CALHOUN COUNTY

ST. MATTHEWS, S.C.

REQUEST FOR PROPOSAL

2106

SPECIFICATIONS FOR A 4 DOOR FREIGHTLINER PUMPER TANKER

CALHOUN COUNTY REQUEST FOR PROPOSALS

Calhoun County is requesting sealed Proposals from Qualified Company's for a Four Door Freightliner Pumper Tanker. Truck should be built to the following specifications provided in RFP. It is mandatory that all Companies who intend to submit a bid shall provide all materials requested in solicitation. **No bid will be accepted from Contractors failing to submit the required materials.**

DEADLINE FOR QUESTIONS:

Any questions regarding this RFP should be sent in writing to Gary Hardee, Chief, by email at ghardee66@gmail.com. **The deadline for the submission of all questions and inquiries concerning this RFP is Tuesday, October 12, 2021, at 12:00 pm.**

DEADLINE TO SUBMIT:

All RFP submittal must be in by 2:00 p.m., local time, **Friday, October 22**, **2021**.

Submit Proposals to: Marc M. Briggman, Procurement/Grants Coordinator Calhoun County Courthouse Annex 102 Courthouse Drive, Courthouse Annex, Suite 112 St. Matthews, SC 29135, Phone: (803) 655-5670 E-mail: mbriggman@calhouncounty.sc.gov. Bids maybe mailed to above address or electronically delivered through https://www.bidnetdirect.com/south-carolina/calhouncounty.

	Bidder Complies	
	Yes	No

SPECIFICATIONS FOR A 4 DOOR FREIGHTLINER PUMPER TANKER

Sealed bids will be received by Calhoun County for the furnishing of all necessary labor, equipment and material for the Fire Apparatus and other equipment as outlined in the following specifications.

INTENT OF SPECIFICATIONS

It shall be the intent of these specifications to cover the furnishing and delivery of a complete fire apparatus. These detailed specifications cover the requirements as to the type of construction, finish, equipment and tests to which the fire apparatus shall conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor.

Images and illustrative material in this specification are as accurate as known at the time of publication but are subject to change without notice. Images and illustrative material are for reference only and may include optional equipment and accessories and may not include all standard equipment.

INSTRUCTIONS TO BIDDERS

The purchaser's standards for bidding automotive fire apparatus must be strictly adhered to, and all bid forms and questions must be complete and submitted with the bid. **Omissions and variations shall result in immediate rejection of the bid.**

Bids shall only be considered from companies that have an established reputation in the field of fire apparatus construction. Furthermore, to insure fair, ethical, and legal competition, neither the original equipment manufacturer (O.E.M.) nor parent company of the O.E.M. shall have ever been fined or convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market (no exception).

If a bidder represents more than one fire apparatus company or brands of apparatus, they must only bid the top of the line that meets specification.

Each bidder shall furnish satisfactory evidence of their ability to construct the apparatus specified.

Any apparatus manufacturer or their parent company who has had a performance bond called in the last 10 years, shall not be eligible to bid. Any bids from these manufactures shall be immediately rejected (no exception).

Each bid shall be accompanied by a set of manufacturer's sets of specifications consisting of a detailed description of the apparatus, construction methods, and equipment proposed to which the apparatus furnished under contract shall conform. These specifications shall indicate size, type, model and make of all component’s parts and equipment, providing proof of compliance

	Bidder Complies	
	Yes	No
with each item in the departments advertised specifications. A letter only, even though written on company letterhead, shall not be enough. **An exception to this requirement shall not be acceptable.** In accordance with the current edition of NFPA 1901 standards, the proposal shall specify whether the fire department or apparatus dealership shall provide required loose equipment. The purchaser will utilize this advertised specification to compare all submitted bid proposals. To facilitate comparison, all bid proposal specifications shall be submitted in the same sequence as the advertised specification. Any bidder who fails to submit a set of bid proposal specifications, or who photo copies and submits these specifications as their own construction details will be considered non-responsive. This shall render such proposal ineligible for award. The purchaser's specification shall, in all cases, govern the construction of the apparatus, unless a properly documented exception or deviation was approved. Any bid indicating that the manufacturer's proposal shall supersede the purchaser's specification will be considered a complete substitute and immediately rejected. THE PURCHASER HAS THE RIGHT TO REJECT ANY and ALL BIDS WHICH DOS NOT MEET THESE SPECIFICATIONS AND IS THE SOLE DECIDER TO DEEM WHICH BID IS IN THE BEST INTEREST OF THE PURCHASER. **EXCEPTIONS** These specifications are based upon design and performance criteria which have been developed by the fire department as a result of extensive research and careful analysis. Subsequently these specifications reflect the only type of fire apparatus that is acceptable at this time and all specifications herein contained are considered as minimum. Therefore, exceptions to the specifications may not be accepted. Bidders shall indicate in the "yes/no" column if their bid complies on each item (paragraph) specified. If a product brand name is specified and is commercially available to all bidders, an exception to such items is not acceptable and such bid may be rejected. Exceptions shall be allowed if they are equal to or superior to that specified and provided they are listed and fully explained on a separate page. All deviations, no matter how slight, shall be clearly explained on a separate sheet, in the bid sequence, citing the page and paragraph number(s) of the specifications, how the proposal deviation is different, how the deviation meets or exceeds the specifications and why it is necessary, and entitled "EXCEPTIONS TO SPECIFICATIONS". The buyer reserves the right to require a bidder to provide proof in each		

	Bidder Complies	
	Yes	No

case that a substituted item is equal to that specified. The buyer shall be the sole judge in determination of acceptable substitutes.

Proposals that are found to have deviations without listing them or bids taking total exceptions to these advertised specifications will be rejected (no exception).

Bids not including all exceptions is a material breach and shall result in the bid being immediately rejected (no exception).

GENERAL DESIGN AND CONSTRUCTION

The prime vehicle manufacturer shall be responsible for the overall design so that the cab, chassis, pump module, and body are all integrated and function together as a complete fire apparatus, which shall also minimize third party involvement on engineering, design, service and warranty issues.

All bidders shall provide a list of the company, manufacturing location, and engineering source for each individual major component, including but not limited to the cab assembly, the pumphouse module assembly, the chassis assembly, body and electrical system.

The apparatus shall be designed with due consideration to distribution of load between the front and rear axles. Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Association.

The bidder shall make accurate statements as to the apparatus weight and dimensions.

QUALITY AND WORKMANSHIP

All steel welding shall follow American welding Society D1.1-2004 recommendations for structural steel welding. All aluminum welding shall follow American welding Society and ANSI D1.2-2003 requirements for structural welding of aluminum. All sheet metal welding shall follow American Welding Society B2.1-2000 requirements for structural welding of sheet metal. Flux core arc welding to use alloy rods, type 7000, American welding Society standards A5.20-E70T1. Employees classified as welders are tested and certified to meet the American Welding Society codes upon hire and every three (3) years thereafter. The manufacturer shall be required to have an American welding Society certified welding inspector in plant during working hours to monitor weld quality.

The manufacturer shall also be certified to operate a Quality Management System under the requirements of ISO 9001. These standards sponsored by the International organization for Standardization (ISO) specify the quality systems that shall be established by the manufacturer for design, manufacture, installation and service. A copy of the certificate of compliance shall be included with the bid.

	Bidder Complies	
	Yes	No

To demonstrate the quality of the product and service, each bidder shall provide a list of at least five (5) fire departments/municipalities in the region that have bought a second time from the representing dealer. **An exception to this requirement shall not be acceptable.**

DELIVERY

Apparatus, to insure proper break in of all components while still under warranty, **shall be delivered under its own power** - rail or truck freight shall not be acceptable. A qualified delivery representative shall deliver the apparatus and remain for a sufficient length of time to instruct personnel in proper operation, care and maintenance of the equipment delivered.

MANUALS AND SERVICE INFORMATION

The manufacturer shall supply at time of delivery, complete operation and maintenance manuals covering the complete apparatus as delivered. A permanent plate shall be mounted in the drivers compartment which specifies the quantity and type of fluid required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.

SAFETY VIDEO

Since video is much more effective than written documentation and can be replayed for new personnel and as a refresher for existing personnel, an apparatus safety video, in DVD format shall be provided at time of delivery. This video shall address key safety considerations for personnel to follow when they are driving, operating, and maintaining the apparatus. Safety procedures for the following shall be included on the video: vehicle pre-trip inspection, chassis operation, pump operation and maintenance.

PERFORMANCE TESTS AND REQUIREMENTS

A road test shall be conducted with the apparatus fully loaded and a continuous run of ten (10) miles or more shall be made under all driving conditions, during which time the apparatus shall show no loss of power or overheating. The transmission drive shaft or shafts, and rear axle shall run quietly and be free from abnormal vibration or noise throughout the operating range of the apparatus. Vehicle shall adhere to the following parameters:

A) The apparatus, when fully equipped and loaded, shall have not less than 25 percent nor more than 50 percent of the weight on the front axle, and not less than 50 percent nor more than 75 percent on the rear axle.

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

	Bidder Complies	
	Yes	No

C) The service brakes shall be capable of stopping a fully loaded vehicle in 35 feet at 20 mph on a level concrete highway. The air brake system shall conform to Federal Motor vehicle Safety Standards (FMVSS) 121.

D) The apparatus, fully loaded, shall be capable of obtaining a speed of 50 mph on a level concrete highway with the engine not exceeding the governed rpm (full load).

FAILURE TO MEET TEST

In the event the apparatus fails to meet the test requirements of these specifications on the first trial, second trials may be made at the option of the bidder within 30 days of the date of the first trial. Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection. failure to comply with changes to conform to any clause of the specifications, within 30 days after notice is given to the bidder of such changes, shall also be cause for rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the purchaser or its use by the purchaser during the above-specified period with the permission of the bidder shall not constitute acceptance.

SERVICE AND WARRANTY SUPPORT (DEALERSHIP)

TO INSURE FULL SERVICE AFTER DELIVERY, THE SELLING BIDDER/DEALERSHIP MUST BE CAPABLE OF PROVIDING SERVICE WHEN REQUIRED.

The bidder/dealership shall show that the company is in position to render prompt service and to furnish replacement parts.

Each bidder/dealership must be able to display that they are actively in the fire apparatus service business by operating a factory authorized service center and parts repository capable of satisfying the warranty service requirements and parts requirements of the vehicle(s) being purchased.

The bidder/dealership must state the location of this authorized service center. This service center must have a staff of factory-trained mechanics, well versed in all aspects of service for all major components of the apparatus. The service center must be within one hundred (100) miles of the Fire Department.

SERVICE AND WARRANTY SUPPORT (MANUFACTURER)

To provide an additional layer of service support, the successful manufacturer must also own a least two separate service facilities, one located in the northern portion of the US to service both Canada and the northern US states and one in the south to service the southern states.

The manufacturer shall stock 1 million parts equating to $5,000,000 of inventory dedicated to service and replacement parts to ensure quick response and minimize down time. Furthermore, the manufacturer shall house the inventory in a dedicated facility, with a dedicated shipping area

	Bidder Complies	
	Yes	No

that ensures service parts are given priority. The bidder shall provide detailed documentation of service and replacement part resources.

Parts identification shall be provided to both the dealer and the Fire Department through an on-line web-based application for the specific truck reflected in this specification. Access will be granted using the specific VIN number of the vehicle. The online web application will provide the ability to view complete bills of materials, digital photographs, parts drawings, assembly drawings, and access to all current operation, maintenance and service publications.

The manufacturer must also maintain a 24 hour/ 7 day a week, toll free emergency hot line.

The manufacturer shall employ a staff of adequate size (a minimum of 30 personnel) specifically dedicated to providing customer support and parts for the fielded fleet of vehicles it has produced.

The manufacturer must be capable of providing both in-house and on-site service for the apparatus.

The manufacturer shall offer regional factory hands-on repair and maintenance training classes.

The manufacturer shall employ a minimum of four certified EVT technicians on staff, not only providing technical expertise in the repair of fire apparatus, but also demonstrating the commitment to service after the sale.

LIABILITY

The successful bidder shall defend any and all suits and assume all liability for the use of any patented process including any device or article forming a part of the apparatus or any appliance furnished under the contract.

INSURANCE PROVIDED BY BIDDER

COMMERCIAL GENERAL LIABILITY INSURANCE

The successful bidder shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of commercial general liability insurance:

Each Occurrence$1,000,000

Products/Completed Operations Aggregate$1,000,000

Personal and Advertising Injury$1,000,000

General Aggregate$2,000,000

	Bidder Complies	
	Yes	No

Coverage shall be written on a Commercial General Liability form. The policy shall be written on an occurrence form and shall include Contractual Liability coverage for bodily injury and property damage subject to the terms and conditions of the policy. The policy shall include Owner as an additional insured when required by written contract.

COMMERCIAL AUTOMOBILE LIABILITY INSURANCE

The successful bidder shall, during the performance of the contract, keep in force at least the following minimum limits of commercial automobile liability insurance and coverage shall be written on a Commercial Automobile liability form:

Each Accident Combined Single Limit:$1,000,000

UMBRELLA/EXCESS LIABILITY INSURANCE

The successful bidder shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of umbrella liability insurance:

Aggregate:$3,000,000

Each Occurrence:$3,000,000

The umbrella policy shall be written on an occurrence basis and at a minimum provide excess to the bidder's General Liability and Automobile Liability policies.

The required limits can be provided by one (1) or more policies provided all other insurance requirements are met.

Coverage shall be provided by a carrier(s) rated A- or better by A.M. Best.

All policies shall provide a 30-day notice of cancellation to the named insured. The Certificate of Insurance shall provide the following cancellation clause: Should any of the above described polices be cancelled before the expiration date thereof, notice shall be delivered in accordance with the policy provisions.

Bidder agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with the bid. The certificate shall show the purchaser as certificate holder.

	Bidder Complies	
	Yes	No

INSURANCE PROVIDED BY MANUFACTURER

PRODUCT LIABILITY INSURANCE

The manufacturer shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of Product Liability insurance:

Each Occurrence$1,000,000

Products/Completed Operations Aggregate$1,000,000

Coverage shall be written on a Commercial General Liability form. The policy shall be written on an occurrence form. The manufacturer's policy shall include the owner as additional insured when required by written contract between the Owner and an authorized dealer.

UMBRELLA/EXCESS LIABILITY INSURANCE

The manufacturer shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of umbrella liability insurance:

Each Occurrence:$25,000,000

Aggregate:$25,000,000

The umbrella policy shall be written on an occurrence basis and provide excess to the manufacturer's General Liability/Products policies.

The required limits can be provided by one (1) or more policies provided all other insurance requirements are met.

Coverage shall be provided by a carrier(s) rated A- or better by A.M. Best.

All policies shall provide a 30-day notice of cancellation to the named insured. The Certificate of Insurance shall provide the following cancellation clause: Should any of the above described polices be cancelled before the expiration date thereof, notice shall be delivered in accordance with the policy provisions.

Manufacturer agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with the bid. The certificate shall show the purchaser as the certificate holder.

The bidder shall state the location of the factory where the apparatus is to be built.

	Bidder Complies	
	Yes	No

NFPA 2016 STANDARDS

This apparatus specification includes a commercial chassis that has not been certified to meet the requirements of NFPA 1901 by the chassis manufacturer. Although this chassis may comply with certain aspects of the standard, has not received certification from this chassis manufacturer that all criteria have been met. The body as built by the manufacturer must comply with the NFPA standards effective January of 2016.

Certification of slip resistance of all stepping, standing and walking surfaces must be supplied with delivery of the apparatus.

All horizontal surfaces designated as a standing or walking surface that are greater than 48.00" above the ground must be defined by a 1.00" wide line along its outside perimeter. Perimeter markings and designated access paths to destination points shall be identified on the customer approval print and are shown as approximate. Actual location(s) shall be determined based on materials used and actual conditions at final build. Access paths may pass through hose storage areas and opening or removal of covers or restraints may be required. Access paths may require the operation of devices and equipment such as the aerial device or ladder rack.

A plate that is highly visible to the driver while seated shall be provided. This plate shall show the overall height, length, and gross vehicle weight rating.

The manufacturer shall have programs in place for training, proficiency testing and performance for any staff involved with certifications.

An official of the company shall designate, in writing, who is qualified to witness and certify test results.

NFPA COMPLIANCY

Apparatus proposed by the bidder shall meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in the current edition at time of contract execution. Fire Department's specifications that differ from NFPA specifications shall be indicated in the proposal as "non-NFPA."

PUMP TEST

The rated water pump shall be tested, approved, and certified by an ISO certified independent third-party testing agency at the manufacturer's expense. The test results, along with the pump manufacturer's certification of hydrostatic test, the engine manufacturer's certified brake horsepower curve, and the manufacturer's record of pump construction details shall be forwarded to the Fire Department.

	Bidder Complies	
	Yes	No

GENERATOR TEST

If the unit has a generator, the generator shall be tested, approved, and certified by an ISO certified independent third-party testing agency at the manufacturer's expense. The test results shall be provided to the Fire Department at the time of delivery.

EQUIPMENT ALLOWANCE

NFPA 1901 section 12.1 requires a miscellaneous equipment allowance of 2500 pounds for pumper fire apparatus with compartment space of 250 cubic feet or greater, or 2000 pounds with compartment space of less than 250 cubic feet of space.

Per the customer's request the maximum equipment allowance on this apparatus shall be 1500 pounds. The apparatus shall be non-compliant to NFPA standards at time of contract execution.

BID BOND

All bidders shall provide a bid bond as security for the bid in the form of a 10% bid bond to accompany their bid. This bid bond shall be issued by a Surety Company who is listed on the U.S. Treasury Departments list of acceptable sureties as published in Department Circular 570. The bid bond shall be issued by an authorized representative of the Surety Company and shall be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond shall include language, which assures that the bidder/principal shall give a bond or bonds as may be specified in the bidding or contract documents, with good and sufficient surety for the faithful performance of the contract, including the Basic One (1) Year Limited Warranty, and for the prompt payment of labor and material furnished in the prosecution of the contract.

Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle shall apply only to the Basic One (1) Year Limited Warranty for such vehicle. Any surety bond related to the sale of a vehicle shall not apply to any other warranties that are included within this bid (OEM or otherwise) or to the warranties (if any) of any third party of any part, component, attachment or accessory that is incorporated into or attached to the vehicle. In the event of any contradiction or inconsistency between this provision and any other document or assertion, this provision shall prevail.

PERFORMANCE BOND NOT REQUESTED

A performance bond shall not be included. If requested at a later date, one shall be provided to you for an additional cost and the following shall apply:

The successful bidder shall furnish a Performance and Payment bond (Bond) equal to 100 percent of the total contract amount within 30 days of the notice of award. Such Bond shall be in a form acceptable to the Owner and issued by a surety company included within the Department of Treasury's Listing of Approved Sureties (Department Circular 570) with a minimum A.M.

	Bidder Complies	
	Yes	No

Best Financial Strength Rating of A and Size Category of XV. In the event of a bond issued by a surety of a lesser Size Category, a minimum Financial Strength rating of A+ is required.

Bidder and Bidder's surety agree that the Bond issued hereunder, whether expressly stated or not, also includes the surety's guarantee of the vehicle manufacturer's Bumper to Bumper warranty period included within this proposal. Owner agrees that the penal amount of this bond shall be simultaneously amended to 25 percent of the total contract amount upon satisfactory acceptance and delivery of the vehicle(s) included herein. Notwithstanding anything contained within this contract to the contrary, the surety's liability for any warranties of any type shall not exceed three (3) years from the date of such satisfactory acceptance and delivery, or the actual Bumper to Bumper warranty period, whichever is shorter.

APPROVAL DRAWING

A drawing of the proposed apparatus shall be provided for approval before construction begins. The sales representative shall also have a copy of the same drawing. The finalized and approved drawing shall become part of the contract documents. This drawing shall indicate the chassis make and model, location of the lights, siren, horns, compartments, major components, etc.

A "revised" approval drawing of the apparatus shall be prepared and submitted by the manufacturer to the purchaser showing any changes made to the approval drawing.

ELECTRICAL WIRING DIAGRAMS

Two (2) electrical wiring diagrams, prepared for the body as it interfaces with the commercial chassis, shall be provided.

FINAL INSPECTION

A Final Inspection conference to the manufacturing facility for Four (4) Fire Department personnel will be provided. Travel expenses, meals, lodging shall be included. The sales representative will be present to assist in the process.

CONSTRUCTION PROGRESS PHOTOS

Weekly photographs of the apparatus or the major components as they are being constructed shall be provided. The photos shall commence at the beginning of the manufacturing process and shall continue until just prior to the final inspection. There shall be approximately Eight (8) weekly reports illustrating the progress of the apparatus through the course of each week. Special attention shall be given to show the unique features and aspects of the apparatus as construction progresses.

ORIENTATION TRAINING

There shall be one (1) class held at the Fire Department by a factory certified trainer. The class shall consist of basic orientation of the apparatus and shall last approximately 3 hours. The class shall cover basic operations of cab, chassis, pump, aerial, and body components that are included on the new apparatus.

	Bidder Complies	
	Yes	No

CHASSIS
The chassis shall be a Freightliner, Model M2, 106MD Conventional Chassis, supplied with the following equipment:

WHEELBASE
The wheelbase of the vehicle shall be no greater than 259.50".

GVW RATING
The gross vehicle weight rating shall be a minimum of 47,000 lbs.

FRAME
The frame rails shall be formed from 120,000 psi yield, heat treated alloy steel. The frame rails shall be E-coated prior to painting.

FRAME LINER
An 0.25" inner frame reinforcement shall be provided.

The frame section properties shall be:

- Section Modulus:26.80 cubic inch, per rail
- RBM:3,217,000 in-lb., per rail
- Yield Strength: 120,000 psi, per rail

FRONT AXLE
Front axle shall be an "I" beam type, made of forged steel. It shall have a ground rating capacity of 16,000 pounds.

FRONT SUSPENSION
Taper leaf spring

Capacity at Ground: 16,000 lb.

Shock absorbers shall be provided on the front axle.

FRONT BRAKES
The front brakes shall be S-Cam, 16.50" x 6.00". The front brakes shall be provided with automatic slack adjusters.

TIRE BRAND
The default brand of tire for the commercial chassis manufacturer for this apparatus is Michelin.

	Bidder Complies	
	Yes	No

However, it is understood that the commercial chassis manufacturer reserves the right to substitute brands and models of tire as may be available at the factory on the date of manufacture. They shall provide the proper tread style and weight rating for the position in which the tire is installed.

TIRES, FRONT

Front tires shall be 315/80R22.50, radial tires with a tread pattern suitable for the steering axle position. The capacity of the tires shall meet or exceed the rating of the axle and/or suspension.

WHEELS, FRONT

Wheels for the front axle shall be 22.50" x 9.00" polished aluminum disc.

REAR AXLE

The single reduction rear axle shall be a Meritor™, Model RS-30-185, with a ground rating capacity of 31,000 lb.

PARKING BRAKE

The parking brake shall be spring set and located on the rear axle service brake.

Rear axle brakes shall be 16.50" x 7.00", S-Cam drum type brakes. Automatic slack adjusters shall be provided.

REAR AXLE RATIO

NFPA 1901, 2016 edition, section 4.15.2 requires that the maximum top speed of fire apparatus with a GVWR over 26,000 lb. shall not exceed either 68 mph or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.

NFPA 1901, 2016 edition, section 4.15.3 requires that if the combined water tank and foam agent tank on the fire apparatus exceed 1250 gallons or the GVWR of the vehicle is over 50,000 lb., the maximum top speed of the apparatus shall not exceed either 60 mph or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.

It is the intention of the standard to improve safety by limiting the speed of all apparatus to 68 mph, and tankers or heavy apparatus to 60 mph. By requesting an exception to this requirement, the purchasing authority is consciously choosing to operate their apparatus at speeds above the limits designated as safe speeds by the NFPA Technical Committee on Fire Department Apparatus.

The top speed of the apparatus as manufactured exceeds the NFPA requirements. Per fire department specification of a top speed that exceeds NFPA requirements, the apparatus shall be non-compliant to NFPA 1901 standards at time of contract execution.

	Bidder Complies	
	Yes	No

A rear axle ratio shall be furnished to allow the vehicle to reach an approximate top speed of 64 to 67 MPH.

REAR SUSPENSION
The rear suspension shall be leaf spring type with a capacity at ground level of 31,000 lbs. Auxiliaries shall be included.

DUST SHIELDS
The front and rear brakes shall be provided with dust shields.

NO-SPIN DIFFERENTIAL
The rear axle shall be equipped with a driver controlled differential lock.

TIRES, REAR
Rear tires shall be 315/80R22.50 radial tires with a traction tread pattern suitable for the drive axle position. The tires shall meet or exceed the weight rating of the axle and/or suspension.

WHEELS, REAR
The rear wheels shall be aluminum 22.50" x 9.00" disc.

TIRE PRESSURE MANAGEMENT
There shall be a Real Wheels LED Air Secure™ tire alert pressure management system provided, that shall monitor each tire's pressure. A sensor shall be provided on the valve stem of each tire for a total of six (6) tires.

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

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

FRONT HUB COVERS
Stainless steel hub covers shall be provided on the front axle. An oil level viewing window shall be provided.

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

CHROME LUG NUT COVERS
Chrome lug nut covers shall be supplied on front and rear wheels.

	Bidder Complies	
	Yes	No

MUD FLAPS
Mud flaps shall be installed behind the front and rear wheels of the apparatus.

WHEEL CHOCKS
There shall be one (1) pair of folding Ziamatic, Model SAC-44-E, aluminum alloy, Quick-Choc wheel blocks with easy-grip handle provided.

Wheel Chock Brackets
There shall be one (1) pair of Zico, Model SQCH-44-H, horizontal mounting wheel chock brackets provided for the Ziamatic, Model SAC-44-E, folding wheel chocks. The brackets shall be made of aluminum and consist of a quick release spring loaded rod to hold the wheel chocks in place. The brackets shall be mounted one (1) forward and one (1) rearward of the left side rear tire.

ANTI-LOCK BRAKE SYSTEM
The vehicle shall be equipped with an anti-lock braking system. The ABS shall provide anti-lock braking control on both the front and rear wheels. It shall be a digitally controlled system that utilizes microprocessor technology to control the anti-lock braking system. Each wheel shall be monitored by the system. When any wheel begins to lockup, a signal shall be sent to the control unit. This control unit then shall reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.

The system shall include Automatic Traction Control (ATC).

The system shall include Electronic Stability Control (ESC). When instability is detected, the ESC system shall automatically apply brakes to individual wheels (with no intervention from the driver) and may also reduce engine torque to help keep the vehicle on track.

AIR COMPRESSOR, BRAKE SYSTEM
The air compressor shall have an output of 18.7 cubic feet per minute.

AIR DRYER
An air dryer with a heater shall be provided. Other features of this air dryer include:

- Desiccant style filter

- In-line filtration system

- Automatic purge valve

ENGINE

- Model: Electronic Cummins L9

	Bidder Complies	
	Yes	No

- Number of Cylinders: Six (6)
- Bore and Stroke: 4.49" x 5.69"
- Displacement: 543 cubic inches (8.9 Liter)
- Rated Brake Horsepower: 360 at 2200 rpm
- Peak Torque: 1150 at 1200 rpm
- Governed rpm: 2200
- Turbocharger
- Charge Air Cooled
- Fuel System: Hydraulically Actuated, Electronically Controlled Unit Injectors (HEUI)

ENGINE ACCESSORIES

- Air Cleaner: Dry type, with restriction indicator in cab
- Fuel Filters: Dual, with check valve
- Governor: Limiting speed type
- Lube Oil Cooler
- Lube Oil Filter: Full flow
- Starting Motor: 12-volt
- Oil Fill and Level Gauge

RADIATOR

- Pressurized System, Tube and Fin
- Deaeration Tank and Sight Glass
- Anti-Freeze Protection -30 Degrees Fahrenheit

HIGH IDLE

A high idle switch shall be provided on the instrument panel inside the cab. Activating the switch shall cause the vehicle to automatically maintain a preset engine rpm.

The high idle switch shall be operational only when the parking brake is on and the truck transmission is in neutral. A green indicator light shall be provided adjacent to the switch. The light shall be labeled "OK to Engage High Idle."

ENGINE EXHAUST BRAKE

An exhaust brake with an integral variable geometry turbo charger (VGT) shall be provided. The control shall be located on the instrument panel within easy reach of the driver.

AIR INTAKE, W/EMBER SEPARATOR

The air inlet shall be equipped with a stainless-steel mesh to separate water and embers from the air intake system such that particulate matter larger than 0.039" (1.0 mm) in diameter cannot reach the air filter element.

	Bidder Complies	
	Yes	No

This shall comply with NFPA 1901 and 1906 standards.

EXHAUST SYSTEM

The exhaust system shall include a diesel particulate filter (DPF) and a selective catalytic reduction (SCR) device to meet current EPA standards. The DPF and SCR shall be mounted horizontally outside of the frame rails in the right-side front step area.

EXHAUST MODIFICATIONS

The exhaust shall terminate with a horizontal tailpipe and diffuser ahead of the right-side rear wheels.

A heat deflector shield shall be provided where the tail pipe is routed under any side compartmentation.

All modifications shall be approved by the chassis engine manufacturer and/or the chassis OEM. Exhaust treatment devices shall not be altered.

COOLANT LINES

Gates Blue Stripe rubber hose shall be used for all engine coolant lines installed by the chassis manufacturer.

Hose clamps shall be of a design commonly called constant torque type to prevent coolant leakage. They shall react to temperature changes in the cooling system and expand or contract accordingly while maintaining a constant clamping pressure on the hose.

FUEL TANK

A 50-gallon fuel tank shall be provided and mounted at the left-hand cab step. The tank shall be constructed of aluminum.

DIESEL EXHAUST FLUID TANK

A diesel exhaust fluid (DEF) tank shall be provided and mounted on the left side, below the cab.

The tank shall be sized by the chassis manufacturer based on the engine provided. It shall include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.

FUEL PRIMING PUMP

A Cummins automatic electronic fuel priming pump shall be integrated as part of the engine.

AUXILIARY FUEL COOLING SYSTEM

A supplementary fuel cooling system shall be provided to allow the use of water from the discharge side of the pump for cooling the chassis engine fuel. The heat exchanger shall be a

	Bidder Complies	
	Yes	No

cylindrical type and shall be a separate unit. The cooler shall operate any time the pump is discharging water and shall be plumbed to the master drain valve.

TRANSMISSION

An Allison, model 3000 EVS, electronic torque converting automatic transmission shall be provided. To qualify for the EVS rating, the transmission shall be filled with synthetic transmission fluid.

Two (2) PTO openings shall be located on left and right side of the converter housing (positions 8 o'clock and 4 o'clock).

A transmission temperature gauge or warning light shall be installed on cab instrument panel.

TRANSMISSION SHIFT CONTROL

A push button shift module shall be mounted to right of driver. Shift position indicator shall be indirectly lit for after dark operation.

The transmission shall be a five (5)-speed.

TRANSMISSION COOLER

A transmission oil cooler shall be provided in a tank of the radiator.

DRIVELINE

Drivelines shall be a heavy-duty metal tube equipped with universal joints properly sized for the application. A splined slip joint shall be provided in each driveshaft.

The driveline shall be prepped by the chassis manufacturer for the installation of a mid-ship split shaft pump.

STEERING

The steering system shall be hydraulically driven. The steering column shall have an adjustable tilt and telescope feature.

BUMPER

A one (1)-piece, 10.00" high, stainless steel bumper shall be attached to the front of the frame.

A 9.00" channel shall be mounted directly behind the bumper for additional strength.

The bumper shall be extended 22.00" from the front face of the cab.

GRAVEL PAN

A gravel pan, constructed of bright aluminum treadplate, shall be furnished between the bumper and cab face. The gravel pan shall be properly supported from the underside to prevent flexing and vibration of the aluminum treadplate.

	Bidder Complies	
	Yes	No

CENTER HOSE TRAY

A hose tray, constructed of aluminum, shall be placed in the center of the bumper extension.

The tray shall have a capacity of 150' of 1.75" double jacket cotton-polyester hose.

Black rubber grating shall be provided at the bottom of the tray. Drain holes are also provided.

Center Hose Tray Cover

A bright aluminum treadplate cover shall be provided over the center hose tray.

The cover shall be "notched" allowing the hose to be pre-connected to hose connection.

The cover shall be attached with a stainless-steel hinge.

A D-ring latch shall secure the cover in the closed position and a pneumatic stay arm shall hold the cover in the open position. The arm shall be located on the PS.

TOW HOOKS

Two (2) chromed steel tow hooks shall be installed under the bumper and attached to the front frame members. The tow hooks shall be designed and positioned to allow up to a 6,000 lb. straight horizontal pull in line with the centerline of the vehicle. The tow hooks shall not be used for lifting of the apparatus.

CAB

A 4-door, high-roof cab shall be provided. The cab and doors shall be of an aluminum construction.

Exterior Styling

Aerodynamic hood and windshield

Tinted Glass in all Windows

Fiberglass hood with mounted plastic grille

Single 63"x14" rear window (unless deleted by the customer - option elsewhere in specification)

Interior

Air bag rear cab suspension

Gray vinyl mats

	Bidder Complies	
	Yes	No

Forward roof mounted console

Two (2) dash-mounted cup holders, right-hand and left-hand

Gray Vinyl Upholstery

Dual Sun visors

Fresh Air Heater and Defroster

CAB INTERIOR W/CONVENIENCE PACKAGE

The cab upholstery shall be gray vinyl.

The cab interior shall include wood grain driver and center instrument panels, molded plastic door panels with vinyl inserts and brushed aluminum lower door kick plates.

CAB GRILLE - CHROMED

The cab grille shall be a chromed high impact plastic with a horizontal rib design. The headlight bezels and air intake grilles shall also have a chromed finish. The grille shall tilt with the hood.

MIRRORS

West Coast style heated, remote operated mirrors constructed from a molded composite material with a bright finish shall be provided. A heated 8.00" convex mirror shall be included below the primary mirrors. An auxiliary down view mirror shall be included on the passenger side.

CAB ACCESS STEPS

The cab access steps shall be provided by the apparatus manufacturer. The steps shall be a two (2) step design fabricated from bright aluminum treadplate. The step assembly shall enclose the area under the cab and be continuous from front to rear. The fuel and DEF tank fill caps shall be exposed for refueling if located under the cab. Access shall be provided to inspect the chassis batteries when located under the cab.

COMPARTMENT, STORAGE

A storage compartment shall be provided under the crew cab in the left side step area. An aluminum treadplate drop-down door with a rubber seal shall be provided on the compartment. The door shall have a single pan construction.

STEP LIGHTS

There shall be four (4) white LED step lights provided. There shall be one (1) light installed at each cab door, one (1) light per doorstep.

In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a

	Bidder Complies	
	Yes	No

minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.

The lights shall be activated when the adjacent door is opened.

POWER WINDOWS AND LOCKS

The cab doors shall have electrically powered windows and locks.

DAYTIME RUNNING LIGHTS

The chassis shall be provided with daytime running lights.

DELETE REAR CAB WINDOW

The chassis manufacturer shall provide a metal panel in place of the rear window in the cab.

AIR CONDITIONING

An air conditioner shall be provided that is integral with heater and defroster system.

ENGINE COMPARTMENT LIGHTS

Two (2) engine compartment lights shall be installed under the engine hood, of which the switches are an integral part.

STORAGE CONSOLE

There shall be a console located between the front seats with room for map storage, the siren head and a radio. There shall be four (4) sections for map storage to the rear of the console. Each map storage section shall be approximately 4.00" wide x 13.00" long x 12.25" deep. The console shall be constructed of smooth aluminum and painted black.

SIDE ROLL PROTECTION

The cab shall be equipped with a side roll protection system and shall include the following:

- A supplemental restraint system (SRS) control module shall be installed beneath the driver seat. The SRS control module shall perform real time diagnostics of all critical subsystems and shall monitor inputs immediately before and during a side roll event.
- A fault-indicating light shall be provided on the vehicle's instrument panel allowing the driver to monitor the operational status of the SRS system.
- Air bags shall be provided in the outboard bolster of outboard seat backs to provide a cushion between the occupant and the vehicle interior surfaces (cab wall, window, B-pillar, etc.) during a side roll event.
- Air suspension seats shall be equipped with a pyrotechnic device to compress the suspension to the lowest travel position during a side roll event.
- Seat belt assemblies shall be provided with a buckle pre-tensioner to remove slack from the seat belt during a side roll event.

	Bidder Complies	
	Yes	No

The SRS system shall provide protection during 90-degree roll to either side. The system shall analyze the vehicle's angle and rate of roll to determine the optimal activation of the advanced occupant restraints.

The SRS control module shall deploy the following components in the event of a side roll:

- Air bags mounted in the outboard bolster of outboard seat backs.
- The pull-down pyrotechnic device shall compress the seat air suspension to the lowest travel position.
- Seat belt buckle pretensioners shall remove slack in the webbing to reduce the motion of the occupant during a roll event.

SEATING CAPACITY

The seating capacity in the cab shall be five (5).

DRIVER SEAT

A seat shall be provided in the cab for the driver. The seat shall be a high back air suspension seat. The seat shall include the following features incorporated into the side roll protection system:

- Side air curtain shall be mounted integral to the outboard bolster of the seat back. The air curtain shall be covered by a decorative panel when in the stowed position.
- A suspension seat safety system shall be included. When activated in the event of a side roll, this system shall pretension the seat belt and retract the seat to its lowest travel position.
- Slides for fore/aft adjustment
- Recline feature

The seat shall be furnished with a 3-point, shoulder type seat belt.

OFFICER SEAT

A seat shall be provided in the cab for the passenger. The seat shall be a high back style non-suspension seat. The seat shall include the following features incorporated into the side roll protection system:

- Side air curtain shall be mounted integral to the outboard bolster of the seat back. The air curtain shall be covered by a decorative panel when in the stowed position.
- A seat riser that can be used for storage
- Slides for fore/aft adjustment

	Bidder Complies	
	Yes	No

- Recline feature

The seat shall be furnished with a 3-point, shoulder type seat belt.

Both seats shall be covered in a vinyl material.

SEATING (CREW CAB)

There shall be three (3) forward facing seats provided in the crew cab. The seat back shall be an SCBA back style with a fixed recline angle.

The outboard seats shall include the following features incorporated into the side roll protection system:

- Side air curtain shall be mounted integral to the outboard bolster of the seat back of the two outboard seats. The air curtain shall be covered by a decorative panel when in the stowed position.
- A seat safety system shall be included. When activated, this system shall pretension the seat belt around the occupant to firmly hold them in place in the event of a side roll.

The center seat shall be furnished with a 3-point, shoulder type seat belt. When activated, this system shall pretension the seat belt around the occupant to firmly hold them in place in the event of a side roll.

Seats shall be covered in a vinyl material.

SEAT BELT WEB LENGTH

NFPA 14.1.3.2 and 14.1.3.3 requires effective seat belt web length for a Type 1 lap belt for pelvic restraint to be a minimum of 60 in., and a Type 2 pelvic and upper torso restraint-style seat belt assembly to be a minimum of 110 in.

Per Fire Department specification of a commercial chassis, this apparatus shall have seat belts of the required length. These belts shall provide sufficient length for large firefighters in bunker gear. This apparatus shall be compliant to NFPA standards effective at time of contract execution.

SEAT BELTS

All seating positions in the cab and crew cab shall have highly visible (orange) seat belts.

HELMET STORAGE

Helmet storage shall be located in a body compartment.

	Bidder Complies	
	Yes	No

HAND HELD LIGHT

There shall be two (2) 12v Stream light, Fire Vulcan, Model #44451, lights mounted One in LS3 on front wall above shelf and one in RS3 on front wall above shelf as high as possible.

Each light housing shall be orange in color and be provided with a C4 LED and two (2) "ultra-bright blue tail light LEDs" The tail light LEDs shall have a dual mode of blinking or steady.

Vehicle mount with 12VDC direct wire charging rack.

Quick release buckle strap shall be included.

CAB INSTRUMENTS

- Engine Temperature Gauge and Warning Buzzer

- Engine Oil Pressure Gauge and Warning Buzzer

- Speedometer with Odometer

- Engine Tachometer

- Engine Hour meter

- Fuel Level Gauge

- DEF Level Gauge and Warning Lamp

- Voltmeter: Low voltage red warning light and audible alarm

- Air Brake Pressure Gauge

- Air Restriction Indicator

- Circuit Breakers: For overload protection of electric circuits

- Ignition Switch: Keyless type

EMERGENCY SWITCH PANEL

An emergency switch panel shall be provided in the cab. The switch panel shall be located overhead and on the cab instrument panel.

"DO NOT MOVE APPARATUS" INDICATOR

A flashing red indicator light (located in the driving compartment) shall be illuminated automatically per the current edition of NFPA. The light shall be labeled "Do Not Move Apparatus If Light Is On".

	Bidder Complies	
	Yes	No

The same circuit that activates the Do Not Move Apparatus indicator shall activate a steady tone alarm when the parking brake is released.

OPEN DOOR INDICATOR LIGHT

A red "open door" indicator light shall be provided inside the cab, in clear view of the driver, to warn of an open compartment door.

WIPER CONTROL

Wiper control shall include an intermittent feature and windshield washer controls.

RADIO

An AM/FM/Weather band stereo radio with auxiliary inputs and J1939 connectivity shall be provided. It shall also include two (2) speakers and a clock.

VEHICLE DATA RECORDER

There shall be a vehicle data recorder (VDR) capable of reading and storing vehicle information provided.

The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A USB cable can be used to connect the VDR to a laptop to retrieve required information. The program to download the information from the VDR shall be available to download on-line.

The vehicle data recorder shall be capable of recording the following data via hardwired and/or CAN inputs:

- Vehicle Speed - MPH
- Acceleration - MPH/sec
- Deceleration - MPH/sec
- Engine Speed - RPM
- Engine Throttle Position - % of Full Throttle
- ABS Event - On/Off
- Seat Occupied Status - Yes/No by Position
- Seat Belt Buckled Status - Yes/No by Position
- Master Optical Warning Device Switch - On/Off
- Time - 24 Hour Time
- Date - Year/Month/Day

The system shall also be capable of no additional functionality required.

	Bidder Complies	
	Yes	No

An additional input shall be included with this system. When the VDR is active, this input shall not be required.

SEAT BELT MONITORING SYSTEM

A seat belt monitoring system (SBMS) shall be provided. The SBMS shall be capable of monitoring up to six (6) seating positions indicating the status of each seat position per the following:

- Seat Occupied & Buckled = Green LED indicator illuminated
- Seat Occupied & Unbuckled = Red LED indicator with audible alarm
- No Occupant & Buckled = Red LED indicator with audible alarm
- No Occupant & Unbuckled = No indicator and no alarm

The SBMS shall include an audible alarm that shall warn that an unbuckled occupant condition exists, and the parking brake is released, or the transmission is not in park.

VEHICLE CAMERA SYSTEM

There shall be a color vehicle camera system provided with the following:

- One (1) camera located at the rear of the apparatus, pointing rearward, displayed automatically with the vehicle in reverse.

The camera image shall be displayed on a 7.00" LCD display located centered between the sun visors on a panavise mount. The display shall include manual camera activation capability and audio from the active camera.

The following components shall be included:

- One (1) MO700136DC, display
- One (1) SV-CW134639CAI, camera
- All necessary cables

RECESS REAR CAMERA

A rear camera recess shall be provided in the center at the rear .

ELECTRICAL

All 12-volt electrical equipment installed by the apparatus manufacturer shall conform to modern automotive practices. All wiring shall be high temperature crosslink type. Wiring shall be run in loom or conduit where exposed and have grommets where wire passes through sheet metal. Automatic reset circuit breakers shall be provided which conform to SAE Standards. Wiring shall be color, function and number coded. Function and number codes shall be continuously imprinted on all wiring harness conductors at 2.00" intervals. Exterior exposed wire connectors

	Bidder Complies	
	Yes	No
shall be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids. Electrical wiring and equipment shall be installed utilizing the following guidelines: (1) All holes made in the roof shall be caulked with silicon. Rope caulk is not acceptable. Large fender washers, liberally caulked, shall be used when fastening equipment to the underside of the cab roof. (2) Any electrical component that is installed in an exposed area shall be mounted in a manner that shall not allow moisture to accumulate in it. Exposed area shall be defined as any location outside of the cab or body. (3) Electrical components designed to be removed for maintenance shall not be fastened with nuts and bolts. Metal screws shall be used in mounting these devices. Also, a coil of wire shall be provided behind the appliance to allow them to be pulled away from mounting area for inspection and service work. (4) Corrosion preventative compound shall be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections shall require this compound in the plug to prevent corrosion and for easy separation (of the plug). (5) All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area. (6) All electrical terminals in exposed areas shall have silicon (1890) applied completely over the metal portion of the terminal. All emergency light switches shall be mounted on a separate panel installed in the cab. A master warning light switch and individual switches to be provided to allow pre-selection of emergency lights. The light switches shall be "rocker" type with an internal indicator light to show when switch is energized. All switches shall be properly identified and mounted in a removable panel for ease in servicing. Identification of the switches shall be done by either printing or etching on the switch panel. The switches and identification shall be illuminated. All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard #108, shall be furnished. Rear identification lights shall be recessed mounted for protection. Lights and wiring mounted in the rear bulkheads shall be protected from damage by installing a false bulkhead inside the rear compartments. An operational test shall be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order. The results of the tests shall be recorded and provided to the purchaser at time of delivery.		

	Bidder Complies	
	Yes	No

BATTERY SYSTEM

A single starting battery system shall be provided consisting of two (2) 12 volt, 1125 CCA, maintenance-free, group 31 batteries. The battery system shall have a total of 2250 CCA.

Jump Start Connections

Positive and negative posts for jump starting shall be provided by the chassis manufacturer. They shall be frame mounted and located under the hood.

BATTERY SYSTEM MODIFICATION

Due to specific apparatus configuration requirements, the batteries shall be relocated to the driver's side crew cab step by the apparatus manufacturer. An enclosure with an access panel shall protect the batteries.

MASTER BATTERY SWITCH

A master battery switch, to activate the battery system, shall be provided inside the cab within easy reach of the driver.

The master battery disconnect switch shall be wired between the starter solenoid and the remainder of the electrical loads on the apparatus.

A green "battery on" indicator light, visible from the driver's position, shall be provided.

BATTERY CHARGER/ AIR COMPRESSOR

There shall be one (1) Kussmaul Pump Plus 1200, Model # 52-21-1100, single output battery charger/air compressor provided. There shall be a, Model 091-189-12, status charge center indicating the state of charge included.

The automatic charger shall maintain one (1) set of batteries with a maximum output current of 40 amps.

The 12-volt DC air compressor shall be installed to maintain the air system pressure when the vehicle is not in use.

There shall be an auto pump timer installed between the pressure switch and the pump that shall allow the pump to run for one hour than shut down for one hour.

There shall be an auto pump timer installed between the pressure switch and the pump that shall allow the pump to run for one hour than shut down for one hour.

The battery charger shall be wired to the AC shoreline inlet through an AC receptacle adjacent to this battery charger.

Battery charger/compressor shall be located in the front left body compartment.

	Bidder Complies	
	Yes	No

The battery charger indicator shall be located adjacent to the driver's seat riser. The indicator shall be enclosed to protect it from damage.

AUTO EJECT FOR SHORELINE

There shall be one (1) Kussmaul™, Model 091-55-20-120, 20-amp 120-volt AC shoreline inlet(s) provided to operate the dedicated 120-volt AC circuits on the apparatus.

The shoreline inlet(s) shall include red weatherproof flip up cover(s).

There shall be a release solenoid wired to the vehicle's starter to eject the AC connector when the engine is starting.

The shoreline(s) shall be connected to the battery charger.

There shall be a mating connector body supplied with the loose equipment.

There shall be a label installed near the inlet(s) that state the following:

- Line Voltage
- Current Ratting (amps)
- Phase
- Frequency

The shoreline receptacle shall be located on the driver side of pump panel.

ALTERNATOR

The alternator shall be a Delco Remy 40SI, 275 amp, quadramount, with remote battery voltage sensor.

ELECTRONIC LOAD MANAGEMENT

A Kussmaul Load Manager 2 shall be provided on the apparatus. The device is an electronic load management (ELM) system that monitors the vehicles 12-volt electrical system, and automatically reduces the electrical load in the event of a low voltage condition and by doing so, ensures the integrity of the electrical system.

The ELM shall monitor the vehicle's voltage while at the scene (parking brake applied). It shall sequentially shut down individual electrical loads when the system voltage drops below a preset value. Two (2) separate electrical loads shall be controlled by the load manager. The ELM shall sequentially re-energize electrical loads as the system voltage recovers.

	Bidder Complies	
	Yes	No

EXTERIOR LIGHTING

Exterior lighting shall meet or exceed Federal Department of Transportation, Federal Motor Vehicle Safety Standards and National Fire Protection Association requirements in effect at time of proposal.

Five (5) LED clearance and marker lights shall be installed across the leading edge of the cab.

INTERMEDIATE LIGHT

There shall be two (2) Weldon, Model 9186-8580-29, amber LED turn signal marker lights furnished, one (1) each side, in the rear fender panel. The light shall double as a turn signal and marker light.

REAR CLEARANCE/MARKER/ID LIGHTING

There shall be a three (3) LED light bar used as identification lights located at the rear of the apparatus per the following:

- As close as practical to the vertical centerline
- Centers spaced not less than 6.00" or more than 12.00" apart
- Red in color
- All at the same height

There shall be two (2) LED lights installed at the rear of the apparatus used as clearance lights located at the rear of the apparatus per the following:

- To indicate the overall width of the vehicle
- One (1) each side of the vertical centerline
- As near the top as practical
- Red in color
- To be visible from the rear
- All at the same height

There shall be two (2) LED lights installed on the side of the apparatus used as marker lights as close to the rear as practical per the following:

- To indicate the overall length of the vehicle
- One (1) each side of the vertical centerline
- As near the top as practical
- Red in color
- To be visible from the side
- All at the same height

	Bidder Complies	
	Yes	No

There shall be two (2) red reflectors located on the rear of the truck facing to the rear. One (1) each side, as far to the outside as practical, at a minimum of 15.00", but no more than 60.00", above the ground.

There shall be two (2) red reflectors located on the side of the truck facing to the side. One (1) each side, as far to the rear as practical, at a minimum of 15.00", but no more than 60.00", above the ground.

Per FMVSS 108 and CMVSS 108 requirements.

REAR FMVSS LIGHTING

The rear stop/tail and directional LED lighting shall consist of the following:

- Two (2) Whelen®, Model M6BTT, red LED stop/tail lights
- Two (2) Whelen, Model M6T, amber LED arrow turn lights

The lights shall be provided with color lenses.

The lights shall be mounted in a polished combination housing.

There shall be two (2) Whelen Model M6BUW, LED backup lights provided in the tail light housing.

LICENSE PLATE BRACKET

There shall be one (1) license plate bracket mounted on the rear of the body.

A white LED light shall illuminate the license plate. A stainless-steel light shield shall be provided over the light that shall direct illumination downward, preventing white light to the rear.

LIGHTING BEZEL

There shall be two (2) Whelen, Model M6FCV4P, four (4) place chromed ABS housings with the Manufactures logos provided for the rear M6 series stop/tail, directional, back up, scene lights or warning lights.

BACK-UP ALARM

A PRECO, Model 1040, solid-state electronic audible back-up alarm that actuates when the truck is shifted into reverse shall be provided. The device shall sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum ten (10) dBA above surrounding environmental noise levels.

	Bidder Complies	
	Yes	No

CAB PERIMETER SCENE LIGHTS

There shall be four (4) Amdor, Model AY-LB-12HW012, 190 lumens each, 12.00" white LED strip lights provided.

- One (1) under the driver's side cab access step.
- One (1) under the passenger's side cab access step.
- One (1) under the passenger's side crew cab access step.
- One (1) under the driver's side crew cab access step.

The lights shall be activated when the battery switch is on and the respective door is open and whenever control has been selected for the body perimeter lights.

PUMP HOUSE PERIMETER LIGHTS

There shall be two (2) Amdor, Model AY-LB-12HW020, 350 lumens each, 20.00" LED weatherproof strip lights with brackets provided under the pump panel running boards, one (1) each side.

If the combination of options in the vehicle does not permit clearance for a 20.00" light, a 12.00" version of the Amdor light shall be installed.

The lights shall be controlled by the same means as the body perimeter lights.

BODY PERIMETER SCENE LIGHTS

There shall be two (2) Amdor Model AY-LB-12HW020, 350 lumens, 20.00" LED lights provided at the rear step area of the body, one (1) each side shining to the rear.

The perimeter scene lights shall be activated when the battery switch is on, and a switch within reach of the driver is activated and the parking brake is applied.

STEP LIGHTS

There shall be four (4) white LED, step lights provided. One (1) step light shall be provided on each side, on the front compartment face and two (2) step lights at the rear to illuminate the tailboard.

In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.

These step lights shall be actuated when the ignition switch is on and the parking brake is set.

All other steps on the apparatus shall be illuminated per the current edition of NFPA 1901.

	Bidder Complies	
	Yes	No

HOSE BED LIGHTS

There shall be white 12-volt DC LED light strips with stainless steel protective cover, provided to light the hose bed area. Hose Bed lights shall meet the photometric levels listed in NFPA 1901 for Hose Bed lighting requirements.

- Light strip(s) shall be installed along the upper edge of the left side of the hose bed.
- Light strip(s) shall be installed along the upper edge of the right side of the hose bed.

The lights shall be activated by a cup switch at the rear of the apparatus no more than 72.00" from the ground.

WALKING SURFACE LIGHT

There shall be Model FRP, 4" round black 12-volt DC LED floodlight(s) with bolt mount provided to illuminate the entire designated walking surface on top of the body.

The light(s) shall be activated when the body step lights are on.

12 VOLT LIGHTING

There shall be one (1) Whelen®, Model P*H2*, 17,750 lumens light(s) with white LEDs and a combination of flood and spot optics, mounted on a special bracket painted exterior cab roof color, provided on the front of the cab roof, centered.

The painted parts of this light assembly to be black.

The scene light(s) shall be activated by a switch at the driver's side switch panel and by a switch at the passenger's side switch panel.

The light(s) may be load managed when the parking brake is applied.

12 VOLT LIGHTING

There shall be two (2) Whelen® Model PCPSM1*, 10,444 lumens 12-volt DC surface mount light(s) installed on the body of the apparatus located, Between the upper DS side warning One (1) as far forward and One (1) as far rearward as possible. .

The light(s) shall include black housing(s) with a chrome cover.

The light(s) shall be controlled by a switch at the driver's side switch panel, by a switch at the driver's side pump panel, by a switch at the passenger's side switch panel and by a switch in a stainless-steel cup located on the driver's side at the rear of the apparatus no more than 72.00" from the ground.

The light(s) may be load managed when the parking brake is applied.

	Bidder Complies	
	Yes	No

12 VOLT LIGHTING

There shall be two (2) Whelen® Model PCPSM1*, 10,444 lumens 12-volt DC surface mount light(s) installed on the body of the apparatus located, Between the upper PS side warning One (1) as far forward and One (1) as far rearward as possible. .

The light(s) shall include black housing(s) with a chrome cover.

The light(s) shall be controlled by a switch at the driver's side switch panel, by a switch at the driver's side pump panel, by a switch at the passenger's side switch panel and by a switch in a recessed cup located at the passenger's side rear bulkhead.

The light(s) may be load managed when the parking brake is applied.

REAR SCENE LIGHTS

There shall be two (2) Whelen, Model PELCC, white 12-volt DC LED scene lights with 45-degree chrome housing installed at the rear of the apparatus, One 91) each side under the M9 warning lights.

The lights shall be controlled by a switch at the driver's side switch panel.

WATER TANK

Booster tank shall have a capacity of 2000 gallons and be constructed of polypropylene plastic by United Plastic Fabricating, Incorporated.

Tank shall be T-shaped to provide for deep side compartments and to serve as a large sump to limit the amount of undraftable water.

Tank joints and seams shall be nitrogen welded inside and out.

Tank shall be baffled in accordance with NFPA Bulletin 1901 requirements.

Baffles shall have vent openings at both the top and bottom to permit movement of air and water between compartments.

Longitudinal partitions shall be constructed of .38" polypropylene plastic and shall extend from the bottom of the tank through the top cover to allow for positive welding.

Transverse partitions shall extend from 4.00" off the bottom of the tank to the underside of the top cover.

All partitions shall interlock and shall be welded to the tank bottom and sides.

Tank top shall be constructed of .50" polypropylene. It shall be recessed .38" and shall be welded to the tank sides and the longitudinal partitions.

	Bidder Complies	
	Yes	No
Tank top shall be sufficiently supported to keep it rigid during fast filling conditions. Construction shall include 2.00" polypropylene dowels spaced no more than 30.00" apart and welded to the transverse partitions. Two (2) of the dowels shall be drilled and tapped (.50" diameter, 13.00" deep) to accommodate lifting eyes. A sump that will be sized dependent on the tank to pump plumbing shall be provided at the bottom of the water tank. Sump shall include a drain plug and the tank outlet. Tank shall be installed in a fabricated cradle assembly constructed of structural steel. Sufficient crossmembers shall be provided to properly support bottom of tank. Crossmembers shall be constructed of steel flat bar or rectangular tubing. Tank shall "float" in cradle to avoid torsional stress caused by chassis frame flexing. Rubber cushions, .50" thick x 3.00" wide, shall be placed on all horizontal surfaces that the tank rests on. Stops or other provision shall be provided to prevent an empty tank from bouncing excessively while moving vehicle. Mounting system shall be approved by the tank manufacturer. Fill tower shall be constructed of .50" polypropylene and shall be a minimum of 10.00" wide x 16.00" long. Fill tower shall be furnished with a .25" thick polypropylene screen and a hinged cover. An overflow pipe, constructed of 6.00" schedule 40 polypropylene, shall be installed approximately halfway down the fill tower and extend through the water tank and dump to the rear of the rear axle. **WATER TANK RESTRAINT** A heavy-duty water tank restraint shall be provided. **DIRECT TANK FILL** There shall be one (1) 4.00" Fireman's Friend Inc. FFE4040, semi-automatic tank fill(s) installed and properly labeled at the rear of the water tank, located right , with the valve installed as low as practical for easy hose connection. Piping, for the fill, shall be routed through the rear wall of the tank and include a flow deflector to break up the stream of water entering the water tank.		

	Bidder Complies	
	Yes	No

A 4.00" (F)NST x 5.00" Storz hard coat aluminum 30-degree elbow adapter, a 5.00" Storz x 2.50" aluminum female adapter and a 2.50" plug shall be provided for the tank fill.

TANK DUMP

A tank dump shall be installed at the rear of the tank.

The dump shall be gated with a 10.00" square stainless-steel Newton dump valve.

The dump valve shall have actuated electric control.

Controls for the valve shall be located inside the cab and at the left side rear of body.

A 180-degree, Newton 6012SW-34 swivel dump chute shall be provided. The chute shall include a Newton 4036-34 telescopic extension to allow the chute to extend past the body side for dumping.

The water tank design shall include additional support for this chute.

SWITCH, MASTER FOR DUMP VALVE

One (1) master on/off switch shall be provided for the water tank dump valves. The switch shall be located at the cab instrument panel.

HOSE BED

The hose bed shall be fabricated of .125"-5052 aluminum with a nominal 38,000 psi tensile strength.

Upper and rear edges of side panels shall have a double break for rigidity, a split tube finish shall not be acceptable.

The upper inside area of the beavertails shall be covered with brushed stainless steel to prevent damage to painted surface when hose is removed.

Flooring of the hose bed shall be removable aluminum grating with the top surface corrugated to aid in hose aeration. The grating slats shall be a minimum of 0.50" x 4.50" with spacing between slats for hose ventilation.

The inside of the hose bed shall be painted . The inside of the cargo area shall be painted .

Hose bed shall accommodate 1200' of 3" hose.

HOSE BED DIVIDER

One (1) adjustable hose bed divider shall be furnished for separating hose.

	Bidder Complies	
	Yes	No

Each divider shall be constructed of a .25" brushed aluminum sheet. Flat surfaces shall be sanded for uniform appearance or constructed of brushed aluminum.

Divider shall be fully adjustable by sliding in tracks, located at the front and rear of the hose bed.

Divider shall be held in place by tightening bolts, at each end.

Acorn nuts shall be installed on all bolts in the hose bed which have exposed threads.

HOSE BED HOSE RESTRAINT

The hose in the hose bed shall be restrained by a black nylon Velcro® strap at the top of the hose bed. At the rear of the hose bed, 2.00" black nylon webbing with a 1.50" x 4.00" box pattern shall attach at the top rear outside corners with seat belt buckle fasteners. The webbing shall have straps connected with seat belt buckle fasteners located at the rear body sheet below the hose bed.

A cross-divider shall be provided just behind the fill tower. The divider shall be bolted to the side sheet.

PORTABLE WATER TANK STORAGE

A storage compartment for a portable water tank shall be located in the hose bed. The portable water tank shall lie flat on a trough. A roller shall be provided at the rear to assist in removal of the portable water tank. A Velcro® strap restraining device shall be furnished at the rear to keep the portable water tank in the stored position. A section of hose bed grating shall be provided above the portable water tank storage area for carrying hose. The size of the portable folding tank shall be 2100 Gallon.

The right-side hose bed side sheet shall be moved out to the far outside of the body compartment increasing the hose bed width.

The visible seam between the body compartment and the hose bed side sheets shall be concealed with a chrome and black vinyl molding.

The depth of this wider hose bed shall not exceed 18.00".

The left side hose bed side sheet shall be moved out to the far outside of the body compartment increasing the hose bed width.

The visible seam between the body compartment and the hose bed side sheets shall be concealed with a chrome and black vinyl molding.

The depth of this wider hose bed shall not exceed 18.00".

	Bidder Complies	
	Yes	No

RUNNING BOARDS

Running boards shall be fabricated of .125" bright aluminum treadplate.

Each running board shall be supported by a welded 2.00" square tubing and channel assembly, which shall be bolted to the pump compartment substructure.

Running boards shall be 12.75" deep and spaced .50" away from the pump panel.

A splash guard shall be provided above the running board treadplate.

TAILBOARD

The tailboard shall also be constructed of .125" bright aluminum treadplate and spaced .50" from the body, as well as supported by a structural steel assembly.

The tailboard area shall be 16.00" deep.

The exterior side shall be flanged down and in for increased rigidity of tailboard structure.

REAR WALL, SMOOTH ALUMINUM/BODY MATERIAL

The rear facing surfaces of the center rear wall shall be smooth aluminum.

The bulkheads, the surface to the rear of the side body compartments, shall be smooth and the same material as the body.

Any inboard facing surfaces below the height of the hose bed shall be aluminum diamond plate.

TOW BAR

A tow bar shall be installed under the tailboard at center of truck.

Tow bar shall be fabricated of 1.00" CRS bar rolled into a 3.00" radius.

Tow bar assembly shall be constructed of .38" structural angle. When force is applied to the bar, it shall be transmitted to the frame rail.

Tow bar assembly shall be designed and positioned to allow up to a 30-degree upward angled pull of 17,000 lb., or a 20,000 lb. straight horizontal pull in line with the centerline of the vehicle.

Tow bar design shall have been fully tested and evaluated using strain gauge testing and finite element analysis techniques.

COMPARTMENTATION

Body and compartments shall be fabricated of .125", 5052-H32 aluminum.

Side compartments shall be an integral assembly with the rear fenders.

	Bidder Complies	
	Yes	No

Circular fender liners shall be provided for prevention of rust pockets and ease of maintenance.

Side compartment flooring shall be of the sweep out design with the floor higher than the compartment door lip.

The side compartment door opening shall be framed by flanging the edges in 1.75" and bending out again .75" to form an angle.

Drip protection shall be provided above the doors by means of bright aluminum extrusion, formed bright aluminum treadplate or polished stainless steel.

The top of the compartment shall be covered with bright aluminum treadplate rolled over the edges on the front, rear and outward side. These covers shall have the corners welded.

Side compartment covers shall be separate from the compartment tops.

Front facing compartment walls shall be covered with bright aluminum treadplate.

All screws and bolts which protrude into a compartment shall have acorn nuts on the ends to prevent injury.

UNDERBODY SUPPORT SYSTEM

Due to the severe loading requirements of this pumper a method of body and compartment support suitable for the intended load shall be provided.

The backbone of the support system shall be the chassis frame rails which is the strongest component of the chassis and is designed for sustaining maximum loads.

The support system shall include .375" thick steel vertical angle supports bolted to the chassis frame rails with .625" diameter bolts.

Attached to the bottom of the steel vertical angles shall be horizontal angles, with gussets welded to the vertical members, which extend to the outside edge of the body.

A steel frame shall be mounted on the top of these supports to create a floating substructure which shall result in a 500 lb. equipment support rating per lower compartment.

The floating substructure shall be separated from the horizontal members with neoprene elastomer isolators. These isolators shall reduce the natural flex stress of the chassis from being transmitted to the body.

Isolators shall have a broad load range, proven viability in vehicular applications, be of a failsafe design and allow for all necessary movement in three (3) transitional and rotational modes.

	Bidder Complies	
	Yes	No

The neoprene isolators shall be installed in a modified V three (3)-point mounting pattern to reduce the natural flex of the chassis being transmitted to the body.

A design with body compartments hanging on the chassis in an unsupported fashion shall not be acceptable.

AGGRESSIVE WALKING SURFACE

All exterior surfaces designated as stepping, standing, and walking areas shall comply with the required average slip resistance of the current NFPA standards.

LOUVERS

Louvers shall be stamped into compartment walls to provide the proper airflow inside the body compartments and to prevent water from dripping into the compartment. Where these louvers are provided, they shall be formed into the metal and not added to the compartment as a separate plate.

TESTING OF BODY DESIGN

Body structural analysis shall be fully tested. Proven engineering and test techniques such as finite element analysis, stress coating and strain gauging shall be performed with special attention given to fatigue, life and structural integrity of the cab, body and substructure.

Body shall be tested while loaded to its greatest in-service weight.

The criteria used during the testing procedure shall include:

- Raising opposite corners of the vehicle tires 9.00" to simulate the twisting a truck may experience when driving over a curb.
- Making a 90 degree turn, while driving at 20 mph to simulate aggressive driving conditions.
- Driving the vehicle at 35 mph on a washboard road.
- Driving the vehicle at 55 mph on a smooth road.
- Accelerating the vehicle fully, until reaching the approximate speed of 45 mph on rough pavement.

Evidence of actual testing techniques shall be made available upon request.

LEFT SIDE COMPARTMENTATION

The left side compartmentation shall consist of three rollup door compartments.

A full height, rollup door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 66.50" wide x 66.63" high x 25.88" deep in the lower

	Bidder Complies	
	Yes	No

25.00" of the compartments and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 60.75" wide x 56.88" high.

A rollup door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 66.50" wide x 32.88" high x 12.00" deep. The clear door opening shall be a minimum of 58.25" wide x 23.13" high.

A full height, rollup door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 47.75" wide x 67.63" high x 25.88" deep in the lower 26.00" of height and 12.00" deep in the remaining upper section of the compartment. The clear door opening shall be a minimum of 44.75" wide x 57.88" high.

The interior height of the compartments shall be measured from the compartment floor to the ceiling. The spool of the rollup door at the top of the compartment takes up some usable space. The depth of the compartments shall be measured from the back wall to the inside of the door frame.

Closing of the doors shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.

RIGHT SIDE COMPARTMENTATION

The right-side compartmentation shall consist of three rollup door compartments.

A full height, rollup door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 66.50" wide x 66.63" high x 25.88" deep in the lower 25.00" of the compartments and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 60.75" wide x 56.88" high.

A rollup door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 66.50" wide x 32.88" high x 12.00" deep. The clear door opening shall be a minimum of 58.25" wide x 23.13" high.

A full height, rollup door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 47.75" wide x 67.63" high x 25.88" deep in the lower 26.00" of height and 12.00" deep in the remaining upper section of the compartment. The clear door opening shall be a minimum of 44.75" wide x 57.88" high.

The interior height of the compartments shall be measured from the compartment floor to the ceiling. The spool of the rollup door at the top of the compartment takes up some usable space. The depth of the compartments shall be measured from the back wall to the inside of the door frame.

	Bidder Complies	
	Yes	No

Closing of the doors shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.

SIDE COMPARTMENT ROLLUP DOOR(S)

There shall be six (6) compartment doors installed on the side compartments. The doors shall be double faced aluminum construction, painted one (1) color to match the lower portion of the body and manufactured by Gortite®.

Lath sections shall be an interlocking rib design and shall be individually replaceable without complete disassembly of door.

Between each slat at the pivoting joint shall be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals shall allow door to operate in extreme temperatures ranging from 180 to -40 degrees Fahrenheit. Side, top and bottom seals shall be provided to resist ingress of dirt and weather and be made of Santoprene.

All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from 300 to -40 degrees Fahrenheit. Hardened plastic shall not be acceptable.

A polished stainless-steel lift bar to be provided for each roll-up door. Lift bar shall be located at the bottom of door and have latches on the outer extrusion of the doors frame. A ledge shall be supplied over lift bar for additional area to aid in closing the door.

Doors shall be constructed from an aluminum box section. The exterior surface of each slat shall be flat. The interior surfaces shall be concave to provide strength and prevent loose equipment from jamming the door from inside.

To conserve space in the compartments, the spring roller assembly shall not exceed 3.00" in diameter. A garage style roll door shall not be acceptable.

The header for the rollup door assembly shall not exceed 4.00".

A heavy-duty magnetic switch shall be used for control of open compartment door warning lights.

REAR COMPARTMENTATION

A tool compartment shall be provided at the rear of the apparatus. The compartment shall be 26.00" wide x 12.00" high x 25.88" deep.

REAR COMPARTMENT DOOR

A drop-down door constructed of bright aluminum treadplate shall be provided. The door shall have a D-ring latch.

	Bidder Complies	
	Yes	No

COMPARTMENT LIGHTING

There shall be seven (7) compartment(s) with two (2) white 12-volt DC LED compartment light strips. The dual light strips shall be centered vertically along each side of the door framing. There shall be two (2) light strips per compartment. The dual light strips shall be in all body compartment(s).

Any remaining compartments without light strips shall have a 6.00" diameter Truck-Lite, Model: 79384 light. Each light shall have a number 1076 one filament, two wire bulbs.

Opening the compartment door shall automatically turn the compartment lighting on.

MOUNTING TRACKS

There shall be four (4) sets of tracks for mounting shelf(s) in LS1, LS3, RS1 and RS3. These tracks shall be installed vertically to support the adjustable shelf(s) and shall be full height of the compartment. The tracks shall be painted to match the compartment interior.

ADJUSTABLE SHELVES

There shall be seven (7) shelves with a capacity of 500 lb. provided.

The shelf construction shall consist of .188" aluminum painted spatter gray with 2.00" sides.

Each shelf shall be infinitely adjustable by means of a threaded fastener, which slides in a track.

The shelves shall be held in place by .12" thick stamped plated brackets and bolts.

The location(s) shall be in RS1 in the lower third, in RS3 in the lower third, in RS3 in the upper third, in RS3 in the upper third, in RS1 in the upper third, in LS1 in the lower third and in LS3 in the lower third.

SLIDE-OUT FLOOR MOUNTED TRAY

There shall be two (2) floor mounted slide-out tray(s) with 2.00" sides provided LS3, RS1. Each tray shall be rated for up to 500lb in the extended position. The tray(s) shall be constructed of a minimum .13" aluminum. The finish shall be painted spatter gray.

The tray(s) shall be designed for maximum compartment width and depth.

Slides shall be equipped with ball bearings for ease of operation and years of dependable service. The slides shall be located on the sides of the tray so that the tray can be located as close to the compartment floor as possible.

Automatic locks shall be provided for both the "in" and "out" positions. The trip mechanism for the locks shall be located at the front of the tray for ease of use with a gloved hand.

	Bidder Complies	
	Yes	No

PEGBOARD

There shall be 3/16" thick aluminum pegboard spatter gray painted shall be installed on the back wall of two (2) compartments. It shall be mounted using two (2) horizontal tracks. Retainers shall be used to mount the pegboard to the tracks. The pegboard(s) installed shall be on the upper standard depth section of the compartment. The holes shall be .281" diameter, punched 1.00" on center. Pegboard shall be provided in the following compartments: LS1 and LS3.

PEGBOARD

There shall be 3/16" thick aluminum pegboard spatter gray painted installed on the back wall of two (2) compartments. It shall be mounted using two (2) horizontal tracks. Retainers shall be used to mount the pegboard to the tracks. The holes shall be .281" diameter , punched 1.00" on center. The pegboard shall be located in the LS2 and RS2 and mounted Full height and width on the back wall of the compartment.

RUB RAIL

Bottom edge of the side compartments shall be trimmed with a bright aluminum extruded rub rail.

Trim shall be 2.12" high with 1.38" flanges turned outward for rigidity.

The rub rails shall not be an integral part of the body construction, which allows replacement in the event of damage.

BODY FENDER CROWNS

Polished stainless-steel fender crowns shall be provided around the rear wheel openings with a dielectric barrier shall be provided between the fender crown and the fender sheet metal to prevent corrosion. These fender crowns must be wide enough to prevent splashing onto the body from the specified tires.

The fender crowns shall be held in place with stainless steel screws that thread directly into a composite nut and not directly into the parent body sheet metal to eliminate dissimilar metals contact and greatly reduce the chance for corrosion. Rubber welting shall be provided between the body and crown.

BODY FENDER LINER

A painted fender liner shall be provided. The liners shall be removable to aid in the maintenance of rear suspension components.

HARD SUCTION HOSE

NFPA 1901, 2016 edition, section 5.8.2 requires a minimum of 20 ft of suction hose or 15 ft of supply hose.

	Bidder Complies	
	Yes	No

Hose is not on the apparatus as manufactured. The fire department shall provide suction or supply hose.

There shall be Two (2) lengths of 10' long x 6.00" diameter hose provided and equipped with long handle couplings provided on the ends.

HARD SUCTION HOSE STORAGE

One (1) fully enclosed hard suction hose compartment shall be provided on the left side between the water tank and side sheet area and capable of storing two (2) hard suction hoses.

Two (2) aluminum troughs shall be provided one (1) above the other inside the compartment.

One (1) brushed stainless steel door with a pair of Southco C2 chrome raised trigger lever latch hinged on the left side, shall be provided at the rear of the compartment.

HANDRAILS

The handrails shall be 1.25" diameter knurled aluminum to provide a positive gripping surface.

Chrome plated end stanchions shall support the handrail. Plastic gaskets shall be used between end stanchions and any painted surfaces.

Drain holes shall be provided in the bottom of all vertically mounted handrails.

Handrails shall be provided to meet NFPA 1901 section 15.8 requirements. The handrails shall be installed as noted on the sales drawing.

HANDRAILS

One (1) vertical handrail shall be located on each rear beavertail.

HANDRAIL

One (1) full width horizontal handrail shall be provided below the hose bed at the rear of the apparatus.

ADDITIONAL HANDRAIL

One (1) handrail, 8.00" long, shall be mounted See AD drawing, top of hose bed toward the front on the driver side close to the pump .

ADDITIONAL HANDRAIL

Two (2) handrails, 12.00" long, shall be mounted one each side of the rear water level gauge along the seam between the top and bottom rear sheets.

AIR BOTTLE STORAGE (TRIPLE)

A quantity of one (1) air bottle compartment designed to hold (3) air bottles up to 7.25" in diameter x 26.00" deep shall be provided on the left side rearward of the rear wheels. A brushed

	Bidder Complies	
	Yes	No

stainless-steel door with a chrome plated flush lift & turn latch shall be provided to contain the air bottle. A dielectric barrier shall be provided between the door hinge, hinge fasteners and the body sheet metal.

Inside the compartment, black rubber matting shall be provided.

AIR BOTTLE COMPARTMENT STRAP

A strap shall be provided in the air bottle compartment(s) to help contain the air bottles when the vehicle is parked on an incline. The strap shall wrap around the neck and attach to the wall of the compartment.

AIR PACK STORAGE

A total of three (3) air pack compartment(s) shall be provided and located Two (2) on the Passenger 's side forward and rearward of the rear wheels and One (1) on the driver's side forward of the rear wheels. The air pack compartment(s) shall be tapered to match the profile of the space available in the fender. The compartment(s) shall be approximately 15.50" wide at the top and 5.00" wide at the bottom for the wheel cutout. The compartment(s) shall be 15.50" tall at the body side compartment and 6.00" tall at the wheel cutout. The compartment(s) shall be 26.00" deep and have a drain hole.

Inside the compartment, black rubber matting shall be provided.

A brushed stainless-steel hinged door with a chrome plated flush lift & turn latch shall be provided to contain the air pack. A dielectric barrier shall be provided between the door hinge, hinge fasteners and the body sheet metal.

EXTENSION LADDERS PROVIDED BY FIRE DEPARTMENT

NFPA 1901, 2016 edition, section 5.8.1.2 requires an extension ladder.

The extension ladder is not on the apparatus as manufactured. There shall be one (1) extension ladder(s) provided and installed by the fire department. The ladder(s) shall be a 24' Duo-Safety 900-A, two (2)-section.

ROOF LADDER PROVIDED BY FIRE DEPARTMENT

NFPA 1901, 2016 edition, section 5.8.1.2 requires a minimum of one roof ladder.

The roof ladder is not on the apparatus as manufactured. There shall be one (1) roof ladder(s) provided and installed by the fire department. The ladder(s) shall be a 14' Duo-Safety 775-A.

PIKE POLE PROVIDED BY FIRE DEPARTMENT

NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) 8 ft or longer pike pole mounted in a bracket fastened to the apparatus.

	Bidder Complies	
	Yes	No
The pike pole is not on the apparatus as manufactured. The fire department shall provide and mount the pike pole. The pike pole(s) shall be a Duo-Safety 10' pike pole. **6' PIKE POLE PROVIDED BY FIRE DEPARTMENT** NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) 6' pike pole or plaster hook mounted in a bracket fastened to the apparatus. The pike pole is not on the apparatus as manufactured. The fire department shall provide and mount the pike pole. The pike pole(s) shall be a Duo-Safety 6' pike pole. **PIKE POLES/FOLDING LADDER COMPARTMENT** A compartment shall be provided, recessed below the water tank tee at the rear of body, on the right side. The compartment shall be equipped with two (2) pvc tubes for storage of two (2) straight handled pike poles and (1) stainless steel trough for storage of (1) folding ladder. A stainless-steel door shall be provided at the rear with a lift and turn latch. **FOLDING STEPS FRONT OF BODY** Folding steps shall be provided full height on the left side and right-side body compartments to provide access to the cargo bed. Steps shall be spaced evenly on the sales drawing. Actual quantity may vary due to pump panel interferences but shall meet the NFPA required maximum stepping height. The Trident steps shall be bright finished, non-skid with a black tread coating on the stepping surface. The steps shall incorporate an LED light to illuminate the stepping surface. The steps can be used as a hand hold with two openings wide enough for a gloved hand. **REAR FOLDING STEPS** Bright finished, non-skid folding steps with a black tread coating on the stepping surface shall be provided at the rear. Each step shall incorporate an LED light to illuminate the stepping surface. The steps can be used as a hand hold with two openings wide enough for a gloved hand. **MIDSHIP FIRE PUMP** Midship fire pump shall be a Hale DSD1250, 1250 gpm, single stage, midship mounted, centrifugal type.		

	Bidder Complies	
	Yes	No

Pump shall be the class "A" type.

Pump shall deliver the percentage of rated discharges at the 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.

Entire pump, both suction and discharge passages, shall be hydrostatically tested to a pressure of 600 psi (40.8 bar).

Pump shall be fully tested at the pump manufacturer's factory to the performance requirements as outlined by the latest NFPA pamphlet #1901 and shall be free from objectionable pulsation and vibration.

The pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 psi (2041.2 bar). All moving parts in contact with water shall be of high-quality bronze or stainless steel. Pumps utilizing castings made of lower tensile strength cast iron not acceptable.

Pump body shall be vertically split, on a single plane.

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

Impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body.

Pump shaft shall be electric furnace, heat-treated, corrosion resistant stainless steel. Pump shaft must be sealed with double oil seal to keep road dirt and water out of drive unit.

MECHANICAL SEAL ON PUMP

Only one (1) mechanical seal shall be required on the suction (inboard) side of the pump. The mechanical seal shall be two (2.00) inches in diameter and shall be spring loaded, maintenance-free, and self-adjusting.

The mechanical seal construction shall be a carbon sealing ring, stainless steel coil spring, Viton® rubber boot, and a tungsten carbide seat with a Teflon backup seal.

	Bidder Complies	
	Yes	No

PUMP TRANSMISSION

The drive unit shall be cast and completely manufactured and tested at the pump manufacturer's factory. The pump drive unit shall be of sufficient size to withstand up to 16,000 foot/pound of torque from the engine in both road and pump operating conditions. The drive unit shall be designed with ample lubrication reserve to maintain the proper operating temperature.

The gearbox drive shafts shall be of heat-treated chrome nickel steel and at least 2.75 inches in diameter, on both the input and output drive shafts. They shall be designed to withstand the full torque of the engine in both road and pump operating conditions. All gears, both drive and pump, shall be of the highest quality, electric furnace, chrome nickel steel. Bores shall be ground to size and teeth integrated, crown-shaved and hardened, to give an extremely accurate gear for long life, smooth, quiet running and higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrust.

The pump ratio shall be selected by the apparatus manufacturer to provide the maximum performance with the engine and transmission selected. Three (3) green warning lights shall be provided to indicate to the operator(s) when the pump has completed the shift from Road to Pump position. Two (2) lights shall be located in the truck driving compartment and one (1) light on pump operator's panel, adjacent to the throttle control.

PUMPING MODE

An interlock system shall be provided to ensure that the pump drive system components are properly engaged so that the apparatus can be safely operated. The interlock system shall be designed to allow stationary pumping only.

AIR PUMP SHIFT

Pump shift engagement shall be made by a two (2) position sliding collar, actuated pneumatically (by air pressure), with a three (3) position air control switch located in the cab.

Two (2) indicator lights shall be provided adjacent to the pump shift inside the cab. One (1) green light shall indicate the pump shift has been completed and be labeled "pump engaged". The second green light shall indicate when the pump has been engaged and the chassis transmission is in pump gear. This indicator light shall be labeled "OK to pump".

The pump shift shall be interlocked to prevent the pump from being shifted out of gear when the chassis transmission is in gear to meet NFPA requirements.

The pump shift control in the cab shall be illuminated to meet NFPA requirements.

TRANSMISSION LOCK-UP

The direct gear transmission lock-up for the fire pump operation shall engage automatically when the pump shift control in the cab is activated.

	Bidder Complies	
	Yes	No

AUXILIARY COOLING SYSTEM

A supplementary heat exchange cooling system shall be provided to allow the use of water from the discharge side of the pump for cooling the engine water. Heat exchanger shall be a separate unit. It shall be installed in the pump or engine compartment with the control located on the pump operator's control panel. Exchanger shall be plumbed to the master drain valve.

INTAKE RELIEF VALVE - PUMP

An Akron Style 53 relief valve shall be installed on the suction side of the pump preset at 125 psig.

The relief valve shall have a working range of 50 psi to 250 psi.

The outlet shall terminate below the frame rails with a 2.50" National Standard hose thread adapter and shall have a "do not cap" warning tag.

The relief valve pressure control shall be located behind the right side pump panel with a stainless steel access door .

PRESSURE CONTROLLER

A Fire Research, INCONTROL Model TGA300 pressure governor shall be provided.

A pressure transducer shall be installed in the water discharge and intake manifold on the pump.

The display panel shall be located at the pump operator's panel.

PRIMING PUMP

The priming pump shall be a Trident Emergency Products compressed air powered, high efficiency, multistage venturi based AirPrime System, conforming to standards outlined in the current edition of NFPA 1901.

All wetted metallic parts of the priming system are to be of brass and stainless steel construction.

One (1) priming control shall open the priming valve and start the pump primer.

PUMP MANUALS

There shall be a total of two (2) pump manuals provided by the pump manufacturer and furnished with the apparatus. The manuals shall be provided by the pump manufacturer in the form of two (2) electronic copies. Each manual shall cover pump operation, maintenance, and parts.

PLUMBING, STAINLESS STEEL AND HOSE

All inlet and outlet lines shall be plumbed with either stainless steel pipe, flexible polypropylene tubing or synthetic rubber hose reinforced with hi-tensile polyester braid. All hose's shall be

	Bidder Complies	
	Yes	No

equipped with brass or stainless steel couplings. All stainless steel hard plumbing shall be a minimum of a schedule 10 wall thickness.

Where vibration or chassis flexing may damage or loosen piping or where a coupling is required for servicing, the piping shall be equipped with victaulic or rubber couplings.

Plumbing manifold bodies shall be ductile cast iron or stainless steel.

All piping lines are to be drained through a master drain valve or shall be equipped with individual drain valves. All drain lines shall be extended with a hose to drain below the chassis frame.

All water carrying gauge lines shall be of flexible polypropylene tubing.

All piping, hose and fittings shall have a minimum of a 500 PSI hydrodynamic pressure rating.

MAIN PUMP INLETS

A 6.00" pump manifold inlet shall be provided on each side of the vehicle. The suction inlets shall include removable die cast zinc screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.

MAIN PUMP INLET CAP

The main pump inlets shall have National Standard Threads with a long handle chrome cap.

The cap shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).

VALVES

All ball valves shall be Akron® Brass in-line valves. The Akron valves shall be the 8000 series heavy-duty style with a stainless steel ball and a simple two-seat design. No lubrication or regular maintenance is required on the valve.

Valves shall have a **ten (10) year** warranty.

LEFT SIDE INLET

There shall be one (1) auxiliary inlet with a 2.50" valve at the left side pump panel, terminating with a 2.50" (F) National Standard hose thread adapter.

The auxiliary inlet shall be provided with a strainer, chrome swivel and plug.

The location of the valve for the one (1) inlet shall be recessed behind the pump panel.

	Bidder Complies	
	Yes	No

INLET CONTROL

The side auxiliary inlet(s) shall incorporate a quarter-turn ball valve with the control located at the inlet valve. The valve operating mechanism shall indicate the position of the valve.

INLET BLEEDER VALVE

A 0.75" bleeder valve shall be provided for each side gated inlet. The valves shall be located behind the panel with a swing style handle control extended to the outside of the panel. The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. The water discharged by the bleeders shall be routed below the chassis frame rails.

TANK TO PUMP

The booster tank shall be connected to the intake side of the pump with stainless steel piping and a quarter turn 3.00" full flow line valve with the control remotely located at the operator's panel. Tank to pump line shall run straight (no elbows) from the pump into the front face of the water tank and angle down into the tank sump. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing.

A check valve shall be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank.

TANK REFILL

A 2.00" combination tank refill and pump re-circulation line shall be provided, using a quarter-turn full flow ball valve controlled from the pump operator's panel.

LEFT SIDE DISCHARGE OUTLETS

There shall be Two (2) discharge outlets with a 2.50" valve on the left side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.

RIGHT SIDE DISCHARGE OUTLETS

There shall be One (1) discharge outlet with a 2.50" valve on the right side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.

There shall be One (1) discharge outlet with a 3.00" valve on the right side of the apparatus, terminating with a 3.00" (M) National Standard hose thread adapter.

The outlet shall be controlled by a handwheel control located at the pump operator's panel. An indicator shall be provided to show the position of the valve.

	Bidder Complies	
	Yes	No

FRONT BUMPER TURRET PLUMBING

Plumbing consisting of 2.00" piping and flexible hose from the pump house to the right side front bumper shall be provided. A fabricated weldment made of stainless steel pipe shall be used in the plumbing where appropriate.

There shall be automatic drains provided at all low points of the piping.

BUMPER TURRET

One (1) Task Force Tips model Tornado RC Y2-E84A electrically controlled monitor shall be provided on the front bumper extension. The monitor shall be capable of quick disconnect from the bumper extension. The monitor shall be provided with a TFT B-TO-ERP-150 10-100 gpm @ 150 psi automatic nozzle. Control for the monitor shall be a joystick located between the driver and officer.

The turret shall have a horizontal rotation of 180 degrees and operate from 90 degrees above to 45 degrees below horizontal. The horizontal rotation and elevation movement shall be driven by a 12 volt DC motor/actuator.

An electric 2.00" full flow ball valve shall be provided at the pump. The valve shall be activated by the turret (monitor) controls described above.This valve location shall keep the turret plumbing line from being pressurized unless the turret is in use.

ADDITIONAL FRONT DISCHARGE OUTLET

There shall be one (1) 2.50" discharge outlet piped to the front of the apparatus and located on the top of the left side of the front bumper.

Plumbing shall consist of 2.50" piping and flexible hose with a 2.50" full flow valve with control at the pump operator's panel. A fabricated weldment made of stainless steel pipe shall be used in the plumbing where appropriate. The piping shall terminate with a 2.50" NST with 90 degree stainless steel swivel.

There shall be automatic drains provided at all low points of the piping.

DISCHARGE CAPS/ INLET PLUGS

Chrome plated, rocker lug, caps with chain shall be furnished for all discharge outlets 1.00" thru 3.00" in size, besides the pre-connected hose outlets.

Chrome plated, rocker lug, plugs with chain shall be furnished for all auxiliary inlets 1.00" thru 3.00" in size.

The caps and plugs shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).

	Bidder Complies	
	Yes	No

OUTLET BLEEDER VALVE

A 0.75" bleeder valve shall be provided for each outlet 1.50" or larger. Automatic drain valves are acceptable with some outlets if deemed appropriate with the application.

The valves shall be located behind the panel with a swing style handle control extended to the outside of the side pump panel. The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. Bleeders shall be located at the bottom of the pump panel. They shall be properly labeled identifying the discharge they are plumbed in to. The water discharged by the bleeders shall be routed below the chassis frame rails.

LEFT SIDE OUTLET ELBOWS

The 2.50" discharge outlets located on the left side pump panel shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45 degree elbow.

The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).

RIGHT SIDE OUTLET ELBOWS

The 2.50" discharge outlets located on the right side pump panel shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45 degree elbow.

The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).

ADDITIONAL RIGHT SIDE OUTLET ELBOWS

The One (1) discharge outlet, located on the right side pump panel, shall be furnished with a 3.00" (F) National Standard hose thread x 2.50" (M) MNST, chrome plated, 30 degree elbow.

The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).

DISCHARGE OUTLET CONTROLS

The discharge outlets shall incorporate a quarter-turn ball valve with the control located at the pump operator's panel. The valve operating mechanism shall indicate the position of the valve.

If a handwheel control valve is used, the control shall be a minimum of a 3.9" diameter stainless steel handwheel with a dial position indicator built in to the center of the handwheel.

	Bidder Complies	
	Yes	No

Any 3.00 inch or larger discharge valve shall be a slow-operating valve in accordance with NFPA 16.7.5.3.

DELUGE RISER

A 3.00" deluge riser shall be installed above the pump in such a manner that a monitor can be mounted and used effectively. Piping shall be installed securely so no movement develops when the line is charged. The riser shall be gated and controlled at the pump operator's panel with a handwheel control.

TELESCOPIC PIPING

The deluge riser piping shall include a 18.00" Task Force Model XG18 Extend-A-Gun extension.

This extension shall be telescopic to allow the deluge gun to be raised 18.00" increasing the range of operation.

A position sensor shall be provided on the telescopic piping that shall activate the "do not move vehicle" light inside the cab when the monitor is in the raised position.

The deluge riser shall have male National Pipe Threads for mounting the monitor.

CROSSLAY HOSE BEDS

Two (2) crosslays with 1.50" outlets shall be provided. Each bed to be capable of carrying 200' of 1.75" double jacketed hose and shall be plumbed with 2.00" i.d. pipe and gated with a 2.00" quarter turn ball valve.

Outlets to be equipped with a 1.50" National Standard hose thread 90 degree swivel located in the hose bed so that hose may be removed from either side of apparatus.

The crosslay controls shall be at the pump operator's panel.

The center crosslay dividers shall be fabricated of 0.25" aluminum and shall provide adjustment from side to side. The divider shall be unpainted with a brushed finish.

Vertical scuffplates,constructed of stainless steel shall be provided at the front and rear ends of the bed on each side of vehicle.

Crosslay bed flooring shall consist of removable perforated brushed aluminum.

CROSSLAY COVER

A hinged aluminum treadplate cover shall be installed over the crosslay hose beds. It shall include a latch at each end of the cover to hold it securely in place, a chrome grab handle at each

	Bidder Complies	
	Yes	No

end for opening and closing the cover and a foam rubber gasket where the cover comes into contact to a painted surface.

A black vinyl cover permanently attached to the aluminum treadplate cover shall be provided over each end of the crosslay hose beds. The cover shall have bungee cords attached at each lower corner.

BOOSTER HOSE REEL

A Hannay electric rewind booster hose reel shall be installed over the pump in a recessed open compartment on the left side of the apparatus. Reel to be fabricated of aluminum and have highly polished end discs.

A polished stainless steel roller and guide assembly shall be mounted on the reel side of the apparatus.

Discharge control shall be provided at the pump operator's panel. Plumbing to the reel shall consist of 1.50" Aeroquip hose and a 1.50" valve.

Reel motor shall be protected from overload with a circuit breaker rated to match the motor.

An electric rewind control switch shall be installed on the reel side pump panel.

Booster hose, 1.00" diameter and 150 feet, with chrome plated Barway, or equal couplings shall be provided.

Working pressure of the booster hose shall be a minimum of 800 psi.

Capacity of the hose reel shall be 150 feet of 1.00" booster hose.

FOAM SYSTEM

A foam system shall not be required on this apparatus.

PUMP COMPARTMENT

The pump compartment shall be separate from the hose body and compartments so that each may flex independently of the other. It shall be a fabricated assembly of steel tubing, angles and channels which supports both the fire pump and the side running boards.

The pump compartment shall be mounted on the chassis frame rails with rubber biscuits in a four point pattern to allow for chassis frame twist.

Pump compartment, pump, plumbing and gauge panels shall be removable from the chassis in a single assembly.

	Bidder Complies	
	Yes	No

PUMP MOUNTING

Pump shall be mounted to a substructure which shall be mounted to the chassis frame rail using rubber isolators. The mounting shall allow chassis frame rails to flex independently without damage to the fire pump.

LEFT SIDE PUMP CONTROL PANELS

All pump controls and gauges shall be located at the left side of the apparatus and properly identified.

Layout of the pump control panel shall be ergonomically efficient and systematically organized.

The pump operator's control panel shall be removable in two (2) main sections for ease of maintenance:

The upper section shall contain sub panels for the mounting of the pump pressure control device, engine monitoring gauges, electrical switches, and foam controls (if applicable). Sub panels shall be removable from the face of the pump panel for ease of maintenance. Below the sub panels shall be located all valve controls and line pressure gauges.

The lower section of the panel shall contain all inlets, outlets, and drains.

All push/pull valve controls shall have 1/4 turn locking control rods with polished chrome plated zinc tee handles. Guides for the push/pull control rods shall be chrome plated zinc castings securely mounted to the pump panel. Push/pull valve controls shall be capable of locking in any position. The control rods shall pull straight out of the panel and shall be equipped with universal joints to eliminate binding.

IDENTIFICATION TAGS

The identification tag for each valve control shall be recessed in the face of the tee handle.

All discharge outlets shall have color coded identification tags, with each discharge having its own unique color. Color coding shall include the labeling of the outlet and the drain for each corresponding discharge.

All line pressure gauges shall be mounted directly above the corresponding discharge control tee handles and recessed within the same chrome plated casting as the rod guide for quick identification. The gauge and rod guide casting shall be removable from the face of the pump panel for ease of maintenance. The casting shall be color coded to correspond with the discharge identification tag.

All remaining identification tags shall be mounted on the pump panel in chrome plated bezels.

The pump panel on the right side shall be removable with lift and turn type fasteners.

	Bidder Complies	
	Yes	No

Trim rings shall be installed around all inlets and outlets.

DRAWING, PUMP OPERATOR'S PANEL

A detailed drawing to scale of the top mount pump control panel shall be provided for approval prior to construction. This drawing shall include all of the gauges and controls located on the pump operator's panel.

PUMP PANEL CONFIGURATION

The pump panel configuration shall be arranged and installed in an organized manner that shall provide user-friendly operation.

PUMP AND GAUGE PANEL

The pump and gauge panels shall be constructed of aluminum with a black vinyl finish. A polished aluminum trim molding shall be provided around each panel.

The right side pump panel shall be removable and fastened with swell type fasteners.

PUMP COMPARTMENT LIGHT

A pump compartment light shall be provided inside the right side pump enclosure and accessible through a door on the pump panel.

A .125" weep hole shall be provided in each light lens, preventing moisture retention.

Engine monitoring graduated LED indicators shall be incorporated with the pressure controller.

Also provided at the pump panel shall be the following:

- Master Pump Drain Control

THROTTLE READY GREEN INDICATOR LIGHT

There shall be a green indicator light integrated with the pressure governor and/or engine throttle installed on the pump operators panel that is activated when the pump is in throttle ready mode.

OK TO PUMP INDICATOR LIGHT

There shall be a green indicator light installed on the pump operators panel that is activated when the pump is in Ok To Pump mode.

VACUUM AND PRESSURE GAUGES

The pump vacuum and pressure gauges shall be liquid filled and manufactured by Class 1 Incorporated ©.

	Bidder Complies	
	Yes	No

The gauges shall be a minimum of 4.00" in diameter and shall have white faces with black lettering, with a pressure range of 30.00"-0-600#.

Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.

The pump pressure and vacuum gauges shall be installed adjacent to each other at the pump operator's control panel.

Test port connections shall be provided at the pump operator's panel. One (1) shall be connected to the intake side of the pump, and the other to the discharge manifold of the pump. They shall have 0.25 in. standard pipe thread connections and non-corrosive polished stainless steel or brass plugs. They shall be marked with a label.

This gauge shall include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.

PRESSURE GAUGES

The individual "line" pressure gauges for the discharges shall be interlube filled and manufactured by Class 1©.

They shall be a minimum of 2.00" in diameter and shall have white faces with black lettering.

Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.

Gauges shall have a pressure range of 30"-0-400#.

The individual pressure gauge shall be installed as close to the outlet control as practical.

This gauge shall include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.

WATER LEVEL GAUGE

A Fire Research TankVision Pro model WLA300-A00 water tank indicator gauge shall be installed on the pump operators panel. The gauge kit shall include an electronic indicator module, a pressure sensor, and a 10' sensor cable. The gauge shall show the volume of water in the tank on nine (9) easy to see super bright RGB LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The gauge case shall be waterproof, manufactured of Polycarbonate/Nylon material, and have a distinctive blue label.

The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, six (6) programmable colored light patterns

	Bidder Complies	
	Yes	No

to display tank volume, adjustable brightness control levels and a data link to connect remote indicators. Low water warnings shall include flashing LEDs at 1/4 tank and down chasing LEDs when the tank is almost empty.

The gauge shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted from the outside of the water tank near the bottom. No probe shall be placed on the interior of the tank. Wiring shall be weather resistant and have automotive type plug-in connectors.

MINI SLAVE UNIT

A Fire Research TankVision model WLA205-A00 miniature tank indicator gauge shall be installed in the cab. The indicator gauge shall show the volume of water in the tank on five (5) easy to see super bright LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator gauge case shall be manufactured of Polycarbonate material with an integrated lens and have a distinctive blue label.

ADDITIONAL WATER LEVEL GAUGE

There shall be three (3) additional Fire Research MaxVision model WLA280-A00 water tank remote indicators provided and installed One (1) each side of the body up high and forward and One (1) centered on the rear of the apparatus.. The indicators shall show the volume of water in the tank on Ninety six (96) easy to see super bright Tri-color LEDs. The indicator case shall be waterproof, manufactured of Polycarbonate material with an integrated lens.

The remote indicator shall indicate the level as a single color in Red for 25% or less, Amber color for up to 50% volume, Blue color for up to 75% volume and Green color for up to 100% volume. When the level reaches 25%, the red LEDs will begin flashing. When the level is empty, the red LEDs will scroll in a down-chasing motion and then flash three times.

The flash rate shall be determined by the main water tank sensor.

It shall have the program capability to adjust the brightness level for day time and night time viewing. The LEDs can also be programmed for different colors.

This module shall be activated when the emergency master is activated.

LIGHT SHIELD

There shall be a polished, 16 gauge stainless steel light shield installed over the pump operator's panel.

- There shall be 12 volt DC white LED lights installed under the stainless steel light shield to illuminate the controls, switches, essential instructions, gauges, and instruments

	Bidder Complies	
	Yes	No

necessary for the operation of the apparatus. These lights shall be activated by the pump panel light switch. Additional lights shall be included every 18.00" depending on the size of the pump house.

- One (1) pump panel light shall come on when the pump is in ok to pump mode.

There shall be a light activated above the pump panel light switch when the parking brake is set. This is to afford the operator some illumination when first approaching the control panel.

AIR HORN SYSTEM

There shall be two (2) Grover air horns recessed in the front bumper. The horn system shall be piped to the air brake system wet tank utilizing 0.38" tubing. A pressure protection valve shall be installed in-line to prevent loss of air in the air brake system.

Air Horn Location

The air horns shall be located on each side of the bumper, towards the outside.

AIR HORN CONTROL

The air horns shall be actuated by a foot switch on the officer's side and by the horn button in the steering wheel. The driver shall have the option to control the air horns or the chassis horns from the horn button by means of a selector switch located on the instrument panel.

ELECTRONIC SIREN

A Code 3®, Model 3692, electronic siren with noise canceling microphone shall be provided.

This siren to be active when the battery switch is on and the emergency master switch is on.

Siren head shall be located near the overhead switches.

The electronic siren shall be controlled on the siren head only. No horn button or foot switches shall be required.

SPEAKER

There shall be one (1) Code 3®, Model PB100C, speaker with chrome finish provided. The speaker shall be connected to the siren amplifier.

The speaker shall be recessed in the left side of the front bumper, just outside of the frame rail.

AUXILIARY MECHANICAL SIREN

A Federal Q2B® siren shall be furnished.

The control solenoid shall be powered up after the emergency master switch is activated.

The mechanical siren shall be recessed in the front bumper on the right side. The siren shall be supported by the bumper framework.

	Bidder Complies	
	Yes	No

The mechanical siren shall be actuated by two (2) foot switches, one (1) located on the officer's side and one (1) on the driver's side.

A momentary red switch shall be included in the cab on the switch panel to activate the siren brake.

FRONT ZONE UPPER WARNING LIGHTS

There shall be one (1) 60.00" Whelen® Freedom™ IV lightbar mounted on the cab roof.

The lightbar shall include the following:

- One (1) red flashing LED module in the left side rear corner position.
- One (1) red flashing LED module in the left side end position.
- One (1) red flashing LED module in the left side front corner position.
- One (1) red flashing LED module in the left side first front position.
- One (1) white flashing LED module in the left side second front position.
- One (1) red flashing LED module in the left side third front position.
- One (1) white flashing LED module in the left side fourth front position.
- One (1) red flashing LED module in the left side fifth front position.
- One (1) red flashing LED module in the right side fifth front position.
- One (1) white flashing LED module in the right side fourth front position.
- One (1) red flashing LED module in the right side third front position.
- One (1) white flashing LED module in the right side second front position.
- One (1) red flashing LED module in the right side first front position.
- One (1) red flashing LED module in the right side front corner position.
- One (1) red flashing LED module in the right side end position.
- One (1) red flashing LED module in the right side rear corner position.

There shall be clear lenses included on the lightbar.

There shall be a switch in the cab on the switch panel to control this lightbar.

The white flashing LEDs shall be disabled when the parking brake is applied.

The six (6) red flashing LED modules in the front positions and the two (2) red flashing LED modules in the rear corner positions may be load managed when the parking brake is applied.

	Bidder Complies	
	Yes	No

FRONT WARNING LIGHT

There shall be two (2) Whelen, Model M6** LED flashing lights provided at the front of the truck.

The driver's side front warning light to be red/white split.

The passenger's side front warning light to be red/white split.

The color of the lenses shall be clear.

The lights shall be mounted with with a flange.

The lights shall be activated by a switch on the cab instrument panel.

SIDE ZONE LOWER LIGHTING

There shall be four (4) Whelen®, Model M6*C, flashing LED warning lights with chrome trim installed per the following:

- Two (2) lights, one (1) each side on the bumper extension. The side front lights to be red.
- Two (2) lights, one (1) each side above rear wheels. The side rear lights to be red.
- The lights shall include a clear lenses.

There shall be a switch in the cab on the switch panel to control the lights.

SIDE WARNING LIGHTS

There shall be two (2) Whelen, Model M9*C LED flashing warning light(s) with bezel(s) provided One (1) each side of the body - mounted as far forward as possible ahead of the front side scene lights..

The color of the lights shall be red.

All of these lights shall include a clear lens.

These lights shall be activated with the Side Zone Lower warning lights.

SIDE WARNING LIGHTS

There shall be four (4) Whelen® Model PS*01FCR, 1.68" high x 11.11" wide x 0.52" deep flashing LED warning light(s) with chrome trim and clear lenses provided on the side of the apparatus, One each side centered below compartment LS1, LS3, RS1 and RS3 in the rub rails..

The light(s) to include red flashing LEDs.

There shall be a switch in the cab on the switch panel to control the lights.

White LEDs shall be deactivated when the parking brake is applied.

	Bidder Complies	
	Yes	No

Amber, blue, green and red LEDs may be load manages when the parking brake is applied.

REAR ZONE LOWER LIGHTING

There shall be two (2) Whelen®, Model M6*C, LED flashing warning lights located at the rear of the apparatus.

- The driver's side rear light to be red
- The passenger's side rear light to be red

Both lights shall include a lens that is clear.

There shall be a switch located in the cab on the switch panel to control the lights.

REAR WARNING LIGHTS

There shall be two (2) Whelen®, Model M6**, 4.31" high x 6.75" wide x 1.37" deep flashing LED warning light(s) with chrome trim provided at the rear of the apparatus, One (1) each side on the rear bulkheads centered between the taillight bezel and the Pellc rear scene lights .

The light(s) to include blue flashing LEDs. The warning light lens color(s) to be clear.

These light(s) shall be controlled with parking brake engaged and rear upper switch.

The light(s) may be load managed when the parking brake is applied.

WARNING LIGHTS (REAR AND SIDE UPPER ZONES)

Four (4) Whelen, model M9*C LED flashing warning lights shall be provided at the rear of the apparatus.

The side rear upper light(s) on the driver's side to be red.

The rear upper light(s) on the driver's side to be red.

The rear upper light(s) on the passenger's side to be red.

The side rear upper light(s) on the passenger's side to be red.

These lights shall include a lens that is clear.

There shall be a switch located in the cab on the switch panel to control the lights.

The rear warning lights shall be mounted on top of the compartmentation with all wiring totally enclosed. The rear deck lights shall be mounted on the beavertails as high as possible.

LOOSE EQUIPMENT

The following equipment shall be furnished with the completed unit:

	Bidder Complies	
	Yes	No

- One (1) bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit

PAINT PROCESS

The exterior custom cab and/or body painting procedure shall consist of a seven (7) step finishing process. A commercial chassis paint process shall follow similar processes as determined by the chassis manufacturer. The following procedure shall be used by the apparatus manufacturer:

1. Manual Surface Preparation - All exposed metal surfaces on the custom cab and body shall be thoroughly cleaned and prepared for painting. Imperfections on the exterior surfaces shall be removed and sanded to a smooth finish. Exterior seams shall be sealed before painting. Exterior surfaces that shall not be painted include; chrome plating, polished stainless steel, anodized aluminum and bright aluminum treadplate.
2. Chemical Cleaning and Pretreatment - All surfaces shall be chemically cleaned to remove dirt, oil, grease, and metal oxides to ensure the subsequent coatings bond well. The aluminum surfaces shall be properly cleaned and treated using a high pressure, high temperature 4 step Acid Etch process. The steel and stainless surfaces shall be properly cleaned and treated using a high temperature 3 step process specifically designed for steel or stainless. The chemical treatment converts the metal surface to a passive condition to help prevent corrosion. A final pure water rinse shall be applied to all metal surfaces.
3. Surfacer Primer - The Surfacer Primer shall be applied to a chemically treated metal surface to provide a strong corrosion protective base coat. A minimum thickness of 2 mils of Surfacer Primer is applied to surfaces that require a critical aesthetic finish. The surfacer primer shall be a two-component high solids urethane that has excellent sanding properties and an extra smooth finish when sanded.
4. Finish Sanding - The surfacer primer shall be sanded with a fine grit abrasive to achieve an ultra-smooth finish. This sanding process is critical to produce the smooth mirror like finish in the topcoat.
5. Sealer Primer - The sealer primer is applied prior to the base coat in all areas that have not been previously primed with the surfacer primer. The sealer primer is a two-component high solids urethane that goes on smooth and provides excellent gloss hold out when top coated.
6. Base coat Paint - Two coats of a high performance, two component high solids polyurethane base coat shall be applied. The Base coat shall be applied to a thickness that shall achieve the proper color match. The Base coat shall be used in conjunction with a urethane clear coat to provide protection from the environment.
7. Clear Coat - Two (2) coats of clear coat shall be applied over the base coat color. The clear coat is a two-component high solids urethane that provides superior gloss and

	Bidder Complies	
	Yes	No

durability to the exterior surfaces. Lap style doors shall be clear coated to match the body. Paint warranty for the roll-up doors shall be provided by the roll-up door manufacturer.

Specifications are written to define cyclic corrosion testing, physical strengths, durability and minimum appearance requirements must be met in order for an exterior paint finish to be considered acceptable as a quality finish.

Each batch of base coat color shall be checked for a proper match before painting of the cab and the body. After the cab and body are painted, the color is verified again to make sure that it matches the color standard. Electronic color measuring equipment shall be used to compare the color sample to the color standard entered into the computer. Color specifications are used to determine the color match. A Delta E reading shall be used to determine a good color match within each family color.

All removable items such as brackets, compartment doors, door hinges, and trim shall be removed and separately if required, to ensure paint behind all mounted items. Body assemblies that cannot be finish painted after assembly shall be finish painted before assembly.

Environmental Impact

Contractor shall meet or exceed all current State regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water and soil. Controls shall include the following conditions:

- Topcoats and primers shall be chrome and lead free.
- Metal treatment chemicals shall be chrome free. The wastewater generated in the metal treatment process shall be treated on-site to remove any other heavy metals.
- Particulate emission collection from sanding operations shall have a 99.99 percent efficiency factor.
- Particulate emissions from painting operations shall be collected by a dry filter or water wash process. If the dry filter is used, it shall have an efficiency rating of 98 percent. Water wash systems shall be 99.97 percent efficient.
- Water from water wash booths shall be reused. Solids shall be removed on a continual basis to keep the water clean.
- Paint wastes shall be disposed of in an environmentally safe manner.
- Empty metal paint containers shall be recycled to recover the metal.
- Solvents used in clean-up operations shall be recycled on-site or sent off-site for distillation and returned for reuse.

Additionally, the finished apparatus shall not be manufactured with or contain products that have ozone depleting substances. Contractor shall, upon demand, present evidence that the

	Bidder Complies	
	Yes	No

manufacturing facility meets the above conditions and that it is in compliance with the state EPA rules and regulations.

PAINT

The chassis shall be painted by the chassis manufacturer, and shall remain the commercial grade finish as provided. The body shall be painted the matching color by the apparatus manufacturer.

To ensure a good color match between the body and chassis, the apparatus manufacturer and chassis manufacturer shall have a mutually pre-approved paint color program. The apparatus shall be painted candy apple red.

COMMERCIAL CHASSIS PAINT

The chassis shall be painted by the chassis manufacturer. It shall remain the color and commercial quality finish as provided. The primary color shall be candy apple red.

TWO-TONE CAB

The cab shall be painted two-tone by the apparatus manufacturer. The top portion of the cab and hood shall be painted #101 black to match the purchaser's photograph or design.

PAINT CHASSIS FRAME ASSEMBLY

The chassis frame assembly shall be painted black by the chassis manufacturer. It shall remain the commercial grade finish as provided.

COMPARTMENT INTERIOR PAINT

The interior of all compartments shall be painted with a gray spatter type paint.

REFLECTIVE STRIPES

Three (3) reflective stripes shall be provided across the front of the vehicle and along the sides of the body. The reflective band shall consist of a 1.00" black stripe at the top with a 1.00" gap then a 6.00" black stripe with a 1.00" gap and a 1.00" black stripe on the bottom.

REFLECTIVE VINYL ON FRONT BUMPER

There shall be a reflective vinyl band provided across the front bumper.

REAR CHEVRON STRIPING

There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus. The rear surface, excluding the rear compartment door, shall be covered.

The colors shall be ruby red and black reflective.

Each stripe shall be 6.00" in width.

	Bidder Complies	
	Yes	No

NFPA 1901, 2016 edition, Section 15.9.3.2.1 requires each stripe in the chevron to be a single color alternating between red and either yellow, fluorescent yellow, or fluorescent yellow green. Use of the red and yellow color is endorsed by the International Association of Fire Chiefs. The fire apparatus purchaser shall realize that by requesting an exception to this aspect of NFPA 1901, this fire apparatus will not contribute to the national standardization initiative. Per the purchaser's color specification, this apparatus shall not be compliant to NFPA 1901 standards in this regard.

JOG(S) IN REFLECTIVE BAND

The reflective band located on each side of the apparatus body shall contain one (1) jog(s) and shall be angled at approximately a 45 degrees when installed.

CAB DOORS REFLECTIVE STRIPE

A black reflective stripe shall be provided on the interior of each cab door.

This stripe shall be a minimum of 96.00 square inches and shall meet the NFPA 1901 requirement.

BODY STRIPE

There shall be a genuine gold leaf stripe provided on each side of the body, located along the top of the side compartmentation.

CAB FACE STRIPE

There shall be a reflective stripe across the face of the cab.

CAB STRIPE

There shall be a genuine gold leaf stripe provided on the paint break on both sides of the cab.

LETTERING

The lettering shall be totally encapsulated between two (2) layers of clear vinyl.

LETTERING

Forty-one (41) to sixty (60) genuine gold leaf lettering, 3.00" high, with outline and shade shall be provided.

LETTERING

There shall be printed effect gold leaf lettering, 3.00" high, with outline and shade provided. There shall be 12 letters provided.

LETTERING

There shall be reflective lettering, 18.00" high, with outline and shade provided. There shall be six (6) letters provided.

	Bidder Complies	
	Yes	No

LETTERING
There shall be reflective lettering, 5.00" high, with outline and shade provided. There shall be six (6) letters provided.

LETTERING
There shall be reflective lettering, 3.00" high, with outline and shade provided. There shall be six (6) letters provided.

LETTERING
There shall be printed effect gold leaf lettering, 14.00" high, with outline and shade provided. There shall be six (6) letters provided.

LETTERING
There shall be reflective lettering, 7.00" high, with outline and shade provided. There shall be 12 letters provided.

LETTERING
There shall be printed effect gold leaf lettering, 4.00" high, with outline and shade provided. There shall be three (3) letters provided.

LETTERING
One (1) to twenty (20) printed effect gold leaf lettering, 10.00" high, with outline and shade shall be provided.

LETTERING
There shall be non-reflective vinyl lettering, 6.00" high, with outline provided. There shall be six (6) letters provided.

LETTERING
There shall be reflective lettering, 6.00" high, with outline and shade provided. There shall be two (2) letters provided.

MALTESE CROSS INSTALLATION
There shall be one (1) pair of maltese crosses, comprised of reflective material, provided and installed on crew cab doors.

EMBLEM
There shall be two (2) reflective emblem(s), approximately 10.00" - 12.00" in size, installed to be determined. The emblem shall be modeled after the department submitted information (art, patch, etc).

	Bidder Complies	
	Yes	No

MANUAL, BODY PARTS ONLY

A custom parts manuals for the factory installed parts only shall be provided in USB flash drive format with the completed unit.

The manual shall contain the following:

- Job number

- Part numbers with full descriptions

- Table of contents

- Parts section sorted in functional groups reflecting a major system, component, or assembly

- Parts section sorted in Alphabetical order

- Instructions on how to locate parts

The manual shall be specifically written for the body model being purchased. It shall not be a generic manual for a multitude of different bodies.

SERVICE PARTS INTERNET SITE

The service parts information included in this manual are also available on the factory website. The website offers additional functions and features not contained in this manual, such as digital photographs and line drawings of select items. The website also features electronic search tools to assist in locating parts quickly.

MANUALS, SERVICE

A USB flash drive format service manual supplement containing parts and service information on factory installed components shall be provided with the completed unit.

The manual shall be specifically written for the unit being purchased. It shall not be a generic manual for a multitude of different units.

MANUAL, CHASSIS OPERATION

One (1) chassis operation (manufacturers standard) shall be provided with the completed unit.

ONE (1) YEAR MATERIAL AND WORKMANSHIP

Each new piece of apparatus shall be provided with a minimum one (1) year basic apparatus material and workmanship limited warranty. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package (no exception).

	Bidder Complies	
	Yes	No
CHASSIS WARRANTY The chassis manufacturer shall provide a **three (3) year or 100,000 mile warranty.** **PAINT WARRANTY** The commercial chassis manufacturer's paint warranty shall apply to the paint on the chassis only. **CAMERA SYSTEM WARRANTY** A fifty four (54) month warranty shall be provided for the camera system**.** **COMPARTMENT LIGHT WARRANTY** A ten (10) year material and workmanship limited warranty shall be provided for the 12-volt DC LED strip lights**.** The warranty shall cover the LED strip lights to be free from defects in material and workmanship that would arise under normal use. A copy of the warranty certificate shall be submitted with the bid package (no exception). **TRANSMISSION WARRANTY** The transmission shall have a **five (5) year/unlimited mileage** warranty covering 100 percent parts and labor. The warranty to be provided by Allison Transmission and not apparatus builder. **WATER TANK WARRANTY** The UPF poly water tank shall be provided with a lifetime material and workmanship limited warranty. A copy of the warranty certificate shall be submitted with the bid package (no exception). **TEN (10) YEAR STRUCTURAL INTEGRITY** Each new piece of apparatus shall be provided with a **ten (10) year** material and workmanship limited warranty on the apparatus body. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (no exception). **ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY** A Gortite roll-up door limited warranty shall be provided. The mechanical components of the roll-up door shall be warranted against defects in material and workmanship for the lifetime of the vehicle. A **six (6) year** limited warranty shall be provided on painted and satin roll up doors. A copy of the warranty certificate shall be submitted with the bid package.		

	Bidder Complies	
	Yes	No

PUMP WARRANTY

The Hale **five (5) year** limited warranty on parts and **two (2) year** limited warranty on labor shall be provided for the pump.

A copy of the warranty certificate shall be submitted with the bid package (no exception).

TEN (10) YEAR PUMP PLUMBING WARRANTY

The stainless steel plumbing components and ancillary brass fittings used in the construction of the water/foam plumbing system shall be warranted for a period of **ten (10) years or 100,000 miles**. This covers structural failures caused by defective design or workmanship, or perforation caused by corrosion, provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original purchaser for a period of ten years from the date of delivery.

A copy of the warranty certificate shall be submitted with the bid package (no exception).

TEN (10) YEAR PRO-RATED PAINT AND CORROSION

Each new piece of apparatus shall be provided with a **ten (10) year** pro-rated paint and corrosion limited warranty on the apparatus body. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package (no exception).

THREE (3) YEAR MATERIAL AND WORKMANSHIP

The gold leaf lamination shall be provided with a **three (3) year** material and workmanship limited warranty. The warranty shall cover the gold leaf lamination as being free from defects in material and workmanship that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package (no exception).

VEHICLE STABILITY CERTIFICATION

The fire apparatus manufacturer shall provide a certification stating the apparatus complies with NFPA 1901, current edition, section 4.13, Vehicle Stability. The certification shall be provided at the time of bid.

CAB INTEGRITY

The cab has been tested to and passed the following standards:

- ECE Regulation No.29

- SAE J2422 Cab Roof Strength Evaluation - Quasi-Static Loading Heavy Trucks.

	Bidder Complies	
	Yes	No

AMP DRAW REPORT

The bidder shall provide, at the time of bid and delivery, an itemized print out of the expected amp draw of the entire vehicle's electrical system.

The manufacturer of the apparatus shall provide the following:

- Documentation of the electrical system performance tests.
- A written load analysis, which shall include the following:
  - The nameplate rating of the alternator.
  - The alternator rating under the conditions specified per:
    - Applicable NFPA 1901 or 1906 (Current Edition).
  - The minimum continuous load of each component that is specified per:
    - Applicable NFPA 1901 or 1906 (Current Edition).
  - Additional loads that, when added to the minimum continuous load, determine the total connected load.
  - Each individual intermittent load.

All of the above listed items shall be provided by the bidder per the applicable NFPA 1901 or 1906 (Current Edition).