels to be easily distinguished at a glance within full 180 degree visibility.

The display module shall be protected from vibration and contamination with the components being encased in an encapsulated plastic housing. The long life and extreme durability of LED indicators eliminates light bulb replacement and maintenance. Color coded cover plates shall complete the assembly of the display module to the pump panel. Each display level can be set independently for maximum reliability.

The display shall provide a steady indication of fluid level despite sloshing inside of the tank when the vehicle is in motion due to an "anti-slosh" feature.

GAUGE IC 10 LED FOAM TANK LEVEL

One (1) Innovative Controls brand foam tank level gauge shall be located at the pump operator's panel to provide a high-visibility display of the foam tank level. Ten (10) high-intensity light emitting diodes (LEDs) on the display module shall have a 3-dimensional lens allowing the full, 3/4, 1/2, 1/4, and refill levels to be easily distinguished at a glance within full 180 degree visibility.

The display module shall be protected from vibration and contamination with the components being encased in an encapsulated plastic housing. The long life and extreme durability of LED indicators eliminates light bulb replacement and maintenance. Color coded cover plates shall complete the assembly of the display module to the pump panel. Each display level can be set independently for maximum reliability.

The display shall provide a steady indication of fluid level despite sloshing inside of the tank when the vehicle is in motion due to an "anti-slosh" feature.

Tank Level Gauge Water Additional

An additional Innovative Controls brand water tank level gauge shall be located officer rear to provide a high-visibility display of the water tank water level. Fourteen (14) high-intensity light emitting diodes (LED`s) on the display module shall form an inverted "V" pattern allowing the full, 3/4, 1/2, 1/4, and refill levels to be easily distinguished at a glance.

The display module shall be protected from vibration and contamination with the components being encased in an encapsulated plastic housing. The long life and extreme durability of LED indicators eliminates light bulb replacement and maintenance. Color-coded cover plates shall complete the assembly of the display module to the pump panel. Each display level shall be set independently for maximum reliability.

The display shall provide a steady indication of fluid level despite sloshing inside of the tank when the vehicle is in motion due to an "anti-slosh" feature.

2.5 Pressure Gauges (9)

The valve discharge gauges shall be 2½" (63mm) diameter Innovative Controls pressure gauges. Each gauge shall have a rugged corrosion free stainless steel case and clear scratch resistant molded crystals with captive O-ring seals to ensure distortion free viewing and seal the gauge. The gauges shall be filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from -40F to +160F. Each gauge shall exceed ANSI B40.1 Grade A requirements with an accuracy of +/- 1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy.

A polished chrome-plated stainless steel bezel shall be provided to prevent corrosion and protect the lens and gauge case. The gauges shall be installed into decorative chrome-plated mounting bezels that incorporate valve-identifying verbiage and/or color labels. The gauges shall display a range from 0 to 400 psi with black graphics on a white background.

4" Master Pressure Gauges w/Bezel

The master intake and master discharge gauges shall be 4"(101mm) diameter IC pressure gauges. Each gauge shall have a rugged corrosion free stainless steel case and clear scratch resistant molded crystals with captive O-ring seals to ensure distortion free viewing and seal the gauge. The gauges shall be filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from -40F to +160F. Each gauge shall meet ANSI B40.1 Grade 1A requirements with an accuracy of +/- 1% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy.

The two 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. The test port manifold is solid cast brass with chrome plated plugs. The master gauges shall be installed on the pump panel no more than 6 inches apart. The gauge on the left shall be the master pump intake gauge and display a range from 30" vac to 400 psi with black graphics on a white background. The gauge on the right shall be the master pump discharge gauge and display a range from 0 to 400 psi with black graphics on a white background.

Foam System

A Hale FoamLogix 2.1A, 12 volt DC powered variable-speed electronic direct-injection foam-concentrate proportioning system with a 2.1 gpm foam concentrate pump shall be integrated into the apparatus to provide foam proportioning. The pump shall be capable of handling Class A foam concentrate only and be operated by a full-function panel mounted digital display.

The system shall operate via a paddlewheel flow sensor mounted in a 3 inch stainless steel double waterway check-valve manifold that includes a 1/2 inch chemical injection point check valve. This double check-valve assembly is required for backflow prevention and NFPA compliance. A single check valve assembly will not be permitted.

The inlet of this stainless steel manifold/double check-valve assembly will be connected to the fire pump, and the outlet connected to the foam capable discharge outlet(s) on the fire apparatus, as specified. The flow sensor/stainless steel foam manifold combination shall be capable of water or foam solution flow rates of 30 to 750 gpm.

The foam proportioning system shall be equipped with a panel mounted digital display control unit with a microprocessor that monitors total water flow and foam concentrate pump output to provide the operator preset proportional amount of foam concentrate injected on the discharge side of the fire pump. Total foam concentrate pump concentrate output shall be 2.1 gallons per minute. Proportioning rate is push-button set by the pump operator on the digital display from 0.1% to 1%, in 0.1% increments.

The digital display panel mounted electronic operator control unit shall provide concentrate injection readout in tenths of a percent while also being able to read water flow, total water flowed and total amount of foam concentrate used. The control shall flash a warning indicating low concentrate in the reservoir to the operator, and shall be able to shut off the concentrate pump to prevent damage to the pump. A bar graph on the control unit shall provide visual indication of system operating capacity and will indicate when capacity is exceeded.

Foam concentrate proportioning systems that do not have the above panel mounted digital display informational features will not be accepted.

The foam concentrate pump shall be fed concentrate by a non-metallic housing foam concentrate strainer that is equipped with a service shut-off valve.

The unit will be fed 12 volt DC power from the apparatus electrical system, and be equipped with a chassis frame ground strap, per the foam proportioner manufacturer's installation and operating instruction manual.

Foam System Certification

The foam system performance shall be tested and certified in compliance with 2009 NFPA 1901.

Foam System Plumbing Discharges (3)

The foam system shall be plumbed to 1.5 first crosslay, 1.5 second crosslay and center bumper front jump line.

Vehicle Data Recorder

Data Recorder

A vehicle data recorder system shall be provided to comply with NFPA 1901, 2009 edition. The following data shall be monitored:

- Vehicle speed MPH
- Acceleration (from speedometer) MPH/Sec.
- Deceleration (from speedometer) MPH/Sec.
- Engine speed RPM
- Engine throttle position % of full throttle
- ABS Event On/Off
- Seat occupied status Occupied Yes/No by position
- Seat belt status Buckled Yes/No by position
- Master Optical Warning Device Switch On/Off
- Time 24 hour time
- Date Year/Month/Day

Occupant Detection System

There shall be a visual and audible warning system installed in the cab that indicates the occupant buckle status of all cab seating positions that are designed to be occupied during vehicle movement.

The audible warning shall activate when the vehicle's park brake is released and a seat position is not in a valid state. A valid state is defined as a seat that is unoccupied and the seat belt is unbuckled, or one that has the seat belt buckled after the seat has been occupied.

The visual warning shall consist of a graphical display that will continuously indicate the validity of each seat position.

The system shall include a display panel with LED back-lit ISO indicators for each seating position, seat sensor and safety belt latch switch for each cab seating position, audible alarm and braided wiring harness.

The display panel shall be located outboard on driver's side overhead console.

Multiplex Electrical System

Electrical System

The apparatus shall incorporate a Weldon V-MUX multiplex 12 volt electrical system. The system shall have the capability of delivering multiple signals via a CAN bus. The electrical system installed by the apparatus manufacturer shall conform to current SAE standards, the latest FMVSS standards, and the requirements of the applicable NFPA 1901 standards.

The electrical system shall be pre-wired for optional computer modem accessibility to allow service personnel to easily plug in a modem to allow remote diagnostics.

The electrical circuits shall be provided with low voltage over-current protective devices. Such devices shall be accessible and located in required terminal connection locations or weather-resistant enclosures. The over-current protection shall be suitable for electrical equipment and shall be automatic reset type and meet SAE standards. All electrical equipment, switches, relays, terminals, and connectors shall have a direct current rating of 125 percent of maximum current for which the circuit is protected. The system shall have electro-magnetic interference suppression provided as required in applicable SAE standards.

Any electrical junction or terminal boxes shall be weather-resistant and located away from water spray conditions.

Multiplex System

For superior system integrity, the networked multiplex system shall meet the following minimum component requirements:

- The network system must be Peer to Peer technology based on RS485 protocol. No one module shall hold the programming for other modules. One or two modules on a network referred to as Peer to Peer, while the rest of the network consists of a one master and several slaves is not considered Peer to Peer for this application.
- Modules shall be IP67 rated to handle the extreme operating environment found in the fire service industry.
- All modules shall be solid state circuitry utilizing MOS-FET technology and utilize Deutsch series input/output connectors.
- Each module that controls a device shall hold its own configuration program.
- Each module should be able to function as a standalone module. No "add-on" module will be acceptable to achieve this form of operation.
- Load shedding power management (8 levels).
- Switch input capability for chassis functions.
- Responsible for lighting device activation.
- Self-contained diagnostic indicators.
- Wire harness needed to interface electrical devices with multiplex modules.
- The grounds from each device should return to main ground trunk in each sub harness by the use of ultrasonic splices.

Wiring

All harnessing, wiring and connectors shall be manufactured to the following standards/guidelines. No exceptions.

- NFPA 1901-Standard for Automotive Fire Apparatus
- SAE J1127 and J1127
- IPC/WHMA-A-620 – Requirements and Acceptance for Cable and Wire Harness Assemblies. (Class 3 – High Performance Electronic Products)

All wiring shall be copper or copper alloys of a gauge rated to carry 125% of the maximum current for which the circuit is protected. Insulated wire and cable 8 gauge and smaller shall be SXL, GXL, or TXL per SAE J1128. Conductors 6 gauge and larger shall be SXL or SGT per SAE J1127.

All wiring shall be color coded and imprinted with the circuit's function. Minimum height of imprinted characters shall not be less than .082" plus or minus .01". The imprinted characters shall repeat at a distance not greater than 3".

A coil of wire shall be provided behind electrical appliances to allow them to be pulled away from mounting area for inspection and service work.

Wiring Protection

The overall covering of the conductors shall be loom or braid.

Braid style wiring covers shall be constructed using a woven PVC-coated nylon multifilament braiding yarn. The yarn shall have a diameter of no less than .04" and a tensile strength of 22 lbs. The yarn shall have a service temperature rating of -65 F to 194 F. The braid shall consist of 24 strands of yarn with 21 black and 3 yellow. The yellow shall be oriented the same and be next to each other.

Wiring loom shall be flame retardant black nylon. The loom shall have a service temperature of -40 F to 300 F and be secured to the wire bundle with adhesive-backed vinyl tape.

Wiring Connectors

All connectors shall be Deutsch series unless a different series of connector is needed to mate to a supplier's component. The connectors and terminals shall be assembled per the connector/terminal manufacturer's specification. Crimble/Solderless terminals shall be acceptable. Heat shrink style shall be utilized unless used within the confines of the cab.

NFPA Required Testing of Electrical System

The apparatus shall be electrical tested upon completion of the vehicle and prior to delivery. The electrical testing, certifications, and test results shall be submitted with delivery documentation per requirements of NFPA 1901. The following minimum testing shall be completed by the apparatus manufacturer:

1. Reserve capacity test:

The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged. The engine shall be shut off and the minimum continuous electrical load shall be activated for ten (10) minutes. All electrical loads shall be turned off prior to attempting to restart the engine. The battery system shall then be capable of restarting the engine. Failure to restart the engine shall be considered a test fail.

2. Alternator performance test at idle:

The minimum continuous electrical load shall be activated with the engine running at idle speed. The engine temperature shall be stabilized at normal operating temperature. The battery system shall be tested to detect the presence of battery discharge current. The detection of battery discharge current shall be considered a test failure.

3. Alternator performance test at full load:

The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed. The test duration shall be a minimum of two (2) hours. Activation of the load management system shall be permitted during this test. However, an alarm sounded by excessive battery discharge, as detected by the system required in NFPA 1901 Standard, or a system voltage of less than 11.7 volts DC for a 12 volt nominal system, for more than 120 seconds, shall be considered a test failure.

4. Low voltage alarm test:

Following the completion of the above tests, the engine shall be shut off. The total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates. The battery voltage shall be measured at the battery terminals. With the load still applied, a reading of less than 11.7 volts DC for a 12 volt nominal system shall be considered a test failure. The battery system shall then be able to restart the engine. Failure to restart the engine shall be considered a test failure.

NFPA Required Documentation

The following documentation shall be provided on delivery of the apparatus:

- A. Documentation of the electrical system performance tests required above.
- B. A written load analysis, including:
 - a. The nameplate rating of the alternator.
 - b. The alternator rating under the conditions.
 - c. Each specified component load.
 - d. Individual intermittent loads.

Multiplex Display

The V-MUX multiplex electrical system shall include a text display.

The display shall have the following features:

- Rugged vacuum fluorescent technology
- Two twenty character lines
- Programmed to show door ajar status and diagnostic information

The display shall be located center of dash.

Light Bar

A Whelen Justice series 56" all LED light bar model JE2NFPA shall be installed. The light bar shall consist of four (4) corner facing LIN6 red LED modules, six (6) forward facing CON3 Linear LED modules, four (4) red / two (2) white, and MKEZ7 mounts.

Lens color: Clear.

The white LEDs shall be switched off in blocking right of way mode.

The light bar shall be installed in the following location: Centered on the front cab roof.

Lower Level Warning Light Package

Eight (8) Whelen 600 Series, two (2) Whelen 500 series LED light heads all with red lenses shall be provided.

The lights will be wired with weatherproof connectors and shall be mounted as close to the corner points of the apparatus as is practical as follows:

- Two (2) 600 series LED light heads on the front of the apparatus facing forward
- Two (2) 600 series LED light heads on the rear of the apparatus facing rearward
- One (1) 600 series LED light heads each side of the apparatus at the forward most point (as practical) side facing
- One (1) 600 series LED light head each side of the apparatus centrally located to provide midship warning lighting
- One (1) 500 series LED light heads each side at the rearward most point (as practical) side facing.

The side facing lights shall be located at forward most position, centered in rear wheel well, and side facing at rear of body in rubrail if equipped.

All warning devices shall be surface mounted in compliance with NFPA standards.

Upper Rear Warning Lights

Two (2) Whelen model L31H Super LED beacons with Red domes shall be supplied.

The lights shall be located rear upper body on aerial style brackets to meet Zone C upper requirements.

Hazard (Door Ajar) Light

There shall be a 2" red LED hazard light installed as specified.

The light shall be located center overhead.

Warning Lights

Two (2) Whelen 600 series Super LED light heads with red lenses shall be provided. The rectangular lights shall include chrome flanges where applicable.

Location: (1) each side above tail lights.

Directional Traffic Warning Light

One (1) Whelen TAL65 LED 36" long Traffic Advisor with amber lenses shall be provided. The unit shall have a manual override of directional signal with a slide switch mounted in the chassis cab.

The light shall be installed at the rear of the body to direct traffic around the vehicle.

Directional Light Bar Control Location

The directional light bar control head shall be located in the center console.

Electronic Siren

A Federal PA300 siren model 690010 solid state electronic siren with attached noise-canceling microphone shall be installed. The unit shall be capable of driving a single high power speaker up to 200 watts to achieve a sound output level that meets Class "A" requirements.

Operating modes shall include Hi-Lo, yelp, wail, P.A., air horn and radio re-broadcast.

The siren shall be recessed mounted in the cab.

Mechanical Siren

A chrome plated and pedestal mounted Federal Q2B-P coaster siren shall be installed on top of the front bumper extension. An electric siren brake switch shall be located in the cab accessible to the driver.

The siren shall be located driver side front bumper.

Electronic Siren Control Location

The electronic siren control shall be located in the center console.

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 MSFMT with grille shall be provided on the outside of the speaker to prevent road debris from entering the speaker.

Speaker dimensions shall be: 5.5 in. high x 5.9 in. wide x 2.5 in. deep. Weight = 5.5 lbs.

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 officer side front bumper.

Tail Lights

Two (2) Whelen model 600 series LED (Light Emitting Diode) lights with one (1) Whelen 600 series halogen light shall be installed in a Cast 3 housing in a vertical position each side at rear and wired with weatherproof connectors.

Light functions shall be as follows:

- LED red running light with red brake light in upper position.
- LED amber populated arrow pattern turn signal in middle position.
- Halogen 27 watt clear back-up light in lower position.

A one-piece polished aluminum trim casting shall be mounted around the three (3) individual lights in a vertical position.

License Plate Light

One (1) Truck-Lite model 15905 white LED license plate light mounted in a Truck-Lite model 15732 chrome plated plastic license plate housing shall be mounted at the rear of the body.

Body Marker Lights

TecNiq 3/4" LED grommet clearance lights shall be installed as specified.

Upper Body:

One (1) red LED clearance light each side at rear of body, facing rear.

Lower Body:

- Three (3) red LED clearance lights centered at rear.
- One (1) red LED clearance light side facing at the trailing edge on either side of the apparatus body.
- One (1) amber LED clearance light side facing at front of body.
- One (1) amber LED auxiliary turn light side facing at front of body.

Recessed Step Lights (2)

Two (2) recessed incandescent 4" lights with clear lens shall be provided to illuminate the step at the location specified.

Location: one (1) each side of the top mount walkway.

Compartment Light Package

There shall be a minimum of one (1) TecNiq model T440 4" circular LED (Light Emitting Diode) mounted in each body compartment greater than 4 cu ft. Compartments over 36" in height shall have a minimum of two (2) lights, one (1) high and one (1) low. Transverse compartments shall have a minimum of two (2) lights, located one (1) each side.

Compartment lights shall be wired to a master on/off rocker switch on the cab switch panel. Each light shall be in a resilient shock-absorbent mount for improved bulb life.

The wiring connection for the compartment lights shall be made with a weather-resistant plug in style connector. A single water-and corrosion-resistant switch with a polycarbonate actuator and sealed contacts shall control each compartment light. The switch shall allow the light to illuminate if the compartment door is open.

Ground Lights

The apparatus shall be equipped with a sufficient quantity of lights to properly illuminate the ground areas around the apparatus in accordance with current NFPA requirements. The lights shall be TecNiq model T440 4" circular LED (Light Emitting Diode) with clear lenses mounted in a resilient shock absorbent mount for improved bulb life. The wiring connections shall be made with a weather resistant plug in style connector.

Ground area lights shall be switched from the cab dash with the work light switch.

One (1) ground light shall be supplied under each side of the front bumper extension if equipped.

Lights in areas under the driver and crew area exits shall be activated automatically when the exit doors are opened.

Hose Bed Light

A Truck-Lite round LED light model 81380 shall be installed at the front area of the hose bed to provide hose bed lighting per current NFPA 1901. The hose bed light shall be switched with the work light switch in the cab.

Deck Lights

Two (2) Truck-Lite round 12 volt LED model 81380 floodlights shall be installed at the rear of the apparatus. The rear deck lights shall be switched with the work light switch in the cab.

Location: rear body/beavertail area on the trailing edge up high.

Crosslay Light

A Truck-Lite round LED light model 81380 shall be installed at the rear area of the crosslay to provide crosslay lighting per current NFPA 1901. The crosslay light shall be switched with the work light switch in the cab.

Engine Compartment Light

There shall be lighting provided in compliance with NFPA to illuminate the engine compartment area.

Pump Compartment Light

An incandescent light shall be provided in the pump compartment area for NFPA compliance. The light shall be wired to operate with the work light switch in the cab.

Cab Dome Lights (2)

A large (7") clear dome light with 3-position switch shall be installed above each front cab door.

Pump Panel Light Package

Six (6) LED pump panel lights shall be provided. The lights shall be located three (3) each side under a light shield directly above the left and right side pump panels. The lights shall be Tecniq EON with polished stainless steel housings. The light shields shall be formed from 14 gauge brushed finish stainless steel. The work light switch in the cab shall activate the lights when the park brake is set.

Q2B Siren Control

Driver's side floor mounted foot switch shall control the Q2B siren.

Back-Up Alarm

An electronic back-up alarm shall be supplied. The 97 dB alarm shall be wired into the chassis back-up lights to signal when the vehicle is in reverse gear.

Pioneer Flood Lights (2)

Whelen Pioneer Plus, model PFP1 12V LED light fixtures shall be supplied on a 3100 series top raise pole. The rectangular extruded light fixture with die cast end caps shall measure 8-3/16" wide by 4-5/8" high by 3" deep and have a white powder coat finish. The light fixture shall have a single panel (2) clusters of LED lamps with molded vacuum metalized reflector that draws 6 amps at 12.8 Vdc and produces 7,000 usable lumens. The lights shall be mounted on a locking swivel joint to allow the lights to be manually tilted up/down and locked in position by the operator. Handle standard.

Location: one (1) driver side of pump module rearward of TM control panel and one (1) officer side of pump module rearward of TM control panel.

DOT Required Drive Away Kit

Three (3) triangular warning reflectors with carrying case shall be supplied to satisfy the DOT requirement.

Un-Painted Pump/Pre-Connect Module(s)

All applicable pump application modules shall have a sanded finish (not painted job color). Includes upper and lower pump modules, crosswalk module and/or speedlay/pre-connect module (as applicable). Rear mounted body/pump module shall be painted job color.

Paint Body Small

The apparatus body shall be painted Sikken's FLNA3225 Red (Sikken's published). The paint process shall meet or exceed current state regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water, and soil. Contractor shall, upon demand, provide evidence that the manufacturing facility is in compliance with State EPA rules and regulations.

The aluminum body exterior shall have no mounted components prior to painting to assure full coverage of metal treatments and paint to the exterior surfaces of the body. Any vertically or horizontally hinged smooth-plate compartment doors shall be painted separately to assure proper paint coverage on body, door jambs and door edges.

Paint process shall feature Sikkens high solid LV products and be performed in the following steps:

- Corrosion Prevention – all aluminum surfaces shall be pre-treated with the Alodine 5700 conversion coating to provide superior corrosion resistance and excellent adhesion of the base coat.
- Sikkens Sealer/Primer LV - acrylic urethane sealer/primer shall be applied to guarantee excellent gloss hold-out, chip resistance and a uniform base color.
- Sikkens High Solid LVBT650 (Base coat) - a lead-free, chromate-free high solid acrylic urethane base coat shall be applied, providing excellent coverage and durability. A minimum of two (2) coats shall be applied.
- Sikkens High Solid LVBT650 (Clear coat) - high solid LV clear coat shall be applied as the final step in order to ensure full gloss and color retention and durability. A minimum of two (2) coats shall be applied.

Any location where aluminum is penetrated after painting, for the purpose of mounting steps, hand rails, doors, lights, or other specified components shall be treated at the point of penetration with a corrosion inhibiting pre-treatment (ECK Corrosion Control). The pre-treatment shall be applied to the aluminum sheet metal or aluminum extrusions in all locations where the aluminum has been penetrated. All hardware used in mounting steps, hand rails, doors, lights, or other specified components shall be individually treated with the corrosion inhibiting pre-treatment.

After the paint process is complete, the gloss rating of the unit shall be tested with a 20 degree gloss meter. Coating thickness shall be measured with a digital MIL gauge and the orange peel with a digital wave scan device.

Commercial Cab Paint

The International cab shall be painted by the chassis supplier. The cab paint color shall match FLNA3225 Red (Sikkens published).

Paint shall be warranted by the cab/chassis manufacturer.

Sign Gold Letters/Numbers

3" high Sign Gold letters/numbers to designate truck per Putnam County requirements.

Lettering/Numbers Shade and Outline

Letters/numbers shall be shaded and outlined in black to contrast the letters.

Customer Supplied Decals (2)

Manufacturer shall install two (2) customer supplied cab door decals, one each side.

Cab and Body Scotchlite Striping

A straight Scotchlite reflective stripe, 4" in width and white in color, shall be applied horizontally around the cab and body to comply with NFPA 1901.

Location: bottom of stripe flush with bottom of cab and straight back.

Rear Body Scotchlite Striping

A printed pattern Scotchlite chevron striping shall be provided on the rear of the apparatus in compliance with NFPA. The printed pattern shall consist of 6" Yellow/Red alternating stripes in an "A" pattern.

The striping shall be located on the rear compartment facing, rear panels and/or doors outboard of and above the rear compartment opening.

The vertical and horizontal rear body extrusions shall remain visible with a sanded finish.

Standard 1 Year Warranty

The apparatus manufacturer shall provide a full 1-year standard warranty. All components manufactured by the apparatus manufacturer shall be covered against defects in materials or workmanship for a 1-year period. All components covered by separate suppliers such as engines, transmissions, tires, and batteries shall maintain the warranty as provided by the component supplier. A copy of the warranty document shall be provided with the proposal.

10 Year 100,000 Mile Structural Warranty

The apparatus manufacturer shall provide a comprehensive 10 year/100,000 mile structural warranty. This warranty shall cover all structural components of the cab and/or body manufactured by the apparatus manufacturer against defects in materials or workmanship for 10 years or 100,000 miles, whichever occurs first. Excluded from this warranty are all hardware, mechanical items, electrical items, or paint finishes. A copy of the warranty document shall be provided with the proposal.

10 Year Stainless Steel Plumbing Warranty

The apparatus manufacturer shall provide a full 10-year stainless steel plumbing components warranty. This warranty shall cover defects in materials or workmanship of apparatus manufacturer designed foam/water plumbing system stainless steel components for 10 years. A copy of the warranty document shall be provided with the proposal.

10 Year Paint and Corrosion Warranty

The apparatus manufacturer shall provide a 10-year limited paint and corrosion perforation warranty. This warranty shall cover paint peeling, cracking, blistering, and corrosion provided the vehicle is used in a normal and reasonable manner.

The paint shall be prorated for 10 years as follows:

Topcoat & Appearance:		Coating System, Adhesion & Corrosion:	
Gloss, Color Retention, Cracking		Includes Dissimilar metal corrosion, Flaking, Blistering, Bubbling	
0 to 72 months	100%	0 to 36 months	100%
73 to 120 months	50%	37 to 84 months	50%
		85 to 120 months	25%

Corrosion perforation shall be covered 100% for 10 years. Corrosion perforation is defined as complete penetration through the exterior metal of the apparatus.

The warranty period shall begin upon delivery of the apparatus to the original user-purchaser. A copy of the warranty document shall be provided with the proposal.

UV paint fade shall be covered in a separate warranty supplied by Akzo Nobel (Sikkens) and shall be for a minimum of 10 years.

Electronic Manuals

Two (2) copies of all operator, service, and parts manuals MUST be supplied at the time of delivery in electronic format (CD-ROMs) -NO EXCEPTIONS! The electronic manuals shall include the following information:

- Operating Instructions, descriptions, specifications, and ratings of the cab, chassis, body, aerial (if applicable), installed components, and auxiliary systems.
- Warnings and cautions pertaining to the operation and maintenance of the fire apparatus and firefighting systems.
- Charts, tables, checklists, and illustrations relating to lubrication, cleaning, troubleshooting, diagnostics, and inspections.
- Instructions regarding the frequency and procedure for recommended maintenance.
- Maintenance instructions for the repair and replacement of installed components.
- Parts listing with descriptions and illustrations for identification.
- Warranty descriptions and coverage.

The CD-ROM shall incorporate a navigation page with electronic links to the operator`s manual, service manual, parts manual, and warranty information, as well as instructions on how to use the manual. Each copy shall include a table of contents with links to the specified documents or illustrations.

The CD must be formatted in such a manner as to allow not only the printing of the entire manual, but to also the cutting, pasting, or copying of individual documents to other electronic media, such as electronic mail, memos, and the like.

A find feature shall be included to allow for searches by text or by part number.

These electronic manuals shall be accessible from any computer operating system capable of supporting portable document format (PDF). Permanent copies of all pertinent data shall be kept on file at both the local dealership and at the manufacturer`s location.

NOTE: Engine overhaul, engine parts, transmission overhaul, and transmission parts manuals are not included.

Fire Apparatus Safety Guide

Fire Apparatus Safety Guide published by FAMA, latest edition. This safety manual is intended to point out some of the basic safety situations that may be encountered during the normal operation and maintenance of a fire apparatus and to suggest possible ways of dealing with these situations. This manual is NOT a substitute for the fire apparatus operator and maintenance manuals or commercial chassis manufacturer`s operator and maintenance manuals.

LOOSE EQUIPMENT LIST TO BE SUPPLIED WITH THE COMPLETED TRUCK

- 1-Alcolite 10' attic ladder with brackets
- 1-Alcolite 14' roof ladder
- 1-Alcolite 24' 2-section extension ladder
- 2-10' x 6" flexible hard suction hose
- 1-6" barrel strainer
- 1-Skull saver for the above ladders
- 500'-1.75" double jacket fire hose, yellow
- 1200'-3" double jacket fire hose, yellow
- 3-Akron 1763 1.75" Turbo Jet Nozzles with pistol grip
- 1-Akron 1725 2.5" Turbo Jet Nozzle
- 1-Akron 2393 2.5" Playpipe Nozzle
- 2-Trilock nozzle holders for the above 2.5" nozzles
- 2-2.5" screw down mounting plates
- 1-2.5" hydrant gate valve
- 1-2.5" x (2) 1.5" gated wye
- 1-Akron 3423 deck gun complete with top mount adapter, gun, stream shaper, stacked tips and ground mount
- 2-salvage covers 14' x 18' red vinyl
- 1-pick head axe with fiberglass handle and brackets with rubber cover
- 1-flat head axe with fiberglass handle and brackets
- 1-8' fiberglass pike pole with mounting brackets
- 1-10' fiberglass pike pole with mounting brackets
- 2-SL-44401 LED Streamlights, mounted
- 2-20 lb. ABC fire extinguishers and mounting brackets
- 4-MSA SCBA M7XT, High Pressure (4500 psi), Air frame harness and carrier, swiveling lumbar support back, 4500 psi 30 minute carbon stealth cylinder, "CBRN" push to connect mask mounted second stage regulator, ultra elite mask with installed heads up display system, internal hud receiver, integrated pass alarm system,
- P/NA-M7XT-HD11COB12AABO
- 4-MSA spare cylinders for above

- 1-MSA Evolution 5200 HD Thermal Imaging Camera, 2X zoom, heat seeker system, quick temp display and instruction manual
- 1-MSA truck mounting kit for above TIC with rechargeable batteries, truck charger and landyard, installed in the truck
- 4-Ziamatic air pack brackets mounted in air pack compartment
- 2-wrench holders, each complete with two (2) spanner and one (1) hydrant wrench
- 2-2.5" double female adapters
- 2-2.5" double male adapters
- 2-Zico NFPA wheel chocks, mounted
- 1-18" Tempest Positive Pressure Fan with Honda engine
- 2-Complete sets of protective clothing: Helmet, Advance coat & pants, suspenders, boots, gloves, hood
- 1-Truck radio locally provided and installed single head 110 watt
- 2-Truck portable radios locally provided and installed 272PK
- 1-Heartstart FrxAED with standard carrying case No. 861304
- 1-Heartstart Infant/Child Key for above AED No. 989803139311

ALL OF THE ABOVE WILL BE MOUNTED/INSTALLED AS NECESSARY UNDER THE DIRECTION OF THE FIRE CHIEF

PUTNAM COUNTY BOARD OF COMMISSIONERS



117 Putnam Drive, Suite A ♦ Eatonton, GA 31024
Tel: 706-485-5826 ♦ Fax: 706-923-2345 ♦ www.putnamcountyga.us

INSURANCE CLAUSE FOR ALL COUNTY CONTRACTS

The Contractor shall indemnify and hold harmless, to the fullest extent allowed by law, Putnam County, Georgia, its members, its officers and employees from and against all losses, claims, damages and expenses, including court-ordered attorney's fees, arising out of or resulting from the performance of the contract that results in bodily injury, sickness, disease, death or injury to or destruction of tangible property, including the loss of use resulting therefrom and is caused in whole or in part by the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

Contractor shall not commence work under this contract until he has obtained all insurance required under this Section and such insurance has been approved by PUTNAM COUNTY, nor shall the Contractor allow any subcontractor to commence work on his subcontract until all similar insurance required of the subcontractor has been so obtained and approved.

A. Workers' Compensation Insurance and Employer's Liability Insurance:

The Contractor shall take out and maintain during the life of this contract the applicable statutory Worker's Compensation Insurance, and in the case of any work sublet, the Contractor shall require the subcontractor similarly to provide statutory Worker's Compensation Insurance for the latter's employees. Coverage shall be provided by an insurance company authorized to write such insurance in all states where the Contractor will have employees located in the performance of this contract, and the Contractor shall require each of his subcontractors similarly to maintain Employer's Liability Insurance similarly to the Contractor.

Worker's Compensation – Required limits:

Coverage A – Coverage will include Statutory requirements

Coverage B – Employers Liability

\$100,000 Each Person

\$100,000 Each Person by Disease

\$500,000 Policy Limit – Disease

B. General Liability Insurance

1. The Contractor shall maintain during the life of this contract, Commercial General Liability Insurance, naming and protecting him and Putnam County against claims for damages resulting from (a) bodily injury, including wrongful death, and (b) property damage which may arise from operations under this contract whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them. The insurance requirements are:

Commercial General Liability with limits of:

\$1,000,000 Each Occurrence

\$1,000,000 Personal Injury

\$2,000,000 Products/Completed Operations

\$2,000,000 General Aggregate

2. Coverage shall include Contractual Liability coverage insuring the contractual exposure as addressed in this contract.
 3. There shall be no exclusion or limitation for the Explosion (X), Collapse (C) and Underground (U) hazards.
 4. **Putnam County shall be named as Additional Insured.**
 5. The Commercial General Liability coverage shall be endorsed with the Designated Construction Project(s) General Aggregate Limit endorsement.
- C. Automobile Liability Insurance: The Contractor shall take out and maintain during the life of the contract such Automobile Liability Insurance as shall protect him against claims for damages resulting from (a) bodily injury, including wrongful death, and (b) property damage which may arise from the operations of any owned, hired, or non-owned automobiles used by or for him in any capacity in connection with the carrying out of this contract. The minimum acceptable limits of liability to be provided by such Automobile Liability Insurance shall be as follows:

Bodily Injury and Property Damage \$1,000,000 Combined Single Limit

- D. Builder's Risk Insurance: ***(For Building Construction Contracts Only)*** Unless otherwise specified where buildings are to be constructed under this contract, the Contractor shall provide coverage for all direct physical loss (also known as "Special Causes of Loss"). Such insurance shall be written on a Replacement Cost basis covering such building in the amount equal to one-hundred percent (100%) of the contract amount (minimum) as specified herein. Losses, if any, shall be made payable to PUTNAM COUNTY and Contractor as their interest may appear. A certificate of insurance evidencing such insurance coverage shall be filed with PUTNAM COUNTY by the time work on the building begins and such insurance shall be subjected to the approval of PUTNAM COUNTY.
- E. Minimum Scope of Insurance: All Liability Insurance policies shall be written on an "Occurrence" basis only. All insurance coverage is to be placed with insurers authorized to do business in the State of Georgia.
- F. Certificate of Insurance: All Certificates of Insurance shall be filed with PUTNAM COUNTY on the standard ACCORD CERTIFICATE OF INSURANCE form showing the specific limits of insurance, coverage modifications and endorsements required by the preceding Sections A, B, C, D and showing PUTNAM COUNTY as an additional insured where required. Such certificate shall specifically state that insurance policies are to be endorsed to require the insurer to provide PUTNAM COUNTY thirty days notice of cancellation, non-renewal or any material reduction of insurance coverage.

The original certificate shall be provided to the Putnam County Board of Commissioners as designated and mailed to: 117 Putnam Drive, Suite A, Eatonton, GA 31024.

PUTNAM COUNTY BOARD OF COMMISSIONERS



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PROPOSAL FORM SOLICITATION 15-35001-001 PUTNAM COUNTY FIRE RESCUE TOP MOUNT PUMPER

To: The Putnam County Board of Commissioners

Pursuant to the invitation to bid and the instructions to Bidders and according to the specifications attached, the below stated bidder proposes the following prices for a Top Mount Pumper:

_____ does hereby propose the following:
(Name of Bidder)

\$ _____ (Base Bid)

OPTIONS:

- a) _____ \$ _____
- b) _____ \$ _____
- c) _____ \$ _____

Grand Total: \$ _____

MARK OUTSIDE OF BID ENVELOPE AS FOLLOWS:

The offeror's name, address, telephone number, the Solicitation # and name, the date Friday, August 21, 2015 at 9:00 a.m. and addressed as follows:

**Putnam County Fire Rescue Top Mount Pumper
Attn: Paul Van Haute, County Manager**

I hereby acknowledge receipt of the following checked amendments of the Proposal, Plans and/or Specifications, etc.:

Amendment No's: 1____, 2____, 3____, 4____, 5____, I understand that failure to confirm the receipt of amendments is cause for rejection of bids.

Signatures on the following page

The undersigned signatory for the bidder represents and warrants that he has full and complete authority to submit this proposal to the County and to enter into contract with Putnam County.

COMPANY NAME

BY (SIGNATURE)

STREET ADDRESS or P. O. BOX

(PRINT NAME)

CITY, STATE ZIP CODE

(TITLE)

TELEPHONE NO. FAX NO.

(DATE)

EMPLOYERS FEDERAL I.D. NO or
SOCIAL SECURITY NUMBER

Email

The Bidder(s) whose signature(s) appears on this document, having personally appeared before me, and being duly sworn, deposes and says that the above statements are true and correct.

Sworn to and subscribed before me this _____ day of _____, 20_____.

Notary signature: _____

My commission expires: _____ (seal)

PUTNAM COUNTY BOARD OF COMMISSIONERS



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Contractor Affidavit Under O.C.G.A. § 13-10-91(b)(1)

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of the Putnam County Board of Commissioners has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Contractor

Name of Project

Putnam County Board of Commissioners
Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on the _____ day of _____, 20____ in

_____(city), _____(state).

Signature of Authorized Officer or Agent

Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE
____ DAY OF _____, 20____

Notary Public Signature

My Commission Expires:

PUTNAM COUNTY BOARD OF COMMISSIONERS



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706-485-5826 ♦ 706-923-2345 fax ♦ www.putnamcountyga.us

Subcontractor Affidavit Under O.C.G.A. § 13-10-91(b)(3)

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with _____ (name of contractor) on behalf of the Putnam County Board of Commissioners has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned subcontractor will contract for physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the subcontractor with the information required by O.C.G.A. § 13-10-91(b). Additionally, the undersigned subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to the contractor within five business days of receipt. If the undersigned subcontractor receives notice of receipt of an affidavit from any sub-subcontractor that has contracted with a sub-subcontractor to forward, within five business days of receipt, a copy of such notice to the contractor. Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Subcontractor

Name of Project

Putnam County Board of Commissioners

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on the _____ day of _____, 20____ in

_____ (city), _____ (state).

Signature of Authorized Officer or Agent

Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE

_____ DAY OF _____, 20_____

Notary Public Signature

My Commission Expires:

PUTNAM COUNTY BOARD OF COMMISSIONERS



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706-485-5826 ♦ 706-923-2345 fax ♦ www.putnamcountyga.us

Sub-subcontractor Affidavit Under O.C.G.A. § 13-10-91(b)(4)

By executing this affidavit, the undersigned sub-subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with _____ (name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract) and _____ (name of contractor) on behalf of the Putnam County Board of Commissioners has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned sub-subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned sub-subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the sub-subcontractor with the information required by O.C.G.A. § 13-10-91(b). The undersigned sub-subcontractor shall submit, at the time of such contract, this affidavit to _____ (name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract). Additionally, the undersigned sub-subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to _____ (name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract). Sub-subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Sub-subcontractor

Name of Project

Putnam County Board of Commissioners

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on the _____ day of _____, 20____ in

_____ (city), _____ (state).

Signature of Authorized Officer or Agent

Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE
_____ DAY OF _____, 20_____

Notary Public Signature

My Commission Expires:

PUTNAM COUNTY BOARD OF COMMISSIONERS



117 Putnam Drive, Suite A ♦ Eatonton, GA 31024
706-485-5826 ♦ 706-923-2345 fax
www.putnamcountyga.us

SAVE Affidavit

(U.S. Citizens are only required to provide this affidavit one time)

By executing this affidavit under oath, as bidder to Putnam County Georgia as referenced in O.C.G.A. § 50-36-1, the undersigned applicant verifies one of the following with respect to my application for a public benefit:

Please check one box only

- 1) I am a United States citizen
- 2) I am a legal permanent resident of the United States
- 3) I am a qualified alien or non-immigrant under the Federal Immigration and Nationality Act with an alien number issued by the Department of Homeland Security or other federal immigration agency

My alien number issued by the Department of Homeland Security or other federal immigration agency is:

The undersigned applicant also hereby verifies that he or she is 18 years of age or older and has provided at least one secure and verifiable document, as required by O.C.G.A. § 50-36-1(e)(1), with this affidavit.

The secure and verifiable document provided with this affidavit can best be classified as:

In making the above representation under oath, I understand that any person who knowingly and willfully makes a false, fictitious, or fraudulent statement or representation in an affidavit shall be guilty of a violation of O.C.G.A. § 16-10-20, and face criminal penalties as allowed by such criminal statute.

Executed in _____ (city), _____ (state).

Signature of Applicant: _____

Printed Name: _____

Date _____

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE
_____ DAY OF _____, 20_____

Notary Public Signature: _____

Affix Notary stamp/seal here

My Commission Expires: _____