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Bidder Complies	
Yes	No

**SPECIFICATIONS FOR A MULTI PURPOSE RESPONSE VEHICLE**

Sealed bids will be received by Niles Fire Department 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 is 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 and have been in business for a minimum of 20 years. Furthermore, in order 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 set 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 components parts and equipment, providing proof of compliance with each and every item in the departments advertised specifications. A letter only, even

	Bidder Complies	
	Yes	No
<p>though written on company letterhead, shall not be sufficient. <b>An exception to this requirement shall not be acceptable.</b></p> <p>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.</p> <p>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.</p> <p>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.</p> <p>THE PURCHASER HAS THE RIGHT TO REJECT ANY BIDS WHICH DOES NOT MEET THESE SPECIFICATIONS AND IS THE SOLE DECIDER TO DEEM WHICH BID IS IN THE BEST INTEREST OF THE PURCHASER.</p> <p><b><u>EXCEPTIONS</u></b></p> <p>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.</p> <p>Bidders shall indicate in the "yes/no" column if their bid complies on each item (paragraph) specified.</p> <p>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.</p> <p>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 case that a substituted item is equal to that specified. The buyer shall be the sole judge in determination of acceptable substitutes.</p> <p>Proposals that are found to have deviations without listing them or bids taking total exceptions to these advertised specifications will be rejected (no exception).</p>		

	Bidder Complies	
	Yes	No
<p>Bids not including all exceptions is a material breach and shall result in the bid being immediately rejected (no exception).</p> <p><b><u>GENERAL DESIGN AND CONSTRUCTION</u></b></p> <p>The cab, chassis, pump module, and body are to be entirely designed, assembled and painted by the prime vehicle manufacturer, which minimizes third party involvement on engineering, design, service and warranty issues.</p> <p>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 welded cab assembly, the pumphouse module assembly, the chassis assembly, body and electrical system. Apparatus using any subcontracted cab, chassis, pump module, electrical system or body will not be acceptable.</p> <p>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.</p> <p>The bidder shall make accurate statements as to the apparatus weight and dimensions.</p> <p><b><u>QUALITY AND WORKMANSHIP</u></b></p> <p>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.</p> <p>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.</p> <p>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. <b>An exception to this requirement shall not be acceptable.</b></p> <p><b><u>DELIVERY</u></b></p> <p>Apparatus, to insure proper break in of all components while still under warranty, <b>shall be delivered under its own power</b> - 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.</p>		

Bidder Complies	
Yes	No

**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.
- 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.

	Bidder Complies	
	Yes	No
<p><b><u>SERVICE AND WARRANTY SUPPORT (DEALERSHIP)</u></b></p> <p>TO INSURE FULL SERVICE AFTER DELIVERY, THE SELLING BIDDER/DEALERSHIP MUST BE CAPABLE OF PROVIDING SERVICE WHEN REQUIRED.</p> <p>The bidder/dealership shall show that the company is in position to render prompt service and to furnish replacement parts.</p> <p>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.</p> <p>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 seventy five (75) miles of the Fire Department.</p> <p><b><u>SERVICE AND WARRANTY SUPPORT (MANUFACTURER)</u></b></p> <p>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.</p> <p>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 that ensures service parts are given priority. The bidder shall provide detailed documentation of service and replacement part resources.</p> <p>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.</p> <p>The manufacturer must also maintain a 24 hour/ 7 day a week, toll free emergency hot line.</p> <p>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.</p> <p>The manufacturer must be capable of providing both in-house and on-site service for the apparatus.</p> <p>The manufacturer shall offer regional factory hands-on repair and maintenance training classes.</p>		

	Bidder Complies	
	Yes	No
<p>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.</p> <p><b><u>LIABILITY</u></b></p> <p>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.</p> <p><b><u>INSURANCE PROVIDED BY BIDDER</u></b></p> <p><b><u>COMMERCIAL GENERAL LIABILITY INSURANCE</u></b></p> <p>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:</p> <p>Each Occurrence\$1,000,000</p> <p>Products/Completed Operations Aggregate\$1,000,000</p> <p>Personal and Advertising Injury\$1,000,000</p> <p>General Aggregate\$2,000,000</p> <p>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.</p> <p><b><u>COMMERCIAL AUTOMOBILE LIABILITY INSURANCE</u></b></p> <p>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:</p> <p>Each Accident Combined Single Limit:\$1,000,000</p> <p><b><u>UMBRELLA/EXCESS LIABILITY INSURANCE</u></b></p> <p>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:</p> <p>Aggregate:\$3,000,000</p> <p>Each Occurrence:\$3,000,000</p> <p>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.</p>		

Bidder Complies	
Yes	No

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 policies 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.

**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 a Pierce 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.

	Bidder Complies	
	Yes	No
<p>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 policies be cancelled before the expiration date thereof, notice shall be delivered in accordance with the policy provisions.</p> <p>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.</p> <p><b><u>SINGLE SOURCE MANUFACTURER</u></b></p> <p>Bids shall only be accepted from a single source apparatus manufacturer. The definition of single source is a manufacturer that designs and manufactures their products using an integrated approach, including the chassis, cab weldment, cab, pumphouse (including the sheet metal enclosure, valve controls, piping and operators panel) and body being designed, fabricated and assembled on the bidder's premises. The electrical system (hardwire or multiplex) shall be both designed and integrated by the same apparatus manufacturer. The warranties relative to these major components (excluding component warranties such as engine, transmission, axles, pump, etc.) must be from a single source manufacturer and not split between manufacturers (i.e. body, pumphouse, cab weldment and chassis). The bidder shall provide evidence that they comply with this requirement.</p> <p>The bidder shall state the location of the factory where the apparatus is to be built.</p> <p><b><u>NFPA 2016 STANDARDS</u></b></p> <p>This unit shall comply with the NFPA standards effective January 1, 2016, except for fire department specifications that differ from NFPA specifications. These exceptions shall be set forth in the Statement of Exceptions.</p> <p>Certification of slip resistance of all stepping, standing and walking surfaces shall be supplied with delivery of the apparatus.</p> <p>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.</p> <p>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.</p> <p>The manufacturer shall have programs in place for training, proficiency testing and performance for any staff involved with certifications.</p>		

	Bidder Complies	
	Yes	No
<p>An official of the company shall designate, in writing, who is qualified to witness and certify test results.</p> <p><b><u>NFPA COMPLIANCY</u></b>  Apparatus proposed by the bidder shall meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in 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".</p> <p><b><u>VEHICLE INSPECTION PROGRAM CERTIFICATION</u></b>  To assure the vehicle is built to current NFPA standards, the apparatus, in its entirety, shall be third-party, independent, audit-certified through Underwriters Laboratory (UL) that it is built and complies to all applicable standards in the current edition of NFPA 1901. The certification includes: all design, production, operational, and performance testing of not only the apparatus, but those components that are installed on the apparatus (no exception).</p> <p>A placard shall be affixed in the driver's side area stating the third party agency, the date, the standard and the certificate number of the whole vehicle audit.</p> <p><b><u>PUMP TEST</u></b>  The pump shall be tested, approved, and certified by Underwriter's Laboratory at the manufacturer's expense. The test results and 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.</p> <p><b><u>GENERATOR TEST</u></b>  If the unit has a generator, the generator shall be tested, approved, and certified by Underwriters Laboratories at the manufacturer's expense. The test results shall be provided to the Fire Department at the time of delivery.</p> <p><b><u>BREATHING AIR TEST</u></b>  If the unit has breathing air, the apparatus manufacturer shall draw an air sample from the air system and certify that the air quality meets the requirements of NFPA 1989, <i>Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection</i>.</p> <p><b><u>BID BOND</u></b>  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.</p>		

	Bidder Complies	
	Yes	No
<p>Proposals received from bidders who do not manufacture the chassis shall provide a warranty that shall be issued jointly and severally by, and signed by, both the bidder and the chassis manufacturer.</p> <p>If the successful bidder does not manufacture the chassis, the bidder shall supply a warranty bond, in addition to their performance bond, along with their signed contract. This warranty bond shall guarantee all terms and conditions of the Basic One (1) Year Limited Warranty and names both the bidder and chassis manufacturer as co-principals. This warranty bond shall be issued for the contract amount and shall remain in force for a term which is consistent with the term of the Basic One (1) Year Limited Warranty.</p> <p>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.</p> <p><b><u>PERFORMANCE BOND NOT REQUESTED</u></b></p> <p>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:</p> <p>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. 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.</p> <p>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.</p> <p><b><u>APPROVAL DRAWING</u></b></p> <p>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</p>		

	Bidder Complies	
	Yes	No
<p>chassis make and model, location of the lights, siren, horns, compartments, major components, etc.</p> <p>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.</p> <p><b><u>ELECTRICAL WIRING DIAGRAMS</u></b></p> <p>Two (2) electrical wiring diagrams, prepared for the model of chassis and body, shall be provided.</p> <p><b><u>CHASSIS</u></b></p> <p>Chassis provided shall be a new, tilt-type custom fire apparatus. The chassis shall be manufactured in the apparatus body builder's facility eliminating any split responsibility. The chassis shall be designed and manufactured for heavy-duty service, with adequate strength, capacity for the intended load to be sustained, and the type of service required.</p> <p><b><u>WHEELBASE</u></b></p> <p>The wheelbase of the vehicle shall be no greater than 176.50.</p> <p><b><u>GVW RATING</u></b></p> <p>The gross vehicle weight rating shall be a minimum of 46,500.</p> <p><b><u>FRAME</u></b></p> <p>The chassis frame shall be built with two (2) steel channels bolted to five (5) cross members or more, depending on other options of the apparatus. The side rails shall be heat-treated steel measuring 10.25" x 3.50" x 0.375".</p> <p>Each rail shall have a section modulus of 16.00 cubic inches, yield strength of 120,000 psi, and a resisting bending moment (rbm) of 1,921,069 inch-pounds.</p> <p><b><u>FRAME REINFORCEMENT</u></b></p> <p>A full-length mainframe "C" liner shall be provided.</p> <p>The liner shall be an internal "C" design, heat-treated steel measuring 9.38" x 3.13" x 0.25". Each reinforcement member shall have a section modulus of 3.90 cubic inches, yield strength of 120,000 psi and resisting bending moment (rbm) of 938,762 in-lb.</p> <p><b><u>FRONT AXLE</u></b></p> <p>The front axle shall be a reverse "I" beam type with inclined king pins. It shall be a Meritor™ axle, Model FL-941, with a rated capacity of 18,000 lb.</p> <p><b><u>FRONT SUSPENSION</u></b></p> <p>The front springs shall be a Standens, three (3)-leaf, taper leaf design, 54.00" long x 4.00" wide, with a ground rating of 18,000 lb.</p> <p>The two (2) top leaves shall wrap the forward spring hanger pin. The top leaf shall also wrap the rear spring hanger pin. Both the front and rear eyes shall be Berlin style wraps that shall</p>		

	Bidder Complies	
	Yes	No
<p>place the eyes in the horizontal plane within the main leaf. This shall reduce bending stress from acceleration and braking.</p> <p>A steel encased rubber bushing shall be used in the spring eye. The steel encased rubber bushing shall be maintenance free and require no lubrication.</p> <p><b><u>SHOCK ABSORBERS</u></b> Heavy-duty telescoping shock absorbers shall be provided on the front axle.</p> <p><b><u>FRONT OIL SEALS</u></b> Oil seals with viewing window shall be provided on the front axle.</p> <p><b><u>FRONT TIRES</u></b> Front tires shall be Goodyear 385/65R22.5 radials, 18 ply G296 MSA tread, rated for 18,740 lb maximum axle load and 75 mph maximum speed.</p> <p>The tires shall be mounted on Alcoa 22.50" x 12.25" polished aluminum disc type wheels with a ten (10)stud, 11.25" bolt circle.</p> <p><b><u>REAR AXLE</u></b> The rear axle shall be a Meritor™, Model RS-26-185, with a capacity of 27,000 lb.</p> <p><b><u>TOP SPEED OF VEHICLE</u></b> A rear axle ratio shall be furnished to allow the vehicle to reach a top speed of 68 mph.</p> <p><b><u>REAR SUSPENSION</u></b> The rear suspension shall be Standens, semi-elliptical, 3.00" wide x 53.00" long, 12-leaf pack with a ground rating of 27,000 lb. The spring hangers shall be castings.</p> <p>The two (2) top leaves shall wrap the forward spring hanger pin, and the rear of the spring shall be a slipper style end that shall ride in a rear slipper hanger. To reduce bending stress due to acceleration and braking, the front eye shall be a berlin eye that shall place the front spring pin in the horizontal plane within the main leaf.</p> <p>A steel encased rubber bushing shall be used in the spring eye. The steel encased rubber bushing shall be maintenance free and require no lubrication.</p> <p><b><u>REAR OIL SEALS</u></b> Oil seals shall be provided on the rear axle(s).</p> <p><b><u>REAR TIRES</u></b> Rear tires shall be four (4) Goodyear® 12R22.50 radials, 16 ply all season G622 RSD tread, rated for 27,120 lb maximum axle load and 75 mph maximum speed.</p> <p>The tires shall be mounted on Alcoa 22.50" x 8.25" polished aluminum disc wheels with a ten (10) stud 11.25" bolt circle.</p>		

	Bidder Complies	
	Yes	No
<p><b><u>TIRE BALANCE</u></b> All tires shall be balanced with Counteract balancing beads. The beads shall be inserted into the tire and eliminate the need for wheel weights.</p> <p><b><u>TIRE PRESSURE MANAGEMENT</u></b> There shall be a RealWheels LED AirSecure™ 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.</p> <p>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.</p> <p>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.</p> <p><b><u>FRONT HUB COVERS</u></b> Stainless steel hub covers shall be provided on the front axle. An oil level viewing window shall be provided.</p> <p><b><u>REAR HUB COVERS</u></b> A pair of stainless steel high hat hub covers shall be provided on rear axle hubs.</p> <p><b><u>CHROME LUG NUT COVERS</u></b> Chrome lug nut covers shall be supplied on front and rear wheels.</p> <p><b><u>MUD FLAPS</u></b> Mud flaps shall be installed behind the front and rear wheels of the apparatus.</p> <p><b><u>WHEEL CHOCKS</u></b> There shall be one (1) pair of folding Ziamatic, Model SAC-44-E, aluminum alloy, Quick-Choc wheel blocks with easy-grip handle provided.</p> <p><b><u>Wheel Chock Brackets</u></b> 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 below the left side rear compartment.</p> <p><b><u>ANTI-LOCK BRAKE SYSTEM</u></b> The vehicle shall be equipped with a Meritor WABCO 4S4M, anti-lock braking system. The ABS shall provide a 4-channel anti-lock braking control on both the front and rear wheels. A digitally controlled system that utilizes microprocessor technology shall control the anti-lock braking system. Each wheel shall be monitored by the system. When any particular wheel begins to lockup, a signal shall be sent to the control unit. This control unit shall then reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake</p>		

	Bidder Complies	
	Yes	No
<p>system shall eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.</p> <p><b><u>BRAKES</u></b>  The service brake system shall be full air type by Meritor™.</p> <p>Front brakes shall be Model EX225 Disc Plus, disc type with automatic pad wear adjustment and 17.00" ventilated rotors for improved stopping distance.</p> <p>The rear brakes shall be Meritor™, Disc Plus, Model EX225, disc operated with automatic slack adjusters and a 17.00" ventilated rotor for improved stopping distance.</p> <p><b><u>BRAKE SYSTEM AIR COMPRESSOR</u></b>  The air compressor shall be a Cummins/WABCO with 18.7 cubic feet per minute output.</p> <p><b><u>BRAKE SYSTEM</u></b>  The brake system shall include:</p> <ul style="list-style-type: none"> <li>• Brake treadle valve</li> <li>• Heated automatic moisture ejector on air dryer</li> <li>• Total air system minimum capacity of 4,272 cubic inches</li> <li>• Two (2) air pressure gauges with a red warning light and an audible alarm, that activates when air pressure falls below 60 psi</li> <li>• Spring set parking brake system</li> <li>• Parking brake operated by a push-pull style control valve</li> <li>• A parking "brake on" indicator light on instrument panel</li> <li>• Park brake relay/inversion and anti-compounding valve, in conjunction with a double check valve system, with an automatic spring brake application at 40 psi</li> <li>• A pressure protection valve to prevent all air operated accessories from drawing air from the air system when the system pressure drops below 80 psi (550 kPa)</li> <li>• 1/4 turn drain valves on each air tank</li> </ul> <p>The air tank shall be primed and painted to meet a minimum 750 hour salt spray test.</p> <p>To reduce the effects of corrosion, the air tank shall be mounted with stainless steel brackets (no exception).</p> <p><b><u>BRAKE SYSTEM AIR DRYER</u></b>  The air dryer shall be a WABCO System Saver 1200 IWT, with internal wet tank, spin-on coalescing filter cartridge and 100 watt heater.</p> <p><b><u>BRAKE LINES</u></b>  Color-coded nylon brake lines shall be provided. The lines shall be wrapped in a heat protective loom where necessary in the chassis.</p>		

Bidder Complies	
Yes	No

**AIR INLET/OUTLET**

One (1) air inlet/outlet shall be installed with the female coupling located in the front body compartment on driver side. This system shall tie into the "wet" tank of the brake system and include a check valve in the inlet line and an 85 psi pressure protection valve in the outlet line. The air outlet shall be controlled by a needle valve.

A mating male fitting shall be provided with the loose equipment.

The air inlet shall allow a shoreline air hose to be connected to the vehicle. This shall allow station air to be supplied to the brake system of the vehicle to insure constant air pressure.

**AIR OUTLET**

One (1) air outlet shall be installed with a female coupling and shut off valve, located [Location, Air Coupling(s)]. This system shall tie into the "wet" tank of the brake system and include an 85-psi pressure protection valve in the outlet line to prevent the brake system from losing all air.

Female coupling and male fitting shall be .25" thread.

A mating male fitting shall be provided with the loose equipment.

**ENGINE**

The chassis shall be powered by an electronically controlled engine as described below:

Make:	Cummins
Model:	L9
Power:	450 hp at 2100 rpm
Torque:	1250 lb-ft at 1400 rpm
Governed Speed:	2200 rpm
Emissions Level:	EPA 2021
Fuel:	Diesel
Cylinders:	Six (6)
Displacement:	543 cubic inches (8.9L)
Starter:	Delco 39MT™
Fuel Filters:	Spin-on style primary filter with water separator and water-in-fuel sensor. Secondary spin-on style filter.

The engine shall include On-board diagnostics (OBD), which provides self diagnostic and reporting. The system shall give the owner or repair technician access to state of health information for various vehicle sub systems. The system shall monitor vehicle systems, engine and after treatment. The system shall illuminate a malfunction indicator light on the dash console if a problem is detected.

	Bidder Complies	
	Yes	No
<p><b><u>REPTO DRIVE</u></b>  A rear engine power take off shall be provided to drive the water pump. A vibration dampener shall be provided between the REPTO and water pump. Transmission PTO's used to drive the water pump shall not be allowed due to their lower torque ratings. The rear engine power take off shall be the same as used extensively throughout the construction industry. Rear engine PTO's allow for continuous 240 hp and 480 lb-ft torque ratings needed for large pump applications. The rear engine power take off shall have the same warranty as the engine provided by the engine manufacturer.</p> <p><b><u>HIGH IDLE</u></b>  A high idle switch shall be provided, inside the cab, on the instrument panel, that shall automatically maintain a preset engine rpm. A switch shall be installed, at the cab instrument panel, for activation/deactivation.</p> <p>The high idle 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 illuminate when the above conditions are met. The light shall be labeled "OK to Engage High Idle."</p> <p><b><u>ENGINE BRAKE</u></b>  A Jacobs® engine brake is to be installed with the controls located on the instrument panel within easy reach of the driver.</p> <p>The driver shall be able to turn the engine brake system on/off and have a high, medium and low setting.</p> <p>The engine brake shall activate when the system is on and the throttle is released.</p> <p>The high setting of the brake application shall activate and work simultaneously with the variable geometry turbo (VGT) provided on the engine.</p> <p>The engine brake shall be installed in such a manner that when the engine brake is slowing the vehicle the brake lights are activated.</p> <p>The ABS system shall automatically disengage the auxiliary braking device, when required.</p> <p><b><u>CLUTCH FAN</u></b>  A fan clutch shall be provided. The fan clutch shall be automatic when the pump transmission is in "Road" position, and constantly engaged when in "Pump" position.</p> <p><b><u>ENGINE AIR INTAKE</u></b>  The engine air intake shall be located above the engine cooling package. It shall draw fresh air from the front of the apparatus through the radiator grille.</p> <p>A stainless steel metal screen shall be installed at the inlet of the air intake system that shall meet NFPA 1901 requirements.</p>		

	Bidder Complies	
	Yes	No
<p>The air cleaner and stainless steel screen shall be easily accessible by tilting the cab.</p> <p><b><u>EXHAUST SYSTEM</u></b></p> <p>The exhaust system shall be stainless steel from the turbo to the engine's aftertreatment device, and shall be 4.00" in diameter. The exhaust system shall include a single module aftertreatment device to meet current EPA standards. An insulation wrap shall be provided on all exhaust pipes between the turbo and aftertreatment device to minimize the heat loss to the aftertreatment device. The exhaust shall terminate horizontally ahead of the right side rear wheels. A tailpipe diffuser shall be provided to reduce the temperature of the exhaust as it exits. Heat deflector shields shall be provided to isolate chassis and body components from the heat of the tailpipe diffuser.</p> <p><b><u>RADIATOR</u></b></p> <p>The radiator and the complete cooling system shall meet or exceed NFPA and engine manufacturer cooling system standards.</p> <p>For maximum corrosion resistance and cooling performance, the entire radiator core shall be constructed using long life aluminum alloy. The radiator core shall consist of aluminum fins, having a serpentine design, brazed to aluminum tubes. No solder joints or leaded material of any kind shall be acceptable in the core assembly.</p> <p>The radiator core shall have a minimum front area of 1060 square inches.</p> <p>Supply tank shall be made of heavy duty glass-reinforced nylon and the return tank shall be made of aluminum. Both tanks shall be crimped onto the core assembly using header tabs and a compression gasket to complete the radiator core assembly. There shall be a full steel frame around the inserts to enhance cooling system durability and reliability.</p> <p>The radiator shall be compatible with commercial antifreeze solutions.</p> <p>The radiator assembly shall be isolated from the chassis frame rails with rubber isolators to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven terrain.</p> <p>The radiator shall include a de-aeration/expansion tank. For visual coolant level inspection, the radiator shall have a built-in sight glass. The radiator shall be equipped with a 15 psi pressure relief cap.</p> <p>A drain port shall be located at the lowest point of the cooling system and/or the bottom of the radiator to permit complete flushing of the coolant from the system.</p> <p>Shields or baffles shall be provided to prevent recirculation of hot air to the inlet side of the radiator.</p> <p><b><u>COOLANT LINES</u></b></p> <p>Gates, or Goodyear, rubber hose shall be used for all engine coolant lines installed by the chassis manufacturer.</p>		

	Bidder Complies	
	Yes	No
<p>Hose clamps shall be stainless steel 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.</p> <p><b><u>FUEL TANK</u></b></p> <p>A 65 gallon fuel tank shall be provided and mounted at the rear of the chassis. The tank shall be constructed of 12-gauge, hot rolled steel. It shall be equipped with swash partitions and a vent. To eliminate the effects of corrosion, the fuel tank shall be mounted with stainless steel straps (no exception).</p> <p>A 0.75" drain plug shall be provided in a low point of the tank for drainage.</p> <p>A fill inlet shall be located on the left hand side of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Ultra Low Sulfur - Diesel Fuel Only."</p> <p>A 0.50" diameter vent shall be provided running from top of tank to just below fuel fill inlet.</p> <p>The tank shall meet all FHWA 393.67 requirements including a fill capacity of 95 percent of tank volume.</p> <p>All fuel lines shall be provided as recommended by the engine manufacturer.</p> <p><b><u>DIESEL EXHAUST FLUID TANK</u></b></p> <p>A 4.5 gallon diesel exhaust fluid (DEF) tank shall be provided and mounted in the driver's side body forward of the rear axle.</p> <p>A 0.50" drain plug shall be provided in a low point of the tank for drainage.</p> <p>A fill inlet shall be located on the driver's side of the body and be covered with a hinged, spring loaded, polished stainless steel door that is marked "Diesel Exhaust Fluid Only".</p> <p>The tank shall meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing.</p> <p>The tank shall include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.</p> <p><b><u>TRANSMISSION</u></b></p> <p>An Allison 5th generation, Model EVS 3000P, electronic torque converting automatic transmission shall be provided.</p> <p>The transmission shall be equipped with prognostics to monitor oil life, filter life, and transmission health. A wrench icon on the shift selector's digital display shall indicate when service is due.</p> <p>Two (2) PTO openings shall be located on both sides of converter housing (positions 4 o'clock and 8 o'clock) as viewed from the rear.</p>		

Bidder Complies	
Yes	No

A transmission temperature gauge with red light and audible alarm shall be installed on the cab dash.

**TRANSMISSION SHIFTER**

A five (5)-speed push button shift module shall be mounted to right of driver on console. Shift position indicator shall be indirectly lit for after dark operation.

The transmission ratio shall be:

1st	3.49 to 1.00
2nd	1.86 to 1.00
3rd	1.41 to 1.00
4th	1.00 to 1.00
5th	0.75 to 1.00
R	5.03 to 1.00

**TRANSMISSION PROGRAMMING**

The transmission shall be programmed to automatically shift the transmission to neutral when the parking brake is set to simplify operation and increase operational safety (no exception).

**TRANSMISSION COOLER**

A Modine plate and fin transmission oil cooler shall be provided using engine coolant to control the transmission oil temperature.

**DRIVELINE**

Drivelines shall be a heavy-duty metal tube and be equipped with Spicer® 1710 universal joints.

The shafts shall be dynamically balanced before installation.

A splined slip joint shall be provided in each driveshaft where the driveline design requires it. The slip joint shall be coated with Glidecoat® or equivalent.

**STEERING**

Dual steering gear, with integral heavy-duty power steering, shall be provided. For reduced system temperatures, the power steering shall incorporate an air to oil cooler and Vickers® V20NF hydraulic pump with integral pressure and flow control. All power steering lines shall have wire braded lines with crimped fittings.

A tilt and telescopic steering column shall be provided to improve fit for a broader range of driver configurations.

**STEERING WHEEL**

The steering wheel shall be 18.00" in diameter, have tilting and telescoping capabilities, and a 2-spoke design.

Bidder Complies	
Yes	No

**BUMPER**

A one (1) piece, ten (10) gauge, 304-2B type polished stainless steel bumper, a minimum of 12.00" high, shall be attached to a bolted modular extension frame.

The bumper shall be extended 19.00" from front face of cab.

The bumper extension frame shall be fabricated using .38" gussets welded to 2.00" x 5.00" steel tubing running front to back with .50" front and rear plates mounted to the chassis frame. Fabricated "U" shaped channel supports the weight of the bumper and provides the main strength in frontal crash. .25" steel is formed into "C" shaped backing plates for mounting of the bumper and providing protection to the cab.

The bumper extension's cross section is considered expendable, and a crush zone. The bumper is not intended for pushing other vehicles or objects.

Tow hooks/eyes located under the bumper extension are for straight pull only.

**TOW EYES**

Two (2) chromed steel tow eyes shall be installed under the bumper and attached to the front frame members. The inner and outer edges of the tow eyes shall have a .25" radius.

The tow eyes 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 eyes shall not be used for lifting of the apparatus.

**BUMPER TRAY**

A 3/4 width bumper tray, constructed of smooth aluminum, shall be located in the bumper extension.

The tray shall be a bolted modular design, 9.25" deep. The tray shall have capacity for 200' 1.75" DJ hose .

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

**HOSE TRAY COVER**

A bright aluminum treadplate cover shall be provided over the hose tray. The cover shall be flush with the gravel pan.

The cover shall be attached with a stainless steel hinge.

The cover shall be secured with D-ring latch on each side in the closed position and pneumatic stay arm on each side shall hold the cover in the open position.

**CAB**

The cab shall be designed specifically for the fire service and manufactured by the chassis builder.

	Bidder Complies	
	Yes	No
<p>The cab shall be built by the apparatus manufacturer in a facility located on the manufacturer's premises (no exception).</p> <p>For reasons of structural integrity and enhanced occupant protection, the cab shall be a heavy duty design, constructed to the following minimal standards.</p> <p>The cab shall have 12 main vertical structural members located in the A-pillar (front cab corner posts), B-pillar (side center posts), C-pillar (rear corner posts), and rear wall areas. The A-pillar shall be constructed of solid A356-T5 aluminum castings. The B-pillar and C-pillar shall be constructed from 0.13" wall extrusions. The rear wall shall be constructed of two (2) 2.00" x 2.00" outer aluminum extrusions and two (2) 2.00" x 1.00" inner aluminum extrusions. All main vertical structural members shall run from the floor to 4.625" x 3.864" x 0.090" thick roof extrusions to provide a cage-like structure with the A-pillar and roof extrusions being welded into a 0.25" thick corner casting at each of the front corners of the roof assembly.</p> <p>The front of the cab shall be constructed of a 0.13" firewall plate, covered with a 0.090" front skin (for a total thickness of 0.22"), and reinforced with a full width x 0.50" thick cross-cab support located just below the windshield and fully welded to the engine tunnel. The cross-cab support shall run the full width of the cab and weld to each A-pillar, the 0.13" firewall plate, and the front skin.</p> <p>The cab floors shall be constructed of 0.125" thick aluminum plate and reinforced at the firewall with an additional 0.25" thick cross-floor support providing a total thickness of 0.375" of structural material at the front floor area. The front floor area shall also be supported with two (2) triangular 0.30" wall extrusions that also provides the mounting point for the cab lift. This tubing shall run from the floor wireway of the cab to the engine tunnel side plates, creating the structure to support the forces created when lifting the cab.</p> <p>The cab shall be 96.00" wide (outside door skin to outside door skin) to maintain maximum maneuverability (no exception).</p> <p>The forward cab section shall have an overall height (from the cab roof to the ground) of approximately 99.00". The crew cab section shall have a 10.00" raised roof, with an overall cab height of approximately 109.00". The overall height listed shall be calculated based on a truck configuration with the lowest suspension weight rating, the smallest diameter tires for the suspension, no water weight, no loose equipment weight, and no personnel weight. Larger tires, wheels, and suspension shall increase the overall height listed.</p> <p>The floor to ceiling height inside the crew cab shall be 63.50" in the forward facing outboard positions and 54.50" in the forward facing center position.</p> <p>The crew cab floor shall measure 46.00" from the rear wall to the back side of the rear facing seat risers.</p> <p>The medium block engine tunnel, at the rearward highest point (knee level), shall measure 61.50" to the rear wall. The big block engine tunnel shall measure 51.50" to the rear wall.</p>		

	Bidder Complies	
	Yes	No
<p>The crew cab shall be a totally enclosed design with the interior area completely open to improve visibility and verbal communication between the occupants.</p> <p>The cab shall be a full tilt cab style.</p> <p>A 3-point cab mount system with rubber isolators shall improve ride quality by isolating chassis vibrations from the cab.</p> <p><b><u>CAB ROOF DRIP RAIL</u></b>  For enhanced protection from inclement weather, a drip rail shall be furnished on the sides of the cab. The drip rail shall be painted to match the cab roof, and bonded to the sides of the cab. The drip rail shall extend the full length of the cab roof.</p> <p><b><u>CAB PUMP ENCLOSURE</u></b>  The rear of the cab shall be made to house the fire pump below the forward facing crew cab seats. The cab side panels shall be notched to accommodate the pump panel.</p> <p><b><u>INTERIOR CAB INSULATION</u></b>  The cab shall include 1.00" insulation in the ceiling, 1.50" insulation in the side walls, and 2.00" insulation in the rear wall to maximize acoustic absorption and thermal insulation.</p> <p><b><u>FENDER LINERS</u></b>  Full circular inner fender liners in the wheel wells shall be provided.</p> <p><b><u>PANORAMIC WINDSHIELD</u></b>  A one (1)-piece safety glass windshield shall be provided with over 2,775 square inches of clear viewing area. The windshield shall be full width and shall provide the occupants with a panoramic view. The windshield shall consist of three (3) layers: outer light, middle safety laminate, and inner light. The outer light layer shall provide superior chip resistance. The middle safety laminate layer shall prevent the windshield glass pieces from detaching in the event of breakage. The inner light shall provide yet another chip resistant layer. The cab windshield shall be bonded to the aluminum windshield frame using a urethane adhesive. A custom frit pattern shall be applied on the outside perimeter of the windshield for a finished automotive appearance.</p> <p><b><u>WINDSHIELD WIPERS</u></b>  Three (3) electric windshield wipers with washer shall be provided that meet FMVSS and SAE requirements.</p> <p>The washer reservoir shall be able to be filled without raising the cab.</p> <p><b><u>ENGINE TUNNEL</u></b>  Engine hood side walls shall be constructed of 0.375" aluminum. The top shall be constructed of 0.125" aluminum and shall be tapered at the top to allow for more driver and passenger elbow room.</p>		

	Bidder Complies	
	Yes	No
<p>The engine hood shall be insulated for protection from heat and sound. The noise insulation keeps the dBA level within the limits stated in the current NFPA 1901 standards.</p> <p>The engine tunnel shall be no higher than 17.00" off the crew cab floor (no exception).</p> <p><b><u>CAB REAR WALL EXTERIOR COVERING</u></b></p> <p>The exterior surface of the rear wall of the cab shall be overlaid with bright aluminum treadplate that covers the entire rear wall.</p> <p><b><u>CAB LIFT</u></b></p> <p>A hydraulic cab lift system shall be provided consisting of an electric powered hydraulic pump, dual lift cylinders, and necessary hoses and valves.</p> <p>Lift controls shall be located on the right side pump panel or front area of the body in a convenient location.</p> <p>The cab shall be capable of tilting 43 degrees to accommodate engine maintenance and removal.</p> <p>The cab shall be locked down by a 2-point normally closed spring loaded hook type latch that fully engages after the cab has been lowered. The system shall be hydraulically actuated to release the normally closed locks when the cab lift control is in the raised position and cab lift system is under pressure. When the cab is completely lowered and system pressure has been relieved, the spring loaded latch mechanisms shall return to the normally closed and locked position.</p> <p>The hydraulic cylinders shall be equipped with a velocity fuse that protects the cab from accidentally descending when the control is located in the tilt position.</p> <p>For increased safety, a redundant mechanical stay arm shall be provided that must be manually put in place on the left side between the chassis and cab frame when the cab is in the raised position. This device shall be manually stowed to its original position before the cab can be lowered.</p> <p><b><u>Cab Lift Interlock</u></b></p> <p>The cab lift system shall be interlocked to the parking brake. The cab tilt mechanism shall be active only when the parking brake is set and the ignition switch is in the on position. If the parking brake is released, the cab tilt mechanism shall be disabled.</p> <p><b><u>GRILLE</u></b></p> <p>A bright finished aluminum mesh grille screen, inserted behind a bright finished grille surround, shall be provided on the front center of the cab.</p> <p><b><u>DOOR JAMB SCUFFPLATES</u></b></p> <p>All cab door jambs shall be furnished with a polished stainless steel scuffplate, mounted on the striker side of the jamb.</p>		

	Bidder Complies	
	Yes	No
<p><b><u>TRIM BAND ON CAB FACE</u></b></p> <p>A band of 22 gauge patterned stainless steel trim shall be installed across the front of the cab, from door hinge to door hinge. The trim band shall be centered on the headlights and applied with two-sided tape. A 0.625" self-adhesive trim strip shall be applied around the perimeter of the trim band.</p> <p><b><u>SIDE OF CAB MOLDING</u></b></p> <p>Chrome molding shall be provided on both sides of cab.</p> <p><b><u>MIRRORS</u></b></p> <p>A Retrac, Model 613423, dual vision, motorized, west coast style mirror, with chrome finish, shall be mounted on each side of the front cab door with spring loaded retractable arms. The flat glass and convex glass shall be heated and adjustable with remote control within reach of the driver.</p> <p><b><u>DOORS</u></b></p> <p>To enhance entry and egress to the cab, the forward cab doors shall be a minimum of 37.50" wide x 75.50" high. The crew cab doors shall be located on the sides of the cab and shall be constructed in the same manner as the forward cab doors. The crew cab door openings shall be a minimum of 34.30" wide x 85.50" high.</p> <p>The forward cab and crew cab doors shall be constructed of extruded aluminum with a nominal material thickness of 0.093". The exterior door skins shall be constructed from 0.090" aluminum.</p> <p>A customized, vertical, pull-down type door handle shall be provided on the exterior of each cab door. The exterior handle shall be designed specifically for the fire service to prevent accidental activation, and shall provide 4.00" wide x 2.00" deep hand clearance for ease of use with heavy gloved hands.</p> <p>Each door shall also be provided with an interior flush, open style paddle handle that shall be readily operable from fore and aft positions, and be designed to prevent accidental activation. The interior handles shall provide 4.00" wide x 1.25" deep hand clearance for ease of use with heavy gloved hands.</p> <p>The cab doors shall be provided with both interior (rotary knob) and exterior (keyed) locks exceeding FMVSS standards. The keys shall be Model 751. The locks shall be capable of activating when the doors are open or closed. The doors shall remain locked if locks are activated when the doors are opened, then closed.</p> <p>A full length, heavy duty, stainless steel, piano-type hinge with a 0.38" pin and 11 gauge leaf shall be provided on all cab doors. There shall be double automotive-type rubber seals around the perimeter of the door framing and door edges to ensure a weather-tight fit.</p> <p>A chrome grab handle shall be provided on the inside of each cab door for ease of entry.</p>		

	Bidder Complies	
	Yes	No
<p>A red webbed grab handle shall be installed on the crew cab door stop strap. The grab handles shall be securely mounted.</p> <p>The cab steps at each cab door location shall be located inside the cab doors to protect the steps from weather elements.</p> <p><b><u>Door Panels</u></b> The inner cab door panels shall be constructed out of brushed stainless steel.</p> <p><b><u>ELECTRIC OPERATED CAB DOOR WINDOWS</u></b> All four (4) cab doors shall be equipped with electric operated windows with one (1) flush mounted automotive style switch on each door. The driver's door shall have four (4) switches, one (1) to control each door window.</p> <p>Each switch shall allow intermittent or auto down operation for ease of use. Auto down operation shall be actuated by holding the window down switch for approximately 1 second.</p> <p><b><u>CAB STEPS</u></b> The forward cab and crew cab access steps shall be a full size two (2) step design to provide largest possible stepping surfaces for safe ingress and egress. The bottom steps shall be designed with a grip pattern punched into bright aluminum treadplate material to provide support, slip resistance, and drainage. The bottom steps shall be a bolt-in design to minimize repair costs should they need to be replaced. The forward cab steps shall be a minimum 25.00" wide, and the crew cab steps shall be 21.65" wide with a 10.00" minimum depth. The inside cab steps shall not exceed 16.50" in height.</p> <p>The vertical surfaces of the step well shall be aluminum treadplate.</p> <p><b><u>CAB EXTERIOR HANDRAILS</u></b> A 1.25" diameter slip-resistant, knurled aluminum handrail shall be provided adjacent to each cab and crew cab door opening to assist during cab ingress and egress.</p> <p><b><u>STEP LIGHTS</u></b> There shall be six (6) white LED step lights installed for cab and crew cab access steps.</p> <ul style="list-style-type: none"> <li>• One (1) light for the driver's access steps.</li> <li>• Two (2) lights for the driver's side crew cab access steps.</li> <li>• Two (2) lights for the passenger's side crew cab access steps.</li> <li>• One (1) light for the passenger's side access step.</li> </ul> <p>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.</p> <p>The lights shall be activated when the battery switch is on and the adjacent door is opened.</p>		

	Bidder Complies	
	Yes	No
<p><b><u>FENDER CROWNS</u></b> Stainless steel fender crowns shall be installed at the cab wheel openings.</p> <p><b><u>CREW CAB WINDOWS</u></b> One (1) fixed window with tinted glass shall be provided on each side of the cab, to the rear of the front cab door. The windows shall be sized to enhance light penetration into the cab interior. The windows shall measure 18.70" wide x 23.75" high.</p> <p><b><u>WORK SURFACE ON ENGINE TUNNEL</u></b> There shall be a work surface provided on the engine tunnel. The work surface shall cover the entire engine tunnel and follow the width of the engine tunnel. It shall be constructed of 0.25" aluminum.</p> <p>The beginning of the work surface shall be spaced 1.00" off the top surface of the engine tunnel. The work surface shall be flat from the front of the engine tunnel to the beginning of the lower flat section of the engine tunnel. The work surface shall flange down 90 degrees at the beginning of the lower flat section and then extend to the rear of the engine tunnel. The rear of the work surface shall be spaced 1.00" off the engine tunnel. The work surface shall be open on the sides to allow for equipment to be mounted underneath it.</p> <p>The mounting surface shall be painted to match the cab interior.</p> <p><b><u>CAB INTERIOR</u></b> The cab interior shall be constructed of primarily metal (painted aluminum) to withstand the severe duty cycles of the fire service.</p> <p>The officer side dash shall be a flat faced design to provide easy maintenance and shall be constructed out of painted aluminum.</p> <p>The instrument cluster shall be surrounded with a high impact ABS plastic contoured to the same shape of the instrument cluster.</p> <p>The engine tunnel shall be padded and covered, on the top and sides, with dark silver gray 36 ounce leather grain vinyl resistant to oil, grease, and mildew.</p> <p>For durability and ease of maintenance, the cab interior side walls shall be painted aluminum. The rear wall shall be painted aluminum.</p> <p>Headliner shall be installed in both forward and rear cab sections. Headliner material shall be vinyl. A sound barrier shall be part of its composition. Material shall be installed on aluminum sheet and securely fastened to interior cab ceiling.</p> <p>Forward portion of cab headliner shall permit easy access for service of electrical wiring or other maintenance needs.</p> <p>All wiring shall be placed in metal raceways. Routing through holes in tubing shall not be accepted due to chaffing that installation shall cause.</p>		

	Bidder Complies	
	Yes	No
<p><b><u>CAB INTERIOR UPHOLSTERY</u></b> The cab interior upholstery shall be 36 oz dark silver gray vinyl.</p> <p><b><u>CAB INTERIOR PAINT</u></b> The cab interior metal surfaces, excluding the rear heater panels, shall be painted fire smoke gray, vinyl texture paint.  The rear heater panels shall be painted black, vinyl textured paint.</p> <p><b><u>CAB FLOOR</u></b> The cab and crew cab floor areas shall be covered with Polydamp™ acoustical floor mat consisting of a black pyramid rubber facing and closed cell foam decoupler.  The top surface of the material has a series of raised pyramid shapes evenly spaced, which offer a superior grip surface. Additionally, the material has a 0.25" thick closed cell foam (no water absorption) which offers a sound dampening material for reducing sound levels.</p> <p><b><u>DEFROST/AIR CONDITIONING SYSTEM</u></b> A ceiling mounted combination heater, defroster and air conditioning system shall be installed in the cab above the engine tunnel area.</p> <p><b><u>Cab Defroster</u></b> A 54,000 BTU heater-defroster unit with 690 SCFM of air flow shall be provided inside the cab. The heater-defrost shall be installed in the forward portion of the cab ceiling. Air outlets shall be strategically located in the cab header extrusion per the following:</p> <ul style="list-style-type: none"> <li>• One (1) adjustable shall be directed towards the left side cab window</li> <li>• One (1) adjustable shall be directed towards the right side cab window</li> <li>• Six (6) fixed outlets shall be directed at the windshield</li> </ul> <p>The defroster shall be capable of clearing 98 percent of the windshield and side glass when tested under conditions where the cab has been cold soaked at 0 degrees Fahrenheit for 10 hours, and a 2 ounce per square inch layer of frost/ice has been able to build up on the exterior windshield. The defroster system shall meet or exceed SAE J382 requirements.</p> <p><b><u>Cab/Crew Auxiliary Heater</u></b> There shall be one (1) 31,000 BTU auxiliary heater with 560 SCFM of air flow provided in each outboard rear facing seat risers with a dual scroll blower. An aluminum plenum incorporated into the cab structure used to transfer heat to the forward positions.</p> <p><b><u>Air Conditioning</u></b> A condenser shall be a 59,644 BTU output that meets and exceeds the performance specification shall be mounted on the radiator. Mounting the condenser below the cab or body would reduce the performance of the system and shall not be acceptable.</p>		

	Bidder Complies	
	Yes	No
<p>The air conditioning system shall be capable of cooling the average cab temperature from 100 degrees Fahrenheit to 75 degrees Fahrenheit at 50 percent relative humidity within 30 minutes. The cooling performance test shall be run only after the cab has been heat soaked at 100 degrees Fahrenheit for a minimum of 4 hours.</p> <p>The evaporator unit shall be installed in the rear portion of the cab ceiling over the engine tunnel. The evaporator shall include one (1) high performance heating core, one (1) high performance cooling core with (1) plenum directed to the front and one (1) plenum directed to the rear of the cab.</p> <p>The evaporator unit shall have a 52,000 BTU at 690 SCFM rating that meets and exceeds the performance specifications.</p> <p>Adjustable air outlets shall be strategically located on the forward plenum cover per the following:</p> <ul style="list-style-type: none"> <li>• Four (4) shall be directed towards the seating position on the left side of the cab</li> <li>• Four (4) shall be directed towards the seating position on the right side of the cab</li> </ul> <p>Adjustable air outlets shall be strategically located on the evaporator cover per the following:</p> <ul style="list-style-type: none"> <li>• Five (5) shall be directed towards crew cab area</li> </ul> <p>A high efficiency particulate air (HEPA) filter shall be included for the system. Access to the filter cover shall be secured with four (4) screws.</p> <p>The air conditioner refrigerant shall be R-134A and shall be installed by a certified technician.</p> <p><b><u>Climate Control</u></b></p> <p>An automotive style controller shall be provided to control the heat and air conditioning system within the cab. The controller shall have three (3) functional knobs for fan speed, temperature, and air flow distribution (front to rear) control.</p> <p>The system shall control the temperature of the cab and crew cab automatically by pushing the center of the fan speed control knob. Rotate the center temperature control knob to set the cab and crew cab temperature.</p> <p>The AC system shall be manually activated by pushing the center of the temperature control knob. Pushing the center of the air flow distribution knob shall engage the AC for max defrost, setting the fan speeds to 100 percent and directing all air flow to the overhead forward position.</p> <p>The system controller shall be located within panel position #12.</p> <p><b><u>Gravity Drain Tubes</u></b></p> <p>Two (2) condensate drain tubes shall be provided for the air conditioning evaporator. The drip pan shall have two (2) drain tubes plumbed separately to allow for the condensate to exit the drip pan. No pumps shall be provided.</p>		

Bidder Complies	
Yes	No

**CAB DEFROSTER**

To provide maximum defrost and heating performance, a 43,500 BTU heater-defroster unit with 350 CFM of air flow shall be provided inside the cab. The defroster unit shall be strategically located under the center forward portion of the vacuum formed instrument panel. For easy access, a removable vacuum formed cover shall be installed over the defroster unit. The defroster shall include an integral aluminum frame air filter, high performance dual scroll blowers, and ducts designed to provide maximum defrosting capabilities for the 1-piece windshield. The defroster ventilation shall be built into the design of the cab dash instrument panel and shall be easily removable for maintenance. The defroster shall be capable of clearing 98 percent of the windshield and side glass when tested under conditions where the cab has been cold soaked at 0 degrees Fahrenheit for 10 hours, and a 2 ounce per square inch layer of frost/ice has been able to build up on the exterior windshield. The defroster system shall meet or exceed SAE J382 requirements.

**SUN VISORS**

Two (2) smoked Lexan™ sun visors provided. The sun visors shall be located above the windshield with one (1) mounted on each side of the cab.

There shall be a polished stainless steel bracket provided to help secure each sun visor in the stowed position.

**GRAB HANDLES**

A black rubber covered grab handle shall be mounted on the door post of the driver and officer's side cab door to assist in entering the cab. The grab handles shall be securely mounted to the post area between the door and windshield.

**ENGINE COMPARTMENT LIGHTS**

There shall be one (1) Whelen, Model 3SC0CDCR, 12 volt DC, 3.00" white LED light(s) with Whelen, Model 3FLANGEC, chrome flange kit(s) installed under the cab to be used as engine compartment illumination.

These light(s) shall be activated automatically when the cab is raised.

**ACCESS TO ENGINE DIPSTICKS**

For access to the engine oil and transmission fluid dipsticks, there shall be a door on the engine tunnel, inside the crew cab. The door shall be on the rear wall of the engine tunnel, on the vertical surface.

The engine oil dipstick shall allow for checking only. The transmission dipstick shall allow for both checking and filling.

The door shall have a rubber seal for thermal and acoustic insulation. One (1) flush latch shall be provided on the access door.

	Bidder Complies	
	Yes	No
<p><b><u>MAP BOX</u></b>  A map box with four (4) bins, open from top, shall be installed tbd at pick up. The map box shall be divided into four (4) bins, each being 12.50" wide x 2.25" high x 12.00" deep. Each bin shall slant 30 degrees from horizontal. The map box shall be constructed of .125" aluminum and shall be painted to match the cab interior.</p> <p><b><u>SEATING CAPACITY</u></b>  The seating capacity in the cab shall be five (5).</p> <p><b><u>DRIVER SEAT</u></b>  A Seats Incorporated, 911, scissor action, air ride, mid-height with headrest style seat shall be provided in the cab for the driver.</p> <p><b><u>OFFICER SEAT</u></b>  A Seats Incorporated, 911, scissor action air ride style SCBA seat shall be provided in the cab for the officer.</p> <p>The SCBA cavity shall be adjustable front to rear in 0.50" increments to accommodate different size SCBA bottles. Moving the SCBA cavity shall be accomplished by unbolting, relocating and re-bolting in the desired location.</p> <p><b><u>REAR FACING DRIVER SIDE OUTBOARD SEAT</u></b>  One (1) rear facing, Seats Incorporated 911 SCBA seat shall be provided in the driver side outboard position in crew cab. The SCBA cavity shall be adjustable front to rear in 0.50" increments to accommodate different size SCBA bottles.</p> <p>Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting in the desired location.</p> <p><b><u>REAR FACING PASSENGER SIDE OUTBOARD SEAT</u></b>  There shall be one (1) rear facing, Seats Incorporated 911 SCBA seat provided at the passenger side outboard position in the crew cab.</p> <p>The SCBA cavity shall be adjustable front to rear in 0.50" increments to accommodate different size SCBA bottles. Moving the SCBA cavity shall be accomplished by unbolting, relocating and re-bolting in the desired location.</p> <p>The seat shall be furnished with a 3-point, shoulder type seat belt.</p> <p><b><u>FORWARD FACING LEFT SIDE CABINET</u></b>  A forward facing cabinet shall be provided in the crew cab located at the left side outboard position. The cabinet extend over the pump notch.</p> <p>The cabinet shall be 30.00" wide x 58.50" high in the outboard and 50.00" toward the center x 16.25" deep with one (1) Amdor rollup door with anodized finish, non-locking. The frame to frame opening of the cabinet shall be 27.50" wide x 44.75" high. The minimum clear door opening will be 24.75" wide x 38.87" high. The door shall stop at the pump notch.</p>		

	Bidder Complies	
	Yes	No
<p>The cabinet shall include two (2) infinitely adjustable shelves with a 0.75" up-turned lipped to match the cab interior.</p> <p>The cabinet shall be constructed of smooth aluminum and painted to match the cab interior.</p> <p><b><u>CABINET LIGHT</u></b></p> <p>There shall be one (1) white LED strip light installed on the right side of the interior cabinet door opening. The lighting shall be controlled by an automatic door switch.</p> <p><b><u>FORWARD FACING CENTER SEAT</u></b></p> <p>There shall be one (1) forward facing, Seats Incorporated 911 SCBA seat provided at the center position in the crew cab. The SCBA cavity shall be adjustable front to rear in 0.50" increments to accommodate different size SCBA bottles.</p> <p>Moving the SCBA cavity shall be accomplished by unbolting, relocating and re-bolting in the desired location.</p> <p>The seat shall be furnished with a 3-point, shoulder type seat belt.</p> <p><b><u>SEAT UPHOLSTERY</u></b></p> <p>All seat upholstery shall be black Turnout Tuff material.</p> <p><b><u>AIR BOTTLE HOLDERS</u></b></p> <p>All SCBA type seats in the cab shall have a "Hands-Free" auto clamp style bracket in its backrest. For efficiency and convenience, the bracket shall include an automatic spring clamp that allows the occupant to store the SCBA bottle by simply pushing it into the seat back. For protection of all occupants in the cab, in the event of an accident, the inertial components within the clamp shall constrain the SCBA bottle in the seat and shall exceed the NFPA standard of 9G. Bracket designs with manual restraints (belts, straps, buckles) that could be inadvertently left unlocked and allow the SCBA to move freely within the cab during an accident, shall not be acceptable.</p> <p>There shall be a quantity of four (4) SCBA brackets.</p> <p><b><u>SEAT BELTS</u></b></p> <p>All cab and tiller cab (if applicable) seating positions shall have red seat belts. The seat belts shall be furnished with a single automatic retractor. To provide quick, easy use for occupants wearing bunker gear, the female buckle and seat belt webbing length shall meet or exceed the current edition of NFPA 1901 and CAN/ULC - S515 standards.</p> <p>The 3-point shoulder type belts shall also include the ReadyReach D-loop assembly to the shoulder belt system. The ReadyReach feature adds an extender arm to the D-loop location placing the D-loop in a closer, easier to reach location.</p> <p>Any flip up seats shall include a 3-point shoulder type belts only.</p>		

	Bidder Complies	
	Yes	No
<p>To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle that shall activate an alarm indicating a seat is occupied but not buckled.</p> <p><b><u>HELMET STORAGE PROVIDED BY FIRE DEPARTMENT</u></b>            NFPA 1901, 2016 edition, section 14.1.7.4.1 requires a location for helmet storage be provided.</p> <p>There is no helmet storage on the apparatus as manufactured. The fire department shall provide a location for storage of helmets.</p> <p><b><u>CAB DOME LIGHTS</u></b>            There shall be four (4) dual LED dome lights with black bezels provided. Two (2) lights shall be mounted above the inside shoulder of the driver and officer and two (2) lights shall be installed and located, one (1) on each side of the crew cab.</p> <p>The color of the LED's shall be red and white.</p> <p>The white LED's shall be controlled by the door switches and the lens switch.</p> <p>The color LED's shall be controlled by the lens switch.</p> <p>In order to ensure exceptional illumination, each white LED dome light shall provide a minimum of 10.1 foot-candles (fc) covering an entire 20.00" x 20.00" square seating position when mounted 40.00" above the seat.</p> <p><b><u>HAND HELD LIGHT</u></b>            There shall be two (2) Streamlight E-Spot, FireBox Vehicle Mount Systems, Model 45865, LED hand held flashlights with an orange thermoplastic body provided.</p> <p>The location shall be tbd.</p> <p>The system shall include the hand light, a charger and the vehicle mount system.</p> <p><b><u>CAB INSTRUMENTATION</u></b>            The cab instrument panel shall be a molded ABS panel and include gauges, telltale indicator lamps, control switches, alarms, and a diagnostic panel. The function of the instrument panel controls and switches shall be identified by a label adjacent to each item. Actuation of the headlight switch shall illuminate the labels in low light conditions. Telltale indicator lamps shall not be illuminated unless necessary. The cab instruments and controls shall be conveniently located within the forward cab section, forward of the driver. The gauge assembly and switch panels are designed to be removable for ease of service and low cost of ownership.</p> <p><b><u>Gauges</u></b>            The gauge panel shall include the following ten (10) black faced gauges with black bezels to monitor vehicle performance:</p> <ul style="list-style-type: none"> <li>• Voltmeter gauge (volts):               <ul style="list-style-type: none"> <li>○ Low volts (11.8 VDC)</li> </ul> </li> </ul>		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>▪ Amber telltale light on indicator light display with steady tone alarm</li> </ul> </li> <li>○ High volts (15.5 VDC) <ul style="list-style-type: none"> <li>▪ Amber telltale light on indicator light display with steady tone alarm</li> </ul> </li> <li>• Engine Tachometer (RPM)</li> <li>• Speedometer MPH (Major Scale), KM/H (Minor Scale)</li> <li>• Fuel level gauge (Empty - Full in fractions): <ul style="list-style-type: none"> <li>○ Low fuel (1/8 full) <ul style="list-style-type: none"> <li>▪ Amber indicator light in gauge dial with steady tone alarm</li> </ul> </li> </ul> </li> <li>• Engine Oil pressure Gauge (PSI): <ul style="list-style-type: none"> <li>○ Low oil pressure to activate engine warning lights and alarms <ul style="list-style-type: none"> <li>▪ Red indicator light in gauge dial with steady tone alarm</li> </ul> </li> </ul> </li> <li>• Front Air Pressure Gauges (PSI): <ul style="list-style-type: none"> <li>○ Low air pressure to activate warning lights and alarm <ul style="list-style-type: none"> <li>▪ Red indicator light in gauge dial with steady tone alarm</li> </ul> </li> </ul> </li> <li>• Rear Air Pressure Gauges (PSI): <ul style="list-style-type: none"> <li>○ Low air pressure to activate warning lights and alarm <ul style="list-style-type: none"> <li>▪ Red indicator light in gauge dial with steady tone alarm</li> </ul> </li> </ul> </li> <li>• Transmission Oil Temperature Gauge (Fahrenheit): <ul style="list-style-type: none"> <li>○ High transmission oil temperature activates warning lights and alarm <ul style="list-style-type: none"> <li>▪ Amber indicator light in gauge dial with steady tone alarm</li> </ul> </li> </ul> </li> <li>• Engine Coolant Temperature Gauge (Fahrenheit): <ul style="list-style-type: none"> <li>○ High engine temperature activates an engine warning light and alarms <ul style="list-style-type: none"> <li>▪ Red indicator light in gauge dial with steady tone alarm</li> </ul> </li> </ul> </li> <li>• Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions): <ul style="list-style-type: none"> <li>○ Low fluid (1/8 full) <ul style="list-style-type: none"> <li>▪ Amber indicator light in gauge dial</li> </ul> </li> </ul> </li> </ul> <p><b><u>Indicator Lamps</u></b></p> <p>To promote safety, the following telltale indicator lamps shall be located on the instrument panel in clear view of the driver. The indicator lamps shall be "dead-front" design that is only visible when active. The colored indicator lights shall have descriptive text or symbols.</p> <p>The following amber telltale lamps shall be present:</p> <ul style="list-style-type: none"> <li>• Low coolant</li> <li>• Trac cntl (traction control) (where applicable)</li> <li>• Check engine</li> <li>• Check trans (check transmission)</li> <li>• Air rest (air restriction)</li> <li>• DPF (engine diesel particulate filter regeneration)</li> <li>• HET (engine high exhaust temperature) (where applicable)</li> <li>• ABS (antilock brake system)</li> <li>• MIL (engine emissions system malfunction indicator lamp) (where applicable)</li> </ul>		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <li>• Regen inhibit (engine emissions regeneration inhibit) (where applicable)</li> <li>• Side roll fault (where applicable)</li> <li>• Front air bag fault (where applicable)</li> <li>• Aux brake overheat (auxiliary brake overheat) (where applicable)</li> <li>• The following red telltale lamps shall be present: <ul style="list-style-type: none"> <li>• Ladder rack down</li> <li>• Parking brake</li> <li>• Stop engine</li> </ul> </li> <li>• The following green telltale lamps shall be present: <ul style="list-style-type: none"> <li>• Left turn</li> <li>• Right turn</li> <li>• Battery on</li> <li>• Ignition</li> </ul> </li> <li>• Aux brake (auxiliary brake engaged) (where applicable)</li> <li>• The following blue telltale lamps shall be present: <ul style="list-style-type: none"> <li>• High beam</li> </ul> </li> </ul> <p><b><u>Alarms</u></b> Audible steady tone warning alarm: A steady audible tone alarm shall be provided whenever a warning condition is active.</p> <p><b><u>Indicator Lamp and Alarm Prove-Out</u></b> A system shall be provided which automatically tests telltale indicator lights and alarms located on the cab instrument panel. Telltale indicators and alarms shall perform prove-out for 3 to 5 seconds when the ignition switch is moved to the on position with the battery switch on.</p> <p><b><u>Control Switches</u></b> For ease of use, the following controls shall be provided immediately adjacent to the cab instrument panel within easy reach of the driver. All switches shall have backlit labels for low light applications.</p> <p>Headlight/Parking light switch: A three (3)-position maintained rocker switch shall be provided. The first switch position shall deactivate all parking and headlights. The second switch position shall activate the parking lights. The third switch shall activate the headlights.</p> <p>Panel back lighting intensity control switch: A three (3)-position momentary rocker switch shall be provided. Pressing the top half of the switch, "Panel Up" increases the panel back lighting intensity and pressing the bottom half of the switch, "Panel Down" decreases the panel back lighting intensity. Pressing the half or bottom half of the switch several times shall allow back lighting intensity to be gradually varied from minimum to maximum intensity level for ease of use.</p> <p>Ignition switch: A three (3)-position maintained/momentary rocker switch shall be provided. The first switch position shall turn off and deactivate vehicle ignition. The second switch</p>		

	Bidder Complies	
	Yes	No
<p>position shall activate vehicle ignition and shall perform prove-out on the telltale indicators and alarms for 3 to 5 seconds after the switch is turned on. A green indicator lamp is activated with vehicle ignition. The third momentary position shall temporarily silence all active cab alarms. An alarm "chirp" may continue as long as alarm condition exists. Switching ignition to off position shall terminate the alarm silence feature and reset function of cab alarm system.</p> <p>Engine start switch: A two (2)-position momentary rocker switch shall be provided. The first switch position is the default switch position. The second switch position shall activate the vehicle's engine. The switch actuator is designed to prevent accidental activation.</p> <p>Hazard switch shall be provided on the instrument panel or on the steering column.</p> <p>Heater and defroster controls.</p> <p>Turn signal arm: A self-canceling turn signal with high beam headlight controls.</p> <p>Windshield wiper control shall have high, low, and intermittent modes.</p> <p>Parking brake control: An air actuated push/pull park brake control.</p> <p>Chassis horn control: Activation of the chassis horn control shall be provided through the center of the steering wheel.</p> <p>High idle engagement switch: A maintained rocker switch with integral indicator lamp shall be provided. The switch shall activate and deactivate the high idle function. The "OK To Engage High Idle" indicator lamp must be active for the high idle function to engage. A green indicator lamp integral to the high idle engagement switch shall indicate when the high idle function is engaged.</p> <p>"OK To Engage High Idle" indicator lamp: A green indicator light shall be provided next to the high idle activation switch to indicate that the interlocks have been met to allow high idle engagement.</p> <p>Emergency switching shall be controlled by multiple individual warning light switches for various groups or areas of emergency warning lights. An Emergency Master switch provided on the instrument panel that enables or disables all individual warning light switches is included.</p> <p>An additional "Emergency Master" button shall be provided on the lower left hand corner of the gauge panel to allow convenient control of the "Emergency Master" system from inside the driver's door when standing on the ground.</p> <p><b><u>Custom Switch Panels</u></b></p> <p>The design of cab instrumentation shall allow for emergency lighting and other switches to be placed within easy reach of the operator thus improving safety. There shall be positions for up to four (4) switch panels in the lower instrument console and up to six (6) switch panels in the overhead visor console. All switches have backlit labels for low light conditions.</p>		

Bidder Complies	
Yes	No

**Diagnostic Panel**

A diagnostic panel shall be provided and accessible while standing on the ground. The panel shall be located inside the driver's side door left of the steering column. The diagnostic panel shall allow diagnostic tools such as computers to connect to various vehicle systems for improved troubleshooting providing a lower cost of ownership. Diagnostic switches shall allow ABS systems to provide blink codes should a problem exist.

The diagnostic panel shall include the following:

- ENGINE/TRANSMISSION/ABS J1939 Diagnostic Port
- ABS Diagnostic Switch and Indicator - The switch and amber indicator shall allow access to diagnostic mode and display of standard ABS system fault blink codes that may be generated by the ABS system
- DPF REGEN (Diesel Particulate Filter Regeneration Switch) (where applicable) shall be provided to request regeneration of the engine emission system. An amber indicator shall be provided on top of the switch that shall illuminate in a "CHECK ENGINE" condition
- REGEN INHIBIT (Diesel Particulate Filter Regeneration Inhibit Switch) (where applicable) shall be provided that shall request that regeneration be temporarily prevented. A green indicator shall be provided on top of the Regen Inhibit switch that shall illuminate when the Regen Inhibit feature is active. Regen Inhibit shall be disabled upon cycling of the ignition switch to the off state.

**AIR RESTRICTION INDICATOR**

A high air restriction warning indicator light (electronic) shall be provided.

**"DO NOT MOVE APPARATUS" INDICATOR**

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

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

**SWITCH PANELS**

The built-in switch panels shall be located in the lower console or overhead console of the cab. Switches shall be rocker type with an indicator light, of which is an integral part of the switch.

**WIPER CONTROL**

Wiper control shall consist of a two (2)-speed windshield wiper control with intermittent feature and windshield washer controls.

**SPARE CIRCUIT**

There shall be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

Bidder Complies	
Yes	No

The above wires shall have the following features:

- The positive wire shall be connected directly to the battery power.
- The negative wire shall be connected to ground.
- Wires shall be protected to 2.0 amps at 12 volts DC.
- Power and ground shall terminate officer side dash.
- Termination shall be a Blue Sea Systems part number 1016 dual USB charger socket.
- Wires shall be sized to 125 percent of the protection.

This circuit(s) may be load managed when the parking brake is applied.

**SPARE CIRCUIT**

There shall be three (3) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires shall have the following features:

- The positive wire shall be connected directly to the battery power
- The negative wire shall be connected to ground
- Wires shall be protected to 15 amps at 12 volts DC
- Power and ground shall terminate officer side dash area and in EMS compartment(s)
- Termination shall be with 15 amp, power point plug with rubber cover
- Wires shall be sized to 125 percent of the protection

The circuit(s) may be load managed when the parking brake is set.

**INFORMATION CENTER**

There shall be a LCD display integral to the cab gauge panel provided that shall display the following information:

- Total distance
- Trip distance
- Total hours
- Trip hours
- PTO "A" hours
- PTO "B" hours

**COLLISION MITIGATION**

There shall be a HAAS Alert®, Model HA5 Responder-to-Vehicle (R2V) collision avoidance system provided on the apparatus. The HA5 cellular transponder module shall be installed behind the cab windshield, as high and near to the center as practical, to allow clear visibility to the sky. The module dimensions are 5.40" long x 2.70" wide x 1.30" high, and operating temperature range is -40 degree C to 85 degree C.

	Bidder Complies	
	Yes	No
<p>The transponder shall be connected to the vehicle's emergency master circuit and battery direct power and ground.</p> <p>While responding with emergency lights on, the HA5 transponder sends alert messages via cellular network to motorists in the vicinity of the responding truck that are equipped with the WAZE app.</p> <p>While on scene with emergency lights on, the HA5 transponder sends road hazard alerts to motorists in the vicinity of the truck that are equipped with the WAZE app.</p> <p>The HA5 Responder-to-Vehicle (R2V) collision avoidance system shall include the transponder and a 5 year cellular plan subscription.</p> <p>Activation of the HAAS Alert system requires a representative of the customer to accept the End User License Agreement (EULA) via an on-line portal.</p> <p><b><u>VEHICLE DATA RECORDER</u></b></p> <p>There shall be a vehicle data recorder (VDR) capable of reading and storing vehicle information provided.</p> <p>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 will be available to download on-line.</p> <p>The vehicle data recorder shall be capable of recording the following data via hardwired and/or CAN inputs:</p> <ul style="list-style-type: none"> <li>• Vehicle Speed - MPH</li> <li>• Acceleration - MPH/sec</li> <li>• Deceleration - MPH/sec</li> <li>• Engine Speed - RPM</li> <li>• Engine Throttle Position - % of Full Throttle</li> <li>• ABS Event - On/Off</li> <li>• Seat Occupied Status - Yes/No by Position</li> <li>• Seat Belt Buckled Status - Yes/No by Position</li> <li>• Master Optical Warning Device Switch - On/Off</li> <li>• Time - 24 Hour Time</li> <li>• Date - Year/Month/Day</li> </ul> <p><b><u>Seat Belt Monitoring System</u></b></p> <p>A seat belt monitoring system (SBMS) shall be provided. The SBMS shall be capable of monitoring up to 10 seating positions indicating the status of each seat position per the following:</p> <ul style="list-style-type: none"> <li>• Seat Occupied &amp; Buckled = Green LED indicator illuminated</li> </ul>		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <li>• Seat Occupied &amp; Unbuckled = Red LED indicator with audible alarm</li> <li>• No Occupant &amp; Buckled = Red LED indicator with audible alarm</li> <li>• No Occupant &amp; Unbuckled = No indicator and no alarm</li> </ul> <p>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.</p> <p><b><u>RADIO ANTENNA MOUNT</u></b>  There shall be one (1) standard 1.125", 18 thread antenna-mounting base(s) installed on the right side on the cab roof with high efficiency, low loss, coaxial cable(s) routed to the instrument panel area. A weatherproof cap shall be installed on the mount.</p> <p><b><u>VEHICLE CAMERA SYSTEM</u></b>  There shall be a color vehicle camera system provided with the following:</p> <ul style="list-style-type: none"> <li>• One (1) camera located at the rear of the apparatus, pointing rearward, displayed automatically with the vehicle in reverse.</li> </ul> <p>The camera image shall be displayed on a 7.00" LCD display located in view of the driver on the dash. The display shall include manual camera activation capability and audio from the active camera.</p> <p>The following components shall be included:</p> <ul style="list-style-type: none"> <li>• One (1) MO700136DC, display</li> <li>• One (1) SV-CW134639CAI, camera</li> <li>• All necessary cables</li> </ul> <p><b><u>RECESS REAR CAMERA</u></b>  A rear camera recess shall be provided in the center at the rear .</p> <p><b><u>ELECTRICAL POWER CONTROL SYSTEM</u></b>  A compartment shall be provided in or under the cab to house the vehicle's electrical power and signal circuit protection and control components. The power and signal protection and control compartment shall contain circuit protection devices and power control devices. Power and signal protection and control components shall be protected against corrosion, excessive heat, excessive vibration, physical damage and water spray.</p> <p>Serviceable components shall be readily accessible.</p> <p>Circuit protection devices, which conform to SAE standard, shall be utilized to protect each circuit. All circuit protection devices shall be sized to prevent wire and component damage when subjected to extreme current overload. General protection circuit breakers shall be Type-I automatic reset (continuously resetting) and conform to SAE J553 or J258. When required, automotive type fuses conforming to SAE J554, J1284, J1888 or J2077 shall be utilized to protect electronic equipment.</p>		

	Bidder Complies	
	Yes	No
<p>Power control relays and solenoids shall have a direct current (dc) rating of 125 percent of the maximum current for which the circuit is protected.</p> <p>Visual status indicators shall be supplied to identify control safety interlocks and vehicle status. In addition to visual status indicators, audible alarms designed to provide early warning of problems before they become critical shall be used.</p> <p><b><u>Voltage Monitor System</u></b>  A voltage monitor system shall be provided to indicate the status of each battery system connected to the vehicle's electrical load. The monitor system shall provide visual and audio warning when the system voltage is above or below optimum levels.</p> <p><b><u>Power and Ground Studs</u></b>  Spare circuits shall be provided in the primary distribution center for two-way radio equipment.</p> <p>The spare circuits shall consist of the following:</p> <ul style="list-style-type: none"> <li>• One (1) 12-volt DC, 30 amp battery direct spare</li> <li>• One (1) 12-volt DC ground and un-fused switched battery stud located in or adjacent to the power distribution center</li> </ul> <p><b><u>EMI/RFI Protection</u></b>  The electrical system proposed shall include means to control undesired electromagnetic and radio frequency emissions. State of the art electrical system design and components shall be used to ensure radiated and conducted EMI (electromagnetic interference) and RFI (radio frequency interference) emissions are suppressed at their source.</p> <p>The apparatus proposed shall have the ability to operate in the electromagnetic environment typically found in fire ground operations. The contractor shall be able to demonstrate the EMI and RFI testing has been done on similar apparatus and certifies that the vehicle proposed meets SAE J551 requirements.</p> <p>EMI/RFI susceptibility shall be controlled by applying immune circuit designs, shielding, twisted pair wiring and filtering. The electrical system shall be designed for full compatibility with low level control signals and high powered two-way radio communication systems. Harness and cable routing shall be given careful attention to minimize the potential for conducting and radiated EMI-RFI susceptibility.</p> <p><b><u>ELECTRICAL</u></b>  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</p>		

	Bidder Complies	
	Yes	No
<p>shall be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids.</p> <p>Electrical wiring and equipment shall be installed utilizing the following guidelines:</p> <ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>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).</li> <li>5. All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.</li> <li>6. All electrical terminals in exposed areas shall have silicon (1890) applied completely over the metal portion of the terminal.</li> </ol> <p>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.</p> <p>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.</p> <p>The results of the tests shall be recorded and provided to the purchaser at time of delivery.</p> <p><b><u>BATTERY SYSTEM</u></b></p> <p>There shall be six (6) 12 volt Exide®, Model 31S950X3W, batteries that include the following features shall be provided:</p> <ul style="list-style-type: none"> <li>• 950 CCA, cold cranking amps</li> <li>• 190 amp reserve capacity</li> <li>• High cycle</li> <li>• Group 31</li> <li>• Rating of 5700 CCA at 0 degrees Fahrenheit</li> <li>• 1140 minutes of reserve capacity</li> <li>• Threaded stainless steel studs</li> </ul>		

	Bidder Complies	
	Yes	No
<p>Each battery case shall be a black polypropylene material with a vertically ribbed container for increased vibration resistance. The cover shall be manifold vented with a central venting location to allow a 45 degree tilt capacity.</p> <p>The inside of each battery shall consist of a "maintenance free" grid construction with poly wrapped separators and a flooded epoxy bottom anchoring for maximum vibration resistance.</p> <p><b><u>BATTERY SYSTEM</u></b></p> <p>There shall be a single starting system with an ignition switch and starter button provided and located on the cab instrument panel.</p> <p><b><u>MASTER BATTERY SWITCH</u></b></p> <p>There shall be a master battery switch provided within the cab within easy reach of the driver to activate the battery system.</p> <p>An indicator light shall be provided on the instrument panel to notify the driver of the status of the battery system.</p> <p><b><u>BATTERY COMPARTMENTS</u></b></p> <p>Batteries shall be placed on non-corrosive mats and be stored in well ventilated compartments located under the cab.</p> <p>Heavy-duty battery cables shall be used to provide maximum power to the electrical system. Cables shall be color coded.</p> <p>Battery terminal connections shall be coated with anti-corrosion compound. Battery solenoid terminal connections shall be encapsulated with semi-permanent rubberized compound.</p> <p><b><u>JUMPER STUDS</u></b></p> <p>One (1) set of battery jumper studs with plastic color-coded covers shall be included on the battery compartments.</p> <p><b><u>BATTERY CHARGER</u></b></p> <p>There shall be an IOTA™, Model DSL 75, battery charger with IQ4, controller provided.</p> <p>The battery charger shall be wired to the AC shoreline inlet through an AC receptacle adjacent to this battery charger.</p> <p>There shall be a Kussmaul™, Model #091-94-12, remote indicator included.</p> <p>The battery charger shall be located in the left body compartment mounted on the left wall as high as possible.</p> <p>The battery charger indicator shall be located on the driver's seat riser.</p> <p><b><u>AUTO EJECT FOR SHORELINE</u></b></p> <p>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.</p>		

	Bidder Complies	
	Yes	No
<p>The shoreline inlet(s) shall include red weatherproof flip up cover(s).</p> <p>There shall be a release solenoid wired to the vehicle's starter to eject the AC connector when the engine is starting.</p> <p>The shoreline(s) shall be connected to the battery charger.</p> <p>There shall be a mating connector body supplied with the loose equipment.</p> <p>There shall be a label installed near the inlet(s) that state the following:</p> <ul style="list-style-type: none"> <li>• Line Voltage</li> <li>• Current Rating (amps)</li> <li>• Phase</li> <li>• Frequency</li> </ul> <p>The shoreline receptacle shall be located on the driver side of cab, above wheel.</p> <p><b><u>BATTERY DESULFATOR</u></b></p> <p>There shall be one (1) Canadus, Model HD-1224 battery desulfator installed in the chassis starting battery circuit.</p> <p><b><u>LINE-X COATING FOR BATTERY BOXES</u></b></p> <p>The battery boxes on both sides of cab shall have be sprayed with black Line-X polyurethane/polyurea elastomer abrasive resistant material on all interior side walls and on the bottom surface.</p> <p><b><u>ALTERNATOR</u></b></p> <p>A Leece-Neville, Model BLP4004H, alternator shall be provided. It shall have a rated output current of 350 amp as measured by SAE method J56. The alternator shall feature an integral, self diagnostic regulator and rectifier. The alternator shall be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.</p> <p><b><u>ELECTRONIC LOAD MANAGEMENT</u></b></p> <p>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.</p> <p>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.</p> <p><b><u>HEADLIGHTS</u></b></p> <p>There shall be four (4) JW Speaker®, Model 8800, 4" x 6" rectangular LED lights mounted in the front quad style, chrome housing on each side of the cab grille:</p>		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <li>the outside light on each side shall contain a part number 055***1 low beam module</li> <li>the inside light on each side shall contain a part number 055***1 high beam module</li> <li>the headlight to include chrome bezels</li> </ul> <p>The low beam lights shall be activated when the headlight switch is on.</p> <p>The high beam and low beam lights shall be activated when the headlight switch and the high beam switch is activated.</p> <p><b><u>DIRECTIONAL LIGHTS</u></b></p> <p>There shall be two (2) Whelen, Model 60A00T*R, amber LED populated arrow directional lights provided on the front of the cab, above the headlights. Each light shall be housed in the same quad common bezel as the front warning light. The lens color(s) to be clear.</p> <p><b><u>INTERMEDIATE LIGHT</u></b></p> <p>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.</p> <p><b><u>CAB CLEARANCE/MARKER/ID LIGHTS</u></b></p> <p>There shall be five (5) amber LED lights provided to indicate the presence and overall width of the vehicle in the following locations:</p> <ul style="list-style-type: none"> <li>Three (3) amber LED identification lights shall be installed in the center of the cab above the windshield.</li> <li>Two (2) amber LED clearance lights shall be installed, one (1) on each outboard side of the cab above the windshield.</li> </ul> <p><b><u>FRONT CAB SIDE DIRECTIONAL/MARKER LIGHTS</u></b></p> <p>There shall be two (2) Weldon, Model 9186-8580-29, amber LED lights installed front of the cab door, one (1) on each side of the cab.</p> <p>The lights shall activate as marker lights with the headlight switch and directional lights with the corresponding directional circuit.</p> <p><b><u>REAR CLEARANCE/MARKER/ID LIGHTING</u></b></p> <p>There shall be three (3) Truck-Lite®, Model 26250R, LED lights used as identification lights located at the rear of the apparatus per the following:</p> <ul style="list-style-type: none"> <li>As close as practical to the vertical centerline</li> <li>Centers spaced not less than 6.00" or more than 12.00" apart</li> <li>Red in color</li> <li>All at the same height</li> </ul> <p>There shall be two (2) Truck-Lite, Model 26250R, LED lights installed at the rear of the apparatus used as clearance lights located at the rear of the apparatus per the following:</p>		

Bidder Complies	
Yes	No

- 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) Truck-Lite, Model 26250R, LED lights installed on the side of the apparatus 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

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**

There shall be two (2) wrap around tri-cluster LED modules provided on the face of the rear body compartments.

Each tri-cluster shall include the following:

- One (1) LED stop/tail light
- One (1) LED directional light
- One (1) LED backup light

**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.

Bidder Complies	
Yes	No

**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.

**CAB PERIMETER SCENE LIGHTS**

There shall be four (4) Truck-lite, Model 60354C, 6.00" x 2.00" oval white LED lights with Model 60700, grommets provided, one (1) for each cab and crew cab door.

These lights shall be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body perimeter scene lights.

**PUMP HOUSE PERIMETER LIGHTS**

There shall be two (2) Truck-Lite, Model 44042C, 4.00" white LED 12 volt DC weatherproof lights with Model 40700, grommets provided under the pump panel running boards, one (1) each side.

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

**BODY PERIMETER SCENE LIGHTS**

There shall be two (2) Truck-Lite, Model 60354C, 6.00" x 2.00" oval LED lights with Model 60700, grommets provided at the rear step area on the body, one (1) each side shining to the rear.

The perimeter scene lights shall be activated when the battery switch is on and the parking brake is applied.

**STEP LIGHTS**

There shall be four (4) white LED step lights shall be provided at the rear to illuminate the tailboard/step area.

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 with the perimeter scene lights.

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

**SCENE LIGHTS**

There shall be four (4) Fire Research, Model SPA900-Q70 scene light(s) with chrome flange(s) installed on the side of the apparatus, one each side of cab and rear upper body.

A control for the light(s) selected above shall be the following:

	Bidder Complies	
	Yes	No
<p>a switch at the driver's side switch panel</p> <p>a switch at the passenger's side switch panel</p> <p>a switch at the pump operator's panel</p> <p>no additional switch location</p> <p>These lights may be load managed when the parking brake is set.</p> <p><b><u>12 VOLT LIGHTING</u></b></p> <p>There shall be two (2) Fire Research Spectra Max, Model SPA530-Q28, 12 volt DC LED scene light(s) provided on push up, side mount pole(s) located, each side back of cab.</p> <p>The painted parts of this light assembly to be white with a white bezel.</p> <p>The light(s) shall be controlled in the following way.</p> <ul style="list-style-type: none"> <li>• a switch at the driver's side switch panel</li> <li>• a switch at the passenger's side switch panel</li> <li>• a switch at the pump operator's panel</li> <li>• no additional switch location</li> </ul> <p>These light(s) may be load managed when the parking brake is applied.</p> <p>These lights shall be connected to the Do Not Move Truck Indicator circuit.</p> <p><b><u>HOSE BED LIGHTS</u></b></p> <p>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.</p> <ul style="list-style-type: none"> <li>• Light strip(s) shall be installed along the upper edge of the left side of the hose bed.</li> <li>• Light strip(s) shall be installed along the upper edge of the right side of the hose bed.</li> </ul> <p>The lights shall be activated by a cup switch at the rear of the apparatus no more than 72.00" from the ground.</p> <p><b><u>REAR WORK AREA LIGHTS</u></b></p> <p>There shall be two (2) Whelen®, part number 01-066C520-10, 3.00" x 7.00" white LED scene lights installed at the rear of the vehicle, under the tailboard, facing the rear. The lights shall have 12 white LEDs and have no internal optics. The lights shall be mounted on brackets below the truck so as to not interfere with the angle of departure.</p> <p>The lights shall be controlled by a switch at the driver's side switch panel.</p>		

Bidder Complies	
Yes	No

**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 two (2) HiViz Model FT-MB-15-\*, 2.56" high x 19.77" long x 3.31" deep 7,920 lumens 12 volt DC LED light(s) with with a combination of flood and spot optics provided on the front visor, one (1) on the left side and one (1) on the right side with 15 degree outward bracket.

The painted parts of the light housing and brackets to be white.

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 and by a switch at the passenger's side switch panel.

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

**WATER TANK**

Booster tank shall have a capacity of 750 gallons and be constructed of UV stabilized ultra high impact polypropylene plastic by a manufacturer with a minimum of 20 years experience building tanks, is ISO 9001:2000 certified in all its manufacturing facilities, and has over 50,000 tanks in service.

The booster tank shall be a form-fitting design that serves to keep the tank height as low as possible. The tank shall be no wider than 39.00" at the base to allow for greater compartment depth and no wider than 53.00" at the top.

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.

Tank top shall be sufficiently supported to keep it rigid during fast filling conditions.

	Bidder Complies	
	Yes	No
<p>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.</p> <p>A sump that will be sized dependent on the tank to pump plumbing shall be provided at the bottom of the water tank.</p> <p>Sump shall include a drain plug and the tank outlet.</p> <p>Tank shall be installed in a fabricated cradle assembly constructed of structural steel.</p> <p>Sufficient crossmembers shall be provided to properly support bottom of tank. Crossmembers shall be constructed of steel bar channel or rectangular tubing.</p> <p>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.</p> <p>Stops or other provision shall be provided to prevent an empty tank from bouncing excessively while moving vehicle.</p> <p>Mounting system shall be approved by the tank manufacturer.</p> <p>Fill tower shall be constructed of .50" polypropylene and shall be a minimum of 8.00" wide x 14.00" long.</p> <p>Fill tower shall be furnished with a .25" thick polypropylene screen and a hinged cover.</p> <p>An overflow pipe, constructed of 4.00" schedule 40 polypropylene, shall be installed approximately halfway down the fill tower and extend through the water tank and exit to the rear of the rear axle.</p> <p><b><u>BODY HEIGHT</u></b></p> <p>The height of the body shall be 92.00" from the bottom of the body to the top of the body.</p> <p><b><u>HOSE BED</u></b></p> <p>The hose bed shall be fabricated of .125"-5052 aluminum with a nominal 38,000 psi tensile strength.</p> <p>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.</p> <p>A cross divider shall be provided separating the front of the hose bed from the rear hose bed.</p> <p>Hose bed shall accommodate 1200 ft of 5 inch ldh, 400 ft of 2.5 inch dj and 300 ft 1.75 dj hose.</p>		

	Bidder Complies	
	Yes	No
<p><b><u>HOSE BED DIVIDER</u></b></p> <p>Two (2) adjustable hosebed dividers shall be furnished for separating hose.</p> <p>Each divider shall be constructed of a .125" brushed aluminum sheet fitted and fastened into a slotted, 1.50" diameter radiused extrusion along the top, bottom, and rear edge.</p> <p>Divider shall be fully adjustable by sliding in tracks, located at the front and rear of the hose bed.</p> <p>Divider shall be held in place by tightening bolts, at each end.</p> <p>Acorn nuts shall be installed on all bolts in the hose bed which have exposed threads.</p> <p>There shall be one (1) additional hose bed dividers provided.</p> <p>Each divider shall be constructed of brushed aluminum. The divider shall be "box" style and reinforced in order to support a hosebed cover or handrail mounting.</p> <p>Divider(s) shall not be adjustable. They shall be bolted permanently into the hosebed.</p> <p>Divider(s) shall be located Driver side inboard of access ladder.</p> <p><b><u>WALKWAY, IN HOSE BED</u></b></p> <p>A walkway constructed of non-slip aluminum treadplate shall be provided on top of the hose bed grating LS .</p> <p><b><u>HOSE BED COVER</u></b></p> <p>A two (2) section hose bed cover, constructed of .125" bright aluminum treadplate shall be furnished. The cover shall be hinged with full length stainless steel piano hinge. The sides shall be slanted down.</p> <p>The cover shall be reinforced so that it can support the weight of a man walking on the cover.</p> <p>The cover is designed with the left cover opening first.</p> <p>If access to the water tank fill tower is blocked by the hose bed cover, then a hinged door shall be provided in it so that the tank may be filled without raising cover doors.</p> <p>Chrome grab handles and four (4) gas filled cylinders shall be provided to assist in opening and closing the cover. A handrail is to be provided at the rear, in the center of the support, to assist in opening the cover.</p> <p>A red vinyl flap shall be installed on the rear of the bright aluminum treadplate hose bed cover, with a chain weight and a spring clip-and-hook hold downs shall be provided at the rear of the cover.</p> <p><b><u>RUNNING BOARDS</u></b></p> <p>A running board shall be provided on each side of the front body to allow access to the backboard/crosslay storage area. The running boards shall be designed with a grip pattern</p>		

	Bidder Complies	
	Yes	No
<p>punched into .125" bright aluminum treadplate material providing support, slip resistance, and drainage.</p> <p><b><u>TAILBOARD</u></b></p> <p>The tailboard shall be constructed of .125" bright aluminum treadplate and spaced .50" from the body, as well as supported by a structural steel assembly.</p> <p>The tailboard area shall be 12.00" deep and full width of the body.</p> <p>The exterior side shall be flanged down and in for increased rigidity of tailboard structure.</p> <p><b><u>REAR WALL, BODY MATERIAL</u></b></p> <p>The rear wall shall be smooth and the same material as the body.</p> <p>The rear wall body material shall be painted. Unpainted aluminum overlays shall be provided to allow for chevron application and to provide continuously smooth rear wall panels.</p> <p>The outboard edges of the rear wall shall be trimmed in polished stainless steel.</p> <p><b><u>TOW BARS</u></b></p> <p>Two (2) tow bars shall be installed under the tailboard.</p> <p>Tow bars shall be fabricated of 1.00" CRS bar rolled into a 3.00" radius.</p> <p>Tow bar assemblies shall be constructed of .38" structural angle. When force is applied to the bar, it shall be transmitted to the frame rail.</p> <p>Tow bar assemblies 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.</p> <p>Tow bar design shall have been fully tested and evaluated using strain gauge testing and finite element analysis techniques.</p> <p><b><u>HITCH RECEIVER</u></b></p> <p>A hitch receiver shall be installed at the rear of the apparatus.</p> <p>The hitch shall be constructed of heavy steel tubing and reinforced to the truck framework, for the receiving portion. This shall be a Class III/IV trailer hitch. A class IV rating shall be obtained only when a weight distributing hitch is used.</p> <p>Slide-in portion shall be held in place by one (1) safety pin with clip.</p> <p>The trailer electrical connection shall be a seven (7)-way flat blade recreational vehicle connector for trailer wiring compatible with hydraulic surge brake systems, and a second connector with inverted ground meeting SAE J560 standards providing an auxiliary connection for warning devices.</p>		

Bidder Complies	
Yes	No

**COMPARTMENTATION**

The apparatus body shall be built of aluminum construction using a minimum of 0.125" thick, 5052-H32 aluminum.

The body panel assembly shall be constructed in a fixture and consist of formed sheet metal for the front and rear bulkheads, door frames, floors, ceilings, and back walls. These parts shall be welded together to ensure greatest longevity with no visible welds in compartment interior.

Welded construction shall consist of 1.00" x 0.38" engineered plug weld holes that control the size, location, and the amount of weld required. The bodies shall be assembled and welded from engineered prints that call out the size, location, and type of weld required.

In structural areas the sheet metal components shall have flanges for welding. No butt joints shall be allowed. Gussets and support posts shall be provided for additional strength where needed.

The fender panel shall be an integral part of the complete welded body assembly. All light and compartment holes are pre punched prior to construction to provide accuracy and rounded corners to prevent stress risers in the material.

Circular fender liners shall be provided. For prevention of paint chips and ease of suspension maintenance the fender liners shall be formed from brush finished 304L stainless steel, be unpainted, and removable for suspension maintenance (no exception).

Side compartment flooring shall be of the sweep out design with the floor minimum of 1.00" higher than the compartment door lip.

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

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

The aluminum treadplate covers shall not make up the ceiling of the compartment (no exception).

All screws and bolts, which are not Grade 8, shall be stainless steel and where they 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 body support system shall begin with the chassis frame rails which is the strongest component of the chassis and is designed for sustaining maximum loads. The support system shall include lateral frame rail extensions that are formed from 0.375" 80k high strength steel and bolted to the chassis frame rails with 0.625" diameter Grade 8 bolts.

	Bidder Complies	
	Yes	No
<p>The vertical and horizontal members of the frame rail extensions are to be reinforced with welded gussets and extend to the outside edge of the body. The lateral frame extensions shall be electro-coated for superior corrosion resistance.</p> <p>The floating substructure shall be separated from the lateral frame extensions with neoprene elastomer isolators. These isolators shall reduce the natural flex stress of the chassis from being transmitted to the body, and absorb road shock and vibration.</p> <p>The isolators shall have a broad load range, proven viability in vehicular applications, be of a fail safe design and allow for all necessary movement in three (3) transitional and rotational modes.</p> <p>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. Two (2) 3.50" diameter isolators are provided at the front of the body near the centerline of the vehicle above the chassis frame. A minimum of eight (8) - 2.55" diameter isolators shall be provided, two (2) under each front compartment and two (2) under each rear side compartment. A minimum of four (4) 3.50" diameter isolators shall be provided under the rear compartment.</p> <p>A design with body compartments simply hanging/sitting on the chassis in an unsupported (cantilever) fashion shall not be acceptable.</p> <p><b><u>AGGRESSIVE WALKING SURFACE</u></b></p> <p>All exterior surfaces designated as stepping, standing, and walking areas shall comply with the required average slip resistance of the current NFPA standards. Documentation of the material meeting the standard shall be provided at time of delivery.</p> <p><b><u>LOUVERS</u></b></p> <p>All body compartments shall have a minimum of one (1) set of automotive style, dust resistant louvers pressed into a wall. The louvers shall incorporate a one (1)-way rubber valve that provides airflow out of the compartment and prevents water and dirt from gaining access to the compartment. Compartments over the wheel shall not have louvers.</p> <p><b><u>TESTING OF BODY DESIGN</u></b></p> <p>Body structural analysis shall be fully tested. Proven engineering and test techniques such as finite element analysis and strain gauging have been performed with special attention given to fatigue life and structural integrity of the body and substructure.</p> <p>The body shall be tested while loaded to its greatest in-service weight.</p> <p>The criteria used during the testing procedure shall include:</p> <ul style="list-style-type: none"> <li>• Raising opposite corners of the vehicle tires 9.00" to simulate the twisting a truck may experience when driving over a curb.</li> <li>• Making a 90 degree turn, while driving at 20 mph to simulate aggressive driving conditions.</li> <li>• Driving the vehicle on at 35 mph on a washboard road.</li> </ul>		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <li>• Driving the vehicle at 55 mph on a smooth road.</li> <li>• Accelerating the vehicle fully, until reaching the approximate speed of 45 mph on rough pavement.</li> </ul> <p>Evidence of the actual testing techniques shall be made available upon request.</p> <p>FEA shall have been performed on all substructure components.</p> <p><b><u>LEFT SIDE COMPARTMENTATION</u></b></p> <p>The left side compartmentation shall consist of three rollup door compartments.</p> <p>A full height, rollup door compartment ahead of the rear wheels shall be provided. The pump operator's panel shall be located in this compartment. The interior dimensions of the remaining space in this compartment shall be 13.25" wide x 53.63" high x 26.00" deep. The clear door opening shall be a minimum of 47.25" wide x 53.63" high.</p> <p>A rollup door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 60.00" wide x 22.88" high x 26.00" deep. The clear door opening shall be a minimum of 57.25" wide x 22.88" high.</p> <p>A full height, rollup door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 51.75" wide x 54.63" high x 26.00" deep. The clear door opening shall be a minimum of 49.25" wide x 54.63" high.</p> <p>The roll up door spool shall be installed in a recess above the compartment ceiling. All compartments shall include a drip pan below the roll of the door. The drip pan shall be installed level with the compartment ceiling. The interior height of the compartments shall be measured from the compartment floor to the ceiling. The depth of the compartments shall be measured from the back wall to the inside of the door frame.</p> <p>Closing of the doors shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p><b><u>RIGHT SIDE COMPARTMENTATION</u></b></p> <p>The right side compartmentation shall consist of three rollup door compartments.</p> <p>A full height, rollup door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 49.75" wide x 54.63" high x 26.00" deep. The clear door opening shall be a minimum of 47.25" wide x 54.63" high.</p> <p>A rollup door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 60.00" wide x 22.88" high x 26.00" deep. The clear door opening shall be a minimum of 57.25" wide x 22.88" high.</p> <p>A full height, rollup door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 51.75" wide x 54.63" high x 26.00" deep. The clear door opening shall be a minimum of 49.25" wide x 54.63" high.</p>		

	Bidder Complies	
	Yes	No
<p>The roll up door spool shall be installed in a recess above the compartment ceiling. All compartments shall include a drip pan below the roll of the door. The drip pan shall be installed level with the compartment ceiling. The interior height of the compartments shall be measured from the compartment floor to the ceiling. The depth of the compartments shall be measured from the back wall to the inside of the door frame.</p> <p>Closing of the doors shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p><b><u>SIDE COMPARTMENT ROLLUP DOOR(S)</u></b></p> <p>There shall be six (6) compartment doors installed on the side compartments, double faced, aluminum construction, painted one (1) color to match the lower portion of the body and manufactured by AMDOR™ brand rollup doors.</p> <p>Door(s) shall be constructed using 1.00" extruded double wall aluminum slats which will feature a flat smooth interior surface to provide maximum protection against equipment hang-up. The slats shall be connected with a structural driven ball and socket hinge designed to provide maximum curtain diaphragm strength. Mounting and adjusting the curtain shall be done with a clip system that connects the curtain to the balancer drum allowing for easy tension adjustment without tools. The slats shall be mounted in reusable slat shoes with positive snap-lock securement.</p> <p>Each slat will incorporate weather tight recessed dual durometer seals. One (1) fin will be designed to locate the seal within the extrusion. The second will serve as a wiping seal which will also allow for compression to prevent water ingress.</p> <p>The doors shall be mounted in a one (1)-piece aluminum side frame with recessed side seals to minimize seal damage during equipment deployment. All seals including side frames, top gutters and bottom panel are to be manufactured utilizing non-marring materials.</p> <p>Bottom panel flange of rollup door will be equipped with two (2) cut-outs to allow for easier access with gloved hands.</p> <p>A polished stainless steel lift bar to be provided for each roll-up door. The lift bar shall be located at the bottom of door with striker latches installed at the base of the side frames. Side frame mounted door strikers will include support beneath the stainless steel lift bar to prevent door curtain bounce, improve bottom seal life expectancy and to avoid false door ajar signals.</p> <p>All injection molded rollup door wear components will be constructed of Type 6 nylon.</p> <p>Each rollup door shall have a 3.00 inch diameter balancer/tensioner drum to assist in lifting the door. A garage door style shall not acceptable.</p> <p>The header for the rollup door assembly shall not exceed 4.00".</p> <p>A heavy-duty magnetic switch shall be used for control of open compartment door warning lights.</p>		

Bidder Complies	
Yes	No

**REAR COMPARTMENTATION**

A roll-up door compartment above the rear tailboard shall be provided.

the interior dimensions of this compartment shall be 37.00" wide x 43.50" high x 25.88" deep in the lower 34.00" of the compartment and 15.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 33.88" wide x 33.63" high.

A removable access panel shall be furnished on the back wall of the compartment.

The rear compartment shall be open into the rear side compartments. The transverse opening shall be a minimum of 22.00" wide x 29.00" high.

A drip pan shall be installed below the roll of the door. A guard shall be installed behind the roll of the door. The interior height of the compartment shall be measured from the floor to the ceiling. The depth of the compartment shall be measured from the back wall to the inside of the door frame.

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

**ROLL-UP REAR COMPARTMENT DOOR**

The rear compartment shall have a roll-up door.

The door shall be double faced, aluminum construction, satin aluminum and manufactured by AMDOR™ brand roll-up doors.

The door shall be constructed using 1.00" extruded double wall aluminum slats which shall feature a flat smooth interior surface to provide maximum protection against equipment hang-up. The slats shall be connected with a structural driven ball and socket hinge designed to provide maximum curtain diaphragm strength. Mounting and adjusting the curtain shall be done with a clip system that connects the curtain to the balancer drum allowing for easy tension adjustment without tools. The slats shall be mounted in reusable slat shoes with positive snap-lock securement.

Each slat shall incorporate weather tight recessed dual durometer seals. One (1) fin shall be designed to locate the seal within the extrusion. The second shall serve as a wiping seal which shall also allow for compression to prevent water ingress.

The door shall be mounted in a one (1)-piece aluminum side frame with recessed side seals to minimize seal damage during equipment deployment. All seals including side frames, top gutters and bottom panel are to be manufactured utilizing non-marring materials.

Bottom panel flange of roll-up door shall be equipped with two (2) cut-outs to allow for easier access with gloved hands.

A stainless steel lift bar to be provided for opening the door and located at the bottom of each door with latches on the outer extrusion of the door frame. A ledge to be supplied over lift bar

	Bidder Complies	
	Yes	No
<p>for additional area to aid in closing the door. The lift bar shall be located at the bottom of door with striker latches installed at the base of the side frames. Side frame mounted door strikers shall include support beneath the stainless steel lift bar to prevent door curtain bounce, improve bottom seal life expectancy and to avoid false door ajar signals.</p> <p>All injection molded roll-up door wear components shall be constructed of Type 6 nylon.</p> <p>The door shall have a 3.00 inch diameter balancer/tensioner drum to assist in lifting the door (garage door style) shall not acceptable.</p> <p>The header for the roll-up door assembly shall not exceed 4.00".</p> <p>A heavy-duty magnetic switch shall be used for control of open compartment door warning lights.</p> <p><b><u>COMPARTMENT LIGHTING</u></b></p> <p>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).</p> <p>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 bulb.</p> <p>Opening the compartment door shall automatically turn the compartment lighting on.</p> <p><b><u>HATCH COMPARTMENT</u></b></p> <p>A hatch compartment with two (2) lift-up, top opening hatch doors shall be provided above the right side body compartments. The hatch compartment shall extend the full length of the side body compartmentation x 21.00" wide x 19.00" maximum depth. The compartments shall extend the full length of the side body compartmentation except for a 20.00" recessed step area at the rear of the compartment if the access ladder is on that side.</p> <p>Sides of the hatch compartment shall be constructed of the same material as the body and painted job color on the outside panels. A chrome and black vinyl molding shall be provided to cover the seam between the top of the body panel and the bottom of the hatch compartment. The vertical outboard seam at the center of the compartment shall have a 1.00" wide painted aluminum extrusion.</p> <p>The top of the compartment shall be constructed of bright aluminum treadplate.</p> <p>Two (2) lift-up, bright aluminum treadplate doors shall be provided on the hatch compartment. Each door shall have a lever handle with a slam style latch to hold the doors in the closed position.</p> <p>These double pan doors shall have lipped edges with a rubber seal for weather resistance.</p>		

	Bidder Complies	
	Yes	No
<p>The doors shall be hinged on the outboard side and shall be held open with pneumatic stay arms.</p> <p>The compartment shall have a 3/4" drain that extends to below the body.</p> <p>Ribbed rubber matting shall be provided on the compartment floor to stop wet equipment from sitting in water pools.</p> <p><b><u>MOUNTING TRACKS</u></b></p> <p>There shall be recessed tracks installed vertically to support the adjustable shelf(s).</p> <p>Tracks shall not protrude into any compartment in order to provide the greatest compartment space and widest shelves possible.</p> <p>The tracks shall be provided in each compartment except for the one that contains the pump operator's panel.</p> <p><b><u>ADJUSTABLE SHELVES</u></b></p> <p>There shall be six (6) shelves with a capacity of 500 lb provided.</p> <p>The shelf construction shall consist of .188" aluminum painted spatter gray with 2.00" sides.</p> <p>Each shelf shall be infinitely adjustable by means of a threaded fastener, which slides in a track.</p> <p>The shelves shall be held in place by .12" thick stamped plated brackets and bolts.</p> <p>The location(s) shall be determined at a later date.</p> <p><b><u>SLIDE-OUT ADJUSTABLE HEIGHT TRAY</u></b></p> <p>There shall be three (3) slide-out trays provided.</p> <p>Each tray shall have 2.00" high sides and a minimum capacity rating of 250 lb in the extended position.</p> <p>Each tray shall be constructed of aluminum painted spatter gray.</p> <p>Each tray shall be mounted on a pair of side mounted slides. The slide mechanisms shall have ball bearings for ease of operation and years of dependable service. The slides shall be mounted to shelf tracks to allow the tray to be adjustable up and down within the designated mounting location.</p> <p>An automatic lock shall be provided for both the in and out tray positions. The lock trip mechanism shall be located at the front of the tray and shall be easily operated with a gloved hand.</p> <p>The location(s) shall be in RS3 centered between the floor and the ceiling, in LS1 centered between the floor and ceiling and in LS1 in the lower third</p>		

	Bidder Complies	
	Yes	No
<p><b><u>SLIDE-OUT/TILT-DOWN TRAY</u></b></p> <p>There shall be two (2) slide-out trays provided.</p> <p>The bottom of each tray shall be constructed of 0.188" thick aluminum painted spatter gray while special aluminum extrusions shall be utilized for the tray sides, ends, and tracks. The corners shall be welded to form a rigid unit.</p> <p>A spring loaded lock shall be provided on each side at the front of the tray. Releasing the locks shall allow the tray to slide out approximately two-thirds (2/3) of its length from the stowed position and tip 30 degrees down from horizontal. The tray shall be equipped with ball bearing rollers for smooth operation.</p> <p>Rubber padded stops shall be provided for the tray in the extended position.</p> <p>The capacity rating of the tray shall be a minimum of 215 lb in the extended position.</p> <p>The vertical position of the tray within the compartment shall be adjustable.</p> <p>The location(s) shall be determined at a later date.</p> <p><b><u>SLIDE-OUT FLOOR MOUNTED TRAY</u></b></p> <p>There shall be five (5) floor mounted slide-out tray(s) provided.</p> <p>Each tray shall have 2.00" high sides and a minimum capacity rating of 500 lb in the extended position.</p> <p>Each tray shall be constructed of aluminum painted spatter gray</p> <p>There shall be two undermount-roller bearing type slides rated at 250lb each provided. The pair of slides shall have a safety factor rating of 2.</p> <p>To ensure years of dependable service, the slides shall be coated with a finish that is tested to withstand a minimum of 1,000 hours of salt spray per ASTM B117.</p> <p>To ensure years of easy operation, the slides shall require no more than a 50lb force for push-in or pull-out movement when fully loaded after having been subjected to a 40 hour vibration (shaker) test under full load. The vibration drive file shall have been generated from accelerometer data collected from a heavy truck chassis driven over rough gravel roads in an unloaded condition. Proof of compliance shall be provided upon request.</p> <p>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.</p> <p>The location(s) shall be RS1, RS3, LS1, B1 and LS3.</p> <p><b><u>SWING OUT TOOLBOARD</u></b></p> <p>A swing out aluminum toolboard shall be provided.</p>		

	Bidder Complies	
	Yes	No
<p>It shall be a minimum of .188" thick with .203" diameter holes in a pegboard pattern with 1.00" centers between holes.</p> <p>A 1.00" x 1.00" aluminum tube frame shall be welded to the edge of the pegboard.</p> <p>The board shall be mounted on a pivoting device at the front of the compartment on the top and bottom to allow easy movement in and out of the compartment. The maximum tool load shall be 400 lb.</p> <p>The board shall have positive lock in the stowed and extended position.</p> <p>The board shall be mounted on adjustable tracks from front to back within the compartment.</p> <p>There shall be Two (2) toolboard(s) provided. The toolboard(s) shall be spatter gray painted and installed in LS2 ahead of vertical partition.</p> <p><b><u>REAR HATCH COMPARTMENT ACCESS DOOR</u></b></p> <p>A drop down door with rubber bumpers constructed of painted aluminum with a D-handle slam latch shall be provided at the rear of the LS hatch compartment hatch compartment(s) for a total of one (1) door(s).</p> <p><b><u>PARTITION, TRANSVERSE REAR COMPARTMENT</u></b></p> <p>Two (2) partitions shall be bolted in place to separate driver and passenger side rear compartments from the rear tailboard compartment. The partition shall be body material painted spatter gray.</p> <p><b><u>ALUMINUM PEGBOARD</u></b></p> <p>Two (2) horizontally installed tracks, with 0.19" aluminum pegboard shall be installed on the back wall of one (1) compartments. The holes shall be .203" diameter , punched 1.00" on center. The pegboard shall be spatter gray painted. The pegboard(s) shall be located in LS2.</p> <p>Retainers shall be used to mount the pegboard to the tracks.</p> <p><b><u>RUB RAIL</u></b></p> <p>Bottom edge of the side compartments shall be trimmed with a bright aluminum extruded rub rail.</p> <p>Trim shall be 3.12" high with 1.50" flanges turned outward for rigidity.</p> <p>The rub rails shall not be an integral part of the body construction, which allows replacement in the event of damage.</p> <p>Rub rails shall be attached with bolts and spaced from the body with isolators that shall help to absorb any moderate impact without damaging the body.</p> <p><b><u>BODY FENDER CROWNS</u></b></p> <p>Polished stainless steel fender crowns shall be provided around the rear wheel openings.</p>		

	Bidder Complies	
	Yes	No
<p>A fender liner constructed of unpainted brushed stainless shall be provided to avoid paint chipping. The liners shall be removable to aid in the maintenance of rear suspension components.</p> <p>A dielectric barrier shall be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.</p> <p>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.</p> <p><b><u>HARD SUCTION HOSE</u></b> Hard suction hose shall not be required.</p> <p><b><u>HANDRAILS</u></b> The handrails shall be 1.25" diameter anodized aluminum extrusion, with a ribbed design, to provide a positive gripping surface.</p> <p>Chrome plated end stanchions shall support the handrail. Plastic gaskets shall be used between end stanchions and any painted surfaces.</p> <p>Drain holes shall be provided in the bottom of all vertically mounted handrails..</p> <p>Handrails shall be located on the front of the body in positions needed to meet NFPA requirements.</p> <ul style="list-style-type: none"> <li>• Two (2) vertical handrails shall be located at the rear, one on each side of the rear compartment .</li> </ul> <p><b><u>AIR BOTTLE STORAGE (TRIPLE)</u></b> A quantity of three (3) air bottle compartments designed to hold (3) air bottles up to 7.25" in diameter x 26.00" deep shall be provided on the left side forward of the rear wheels, on the right side forward of the rear wheels and on the right side rearward of the rear wheels. A polished stainless steel door with a Southco raised trigger C2 chrome lever 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.</p> <p>Inside the compartment, black rubber matting shall be provided.</p> <p><b><u>AIR BOTTLE COMPARTMENT STRAP</u></b> 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.</p>		

	Bidder Complies	
	Yes	No
<p><b><u>EXTENSION LADDER</u></b> There shall be a 24' two-section aluminum Duo-Safety Series 900-A extension ladder provided.</p> <p><b><u>ROOF LADDER</u></b> There shall be one (1) 14' aluminum, Duo-Safety, Series 775-DR roof ladder(s) provided. The ladder(s) shall have roof hooks on both ends.</p> <p><b><u>LADDER STORAGE</u></b> The ladders shall be stored inside the upper section of the right side compartments. This ladder rack shall reduce the depth of the upper section in the side compartments.</p> <p>A partition shall be installed inside the compartment on the side of the rack to allow for equipment storage and to conceal the ladders.</p> <p>The ladders shall be banked in separate storage troughs.</p> <p>The ladder storage assembly shall be fabricated of stainless steel track channels to aid in loading and removal of ladders.</p> <p>Rear of the ladder storage area shall have a vertically hinged smooth aluminum door with a D-handle latch to contain the ladders.</p> <p><b><u>FOLDING LADDER</u></b> One (1) 10.00' aluminum, Series 585-A, Duo-Safety folding ladder shall be installed in a U-shaped trough inside the ladder storage compartment.</p> <p><b><u>PIKE POLE PROVIDED BY DEALER</u></b> NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) 8' or longer pike pole mounted in a bracket fastened to the apparatus.</p> <p>The pike pole is not on the apparatus as manufactured. The dealer shall provide and mount the pike pole.</p> <p>The pike pole(s) shall be a Akron 8' pike pole.</p> <p><b><u>6' PIKE POLE PROVIDED BY DEALER</u></b> 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.</p> <p>The pike pole is not on the apparatus as manufactured. The dealer shall provide and mount the pike pole.</p> <p>The pike pole(s) shall be a Akron 6' pike pole.</p> <p><b><u>PIKE POLE/FOLDING LADDER COMPARTMENT</u></b> One (1) pike pole compartment shall be provided, recessed in the upper, inside part of body compartment on the left side. The compartment shall be equipped with two (2) aluminum tubes</p>		

	Bidder Complies	
	Yes	No
<p>to hold two (2) pike poles and a stainless steel trough for the folding ladder. The door shall be made of smooth aluminum and have a lift and turn latch.</p> <p>One (1) compartment shall be provided, recessed in the upper, inside part of body compartment on the right side for storage of long handle tools. The door shall be made of smooth aluminum and have a lift and turn latch.</p> <p><b><u>LADDER, TOP ACCESS</u></b></p> <p>A wide easy climbing access ladder, constructed of aluminum rungs and extruded aluminum rails, shall be provided on the opposite side of the ladder storage at the rear of the apparatus. The inside climbing area of the ladder shall be 13.75" wide.</p> <p>The lower section of the ladder shall be retractable into the upper section to eliminate interference with the rear FMVSS lights. When lowered the bottom rung shall be lower than the body, approximately 16.00" to 20.00" from the ground to allow a lower first step height.</p> <p>The ladder shall be slanted when in use for easy access, and fold against the body for storage to reduce the overall length. Corrosion resistant, stainless steel spring-loaded locks shall hold the ladder in place.</p> <p>This ladder shall activate the Do Not Move Truck indicator, in the cab, if not in the stowed position when the parking brake is disengaged.</p> <p><b><u>PUMP</u></b></p> <p>Pump shall be a low profile, 1500 gpm single stage midship mounted centrifugal type, mounted below the cab. The pump shall have a 15 percent reserve capacity to allow for extended time between pump rebuild. To ensure efficient pump/vehicle design the capacity to weight ratio shall not be less than 1.5:1.</p> <p>The pump casing shall consist of three (3) discharge outlets, one (1) to each side in line with the impeller and one (1) to the rear. The pump casing shall incorporate two (2) water strippers to maintain radial balance.</p> <p>Pump shall be the Class A type.</p> <p>Pump shall be certified to deliver the percentage of rated discharge from draft at pressure indicated below:</p> <ul style="list-style-type: none"> <li>• 100 percent of rated capacity at 150 psi net pump pressure</li> <li>• 70 percent of rated capacity at 200 psi net pump pressure</li> <li>• 50 percent of rated capacity at 250 psi net pump pressure</li> </ul> <p>The pump shall have the capacity to deliver the percentage of rated discharge from a pressurized source as indicated below:</p> <ul style="list-style-type: none"> <li>• 135 percent of rated capacity at 100 psi net pump pressure from a 5 psi source</li> </ul>		

	Bidder Complies	
	Yes	No
<p>Pump body shall be fine-grained gray iron. Pump shall incorporate a heater/cooling jacket integral to the pump housing.</p> <p>The impeller shall be high strength vacuum cast bronze alloy accurately machine balanced and splined to a ten (10) spline stainless steel pump shaft for precision fit, exceptional durability, and efficiency. Double replaceable reverse flow labyrinth type bronze wear ring design shall help to minimize end thrust. The impeller shall be a twisted vane design to create higher lift. No keyed shafts shall be acceptable.</p> <p>The pump shall include o-ring gaskets throughout the pump.</p> <p>Deep groove radial type oversize ball bearings shall be provided. The bearings shall be protected at the openings from road dirt and water with an oil seal and water slinger.</p> <p>The pump shall have a flat, patterned area on the top of the pump intake wye to allow standing for plumbing maintenance. The main inlet manifold shall be 6.00" in diameter and shall have a low profile design to facilitate low crosslays and high flows.</p> <p>For ease of service, the pump housing, intake wye, impeller, mechanical seal, and gear case shall be accessible from above the chassis frame by tilting the cab. The intake wyes shall be removable without having to remove the main intake casting. Removal of the main inlet wyes shall provide access to the impeller, mechanical seal, and wear ring (no exception).</p> <p>The tank to pump line and the primary discharge line shall be the only piping required to be removed for overhaul.</p> <p>For ease of service and overhaul there shall be no piping or manifolding located directly over the pump (no exception).</p> <p><b><u>PUMP MOUNTING</u></b></p> <p>Pump shall be mounted to the chassis frame rails directly below the crew cab, to minimize wheelbase and facilitate service, using rubber isolators in a modified V pattern that include two (2) central mounted isolators located between the frame rails and one (1) on each side outside the frame rails. The mounting shall allow chassis frame rails to flex independently without damage to the fire pump. Each isolator shall be 2.55" in total outside diameter and shall be rated at 490 lb. The pump shall be completely accessible by tilting the cab with no piping located directly above the pump.</p> <p><b><u>MECHANICAL SEALS</u></b></p> <p>Silicon carbide mechanical seals shall be provided. The seals shall be spring loaded and self-adjusting. The seals shall have a minimum thermal conductivity of 126 W/m*K to run cooler. Seals shall have a minimum hardness of 2800 kg/mm<sup>2</sup> to be more resistant to wear, and have thermal expansion characteristics of no more than 4.0 X10<sup>-6</sup>mm/mm*K to be more resistant to thermal shock.</p>		

Bidder Complies	
Yes	No

**PUMP GEAR CASE**

The pump gear case shall be a pressure-lubricated to cool, lubricate, and filter the oil. The gear case shall include an auxiliary PTO opening. The gear case shall be constructed of lightweight aluminum, and impregnated with resin in accordance to MIL Spec MIL-I-17563. A dipstick, accessible by tilting the cab, shall be provided for easy fluid level checks. A filter screen shall be provided for long life.

The gear case shall consist of two (2) gears to drive the pump impeller and one (1) for the auxiliary PTO.

The auxiliary PTO opening shall provide for the addition of PTO driven accessories.

The pump shall be driven through the rear engine power take-off and clutch. The rear engine power take-off drive shall be live at all times to allow for pump and roll applications. Rear engine power take-off's allow for high horsepower and torque ratings needed for large pump applications, and is a proven drive system throughout the rugged construction industry (no exception).

**CLUTCH**

There shall be a heavy-duty electric clutch mounted directly to the front of the pump to engage and disengage the pump without gear clash. The clutch shall be a multiple disc design for maximum torque. The clutch shall be fully self-adjusting to provide automatic wear compensation, and consistent torque throughout the life of the clutch. Positive engagement and disengagement shall be provided through a high efficient and dependable magnetic system to assure superior performance. The clutch shall have a 500 lb-ft rating. Clutch shall be of a time-tested design used in critical military applications (no exception).

**PUMPING MODE**

Pump shall provide for both pump and roll mode and stationary pumping mode.

Stationary pumping mode shall be accomplished by stopping the vehicle, setting the parking brake and engaging the water pump switch on the cab switch panel. The transmission shall shift to "Neutral" range automatically when the parking brake is set. The "OK to Stationary Pump" indicator shall also illuminate when the parking brake is set. If the vehicle is equipped with a foam system or CAFS system, these systems shall be engaged from the cab switch panel as well.

Pump and roll mode shall be accomplished by the use of the main pump and shall not require the use of a secondary pump. Pump and roll mode shall use the same operation sequence as stationary pumping mode with a few additional steps. After the vehicle is setup for stationary pumping, the operator shall leave the cab and setup the pump panel to discharge at the desired outlet(s). Upon returning to the cab, the operator shall disengage the parking brake. An "OK to Pump & Roll" indicator shall illuminate on the cab switch panel. First gear on the transmission gear selector shall be selected by the operator for pump and roll operations. The operator as

	Bidder Complies	
	Yes	No
<p>needed shall apply the foot throttle. Pump and roll mode shall be maintained unless the transmission shifts out of first gear.</p> <p>Stopping either stationary pumping mode or pump and roll mode shall be accomplished by pressing the "Water Pump" switch down to disengage the pump.</p> <p><b><u>PUMP SHIFT</u></b></p> <p>Pump shall be engaged in not more than two steps, by simply setting the parking brake, which shall automatically put the transmission into neutral, and activating a rocker switch in the cab. Switches in the cab shall also allow for water, foam, or CAFS if equipped, and activate the appropriate system to preset parameters. The engagement shall provide simple two-step operation, enhance reliability, and completely eliminate gear clash. The shift shall include the indicator lights as mandated by NFPA. A direct override switch shall be located behind a door in the lower pump operator's panel. The switch shall automatically disengage when the door is closed.</p> <p>As the parking brake is applied, the pump panel throttle shall be activated and deactivate the chassis foot throttle for stationary operation.</p> <p>Pump and roll operation shall be available by releasing the parking brake with the pump in the pumping mode. Releasing the parking brake shall activate the chassis foot throttle, and deactivate the pump panel throttle. To protect from accidental pump overheating, the pump shall automatically disengage when the truck transmission shifts into second gear.</p> <p><b><u>TRANSMISSION LOCK UP</u></b></p> <p>Transmission lock up is not required as transmission shall automatically shift to neutral as soon as the parking brake is set.</p> <p><b><u>AUXILIARY COOLING SYSTEM</u></b></p> <p>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. A water-to-coolant heat exchanger shall be used.</p> <p><b><u>INTAKE RELIEF VALVE - PUMP</u></b></p> <p>An Akron Style 53 relief valve shall be installed on the suction side of the pump preset at 125 psig.</p> <p>The relief valve shall have a working range of 50 psi to 250 psi.</p> <p>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.</p> <p>The relief valve pressure control shall be located behind behind the right side pump panel with a stainless steel access door .</p>		

	Bidder Complies	
	Yes	No
<p><b><u>PRESSURE CONTROLLER</u></b></p> <p>A Pressure Governor shall be provided. An electric pressure governor shall be provided which is capable of automatically maintaining a desired preset discharge pressure in the water pump. When operating in the pressure control mode, the system shall automatically maintain the discharge pressure set by the operator (within the discharge capabilities of the pump and water supply) regardless of flow, within the discharge capacities of the water pump and water supply.</p> <p>A pressure transducer shall be installed in the water discharge of the pump. The transducer continuously monitors pump pressure sending a signal to the Electronic Control Module (ECM).</p> <p>The governor can be used in two (2) modes of operation, RPM mode and pressure modes.</p> <p>In the RPM mode, the governor can be activated after vehicle parking brake has been set. When in this mode, the governor shall maintain the set engine speed, regardless of engine load (within engine operation capabilities).</p> <p>In the pressure mode, the governor system can only operate after the fire pump has been engaged and the vehicle parking brake has been set. When in the pressure mode, the pressure controller monitors the pump pressure and varies engine speed to maintain a precise pump pressure. The pressure controller shall use a quicker reacting J1939 database for engine control.</p> <p>A preset feature allows a predetermined pressure or rpm to be set.</p> <p>A pump cavitation protection feature is also provided which shall return the engine to idle should the pump cavitate. Cavitation is sensed by the combination of pump pressure below 30 psi and engine speed above 2000 rpm for more than five (5) seconds.</p> <p>The throttle shall be a vernier style control, with a large control knob for use with a gloved hand. A throttle ready light shall be provided adjacent to the throttle control. A large 0.75" RPM display shall be provided to be visible at a glance.</p> <p>Check engine, and stop engine indicator lights shall be provided for easy viewing.</p> <p>Large 0.75" push buttons shall be provided for menu, mode, preset, and silence selections.</p> <p>The water tank level indicator shall be incorporated in the pressure governor.</p> <p>A fuel level indicator shall be incorporated in the pressure controller.</p> <p>A pump hour meter shall be incorporated in the pressure controller.</p> <p>The pressure controller shall incorporate monitoring for engine temperature, oil pressure, fuel level alarm, and voltage. Pump monitoring shall include, pump gearcase temperature, error codes, diagnostic data, pump service reminders, and time stamped data logging, to allow for fast accurate trouble shooting. It shall also notify the driver/engineer of any problems with the engine and the apparatus. Complete understandable messages shall be provided in a 20-</p>		

	Bidder Complies	
	Yes	No
<p>character display, providing for fewer abbreviations in the messages. An automatic dim feature shall be included for night operations.</p> <p>The pressure controller shall include a USB port for easy software upgrades, which can be downloaded through a USB memory stick, eliminating the need for a laptop for software installations.</p> <p>A complete interactive manual shall be provided with the pressure controller.</p> <p><b><u>PRIMING PUMP</u></b></p> <p>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.</p> <p>All wetted metallic parts of the priming system are to be of brass and stainless steel construction.</p> <p>One (1) priming control shall open the priming valve and start the pump primer. The control shall have a three position switch for automatic, off or test. In the sentry mode (automatic) the primer shall sense when the pump losses discharge pressure and start the pump primer. The primer shall automatically stop once the pump has pressure.</p> <p>A vacuum gauge shall indicate the vertical elevation of water in feet during priming operation.</p> <p><b><u>PUMP MANUALS</u></b></p> <p>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.</p> <p><b><u>PLUMBING, STAINLESS STEEL AND HOSE</u></b></p> <p>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 equipped with brass or stainless steel couplings. All stainless steel hard plumbing shall be a minimum of a schedule 10 wall thickness.</p> <p>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.</p> <p>Plumbing manifold bodies shall be ductile cast iron or stainless steel.</p> <p>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.</p> <p>All water carrying gauge lines shall be of flexible polypropylene tubing.</p>		

	Bidder Complies	
	Yes	No
All piping, hose and fittings shall have a minimum of a 500 PSI hydrodynamic pressure rating.		
<b><u>FOAM SYSTEM PLUMBING</u></b>		
All piping that is in contact with the foam concentrate or foam/water solution shall be stainless steel. The fittings shall be stainless steel or brass. Cast iron pump manifolds will be allowed.		
<b><u>MAIN PUMP INLETS</u></b>		
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 inlets shall not be located on the main operator's panel and shall maintain a low connection height by terminating below the top of the chassis frame rail.		
<b><u>MAIN PUMP INLET CAP</u></b>		
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).		
<b><u>VALVES</u></b>		
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 <b>ten (10) year</b> warranty.		
<b><u>LEFT SIDE INLET</u></b>		
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.		
<b><u>ANODE, INLET</u></b>		
A pair of sacrificial zinc anodes shall be provided in the water pump inlets to protect the pump from corrosion.		
<b><u>INLET CONTROL</u></b>		
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.		
<b><u>INLET BLEEDER VALVE</u></b>		
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		

	Bidder Complies	
	Yes	No
<p>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.</p> <p><b><u>TANK TO PUMP</u></b></p> <p>The booster tank shall be connected to the intake side of the pump with heavy duty 4.00" piping and a quarter turn 3.00" full flow line valve with the control located at the operator's panel. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing.</p> <p>A check valve shall be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank.</p> <p><b><u>TANK REFILL</u></b></p> <p>A 1.50" 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.</p> <p><b><u>LEFT SIDE DISCHARGE OUTLETS</u></b></p> <p>There shall be two (2) discharges with a 2.50" valves on the left side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter. Discharges shall be located below the cab, and shall be no higher than the top of the chassis frame rail. Discharges shall not be located on the pump operator's panel. Lever controls shall be provided at the valve.</p> <p><b><u>RIGHT SIDE DISCHARGE OUTLETS</u></b></p> <p>There shall be One (1) discharge outlet with a 2.50" valve on the right side of the apparatus, terminating with a 2.50" MNST adapter. The discharge(s) shall be located below the crew cab and shall be no higher than the top of the chassis frame rail.</p> <p>There shall be Akron 9335 electric valve controller(s) provided on the pump operators panel. The electric control(s) must be of a true position feedback design, requiring no clutches in the motor or current limiting. The unit(s) must be completely sealed with momentary open, close as well and an optional one touch full open feature to operate the valve actuator. The controller(s) shall provide position indication on a full color, backlit LCD display. They shall have manual adjustment of the brightness as well as an auto dimming option.</p> <p>In addition to valve position, each controller shall include a pressure display.</p> <p><b><u>LARGE DIAMETER DISCHARGE OUTLET</u></b></p> <p>There shall be a 4.00" discharge outlet with a 4.00" valve installed on the right side of the apparatus, terminating with 4.00" MNST threads. The discharge shall be located below the crew cab and shall be no higher than the top of the chassis frame rail.</p> <p>There shall be an Akron 9335 electric valve controller provided on the pump operators panel. The electric control must be of a true position feedback design, requiring no clutches in the motor or current limiting. The unit must be completely sealed with momentary open, close as well and an optional one touch full open feature to operate the valve actuator. The controller</p>		

	Bidder Complies	
	Yes	No
<p>shall provide position indication on a full color, backlit LCD display. It shall have manual adjustment of the brightness as well as an auto dimming option.</p> <p>In addition to valve position, the controller shall include a pressure display.</p> <p><b><u>HOSE BED DISCHARGE OUTLET</u></b></p> <p>There shall be One (1) discharge outlet piped to the front of the hose bed, in the ds bed. Plumbing shall consist of 2.50" schedule 10 304L welded or formed stainless steel piping along with a 2.50" full flow ball valve with the control from the pump operator's panel. Discharge shall terminate with 2.50" NST thread.</p> <p><b><u>HOSE BED DISCHARGE OUTLET</u></b></p> <p>There shall be One (1) discharge outlet piped to the front of the hose bed, in the passenger side bed. Plumbing shall consist of 2.00" schedule 10 304L welded or formed stainless steel piping along with a 2.00" full flow ball valve with the control from the pump operator's panel. Discharge shall terminate with 1.50" NST thread.</p> <p><b><u>DISCHARGE CAPS/ INLET PLUGS</u></b></p> <p>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.</p> <p>Chrome plated, rocker lug, plugs with chain shall be furnished for all auxiliary inlets 1.00" thru 3.00" in size.</p> <p>The caps and plugs shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><b><u>OUTLET BLEEDER VALVE</u></b></p> <p>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.</p> <p>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.</p> <p><b><u>LARGE DIAMETER OUTLET CAP</u></b></p> <p>The large diameter outlet shall have a National Standard hose thread adapter with a 4.00" rocker lug chrome plated cap and chain.</p> <p>The cap shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected.</p>		

Bidder Complies	
Yes	No

**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 or an indicator shall be provided to show when the valve is closed.

The right side discharges shall be controlled by an electric valve controller with the manual override located on the right side pump panel. In addition to valve position, each Elkhart controller shall include a pressure display.

All other outlets shall have manual swing handles that operate in a vertical up and down motion. These handles shall be able to lock in place to prevent valve creep under pressure.

**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. 3.00" 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. A 2.50" valve shall be provided. The deluge riser shall allow flow for 1000 GPM.

**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 triangular bracing structure shall be installed to support the piping. Aluminum tread plate shall be placed on the forward side of the bracing structure.

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.

**MONITOR WITH NOZZLE**

A Task Force Tips Crossfire #XFT-NJ monitor shall be properly installed on the deluge riser. This monitor shall be painted as provided by monitor manufacturer .

A Task Force Tips Master Stream Series M-R1250S-NJ nozzle shall be provided.

**NOZZLE**

A Task Force Tips Master Stream 1250 M-R nozzle shall be provided.

The deluge riser Extend-a-Gun shall have provisions for direct mounting a Task Force Tips CrossFire monitor.

	Bidder Complies	
	Yes	No
<p><b><u>CROSSLAY MODULE</u></b></p> <p>The crosslay module shall be standard width.</p> <p>The crosslay module shall be offset and held flush with the left side of the rear body to accommodate a hydraulic ladder rack on the right side.</p> <p>The forward, upper corners of the module shall have a notch for a light head.</p> <p>The crosslay module shall be manufactured for installation of roll up doors on each side.</p> <p><b><u>ROLL-UP DOOR, CROSSLAY ENDS,</u></b></p> <p>All compartment doors shall be roll-up style double faced, aluminum construction, painted one (1) color to match the lower portion of the body and manufactured by AMDOR™. The crosslay enclosure shall be full width of the body.</p> <p>The track shall be the flanged track with the screws installed to the rear of the track guide.</p> <p>The slats shall be double wall box frame extrusion. The exterior surface shall be flat and the interior surface shall be concave to help loose equipment fall to the ground and prevent it from jamming the door.</p> <p>Between each slat shall be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments.</p> <p>Each door shall have a 4.00" counter balance to assist in lifting.</p> <p>A polished stainless steel lift bar to be provided for each roll-up door. The lift bar shall be located at the bottom of door with striker latches installed at the base of the side frames. Side frame mounted door strikers will include support beneath the stainless steel lift bar to prevent door curtain bounce, improve bottom seal life expectancy and to avoid false door ajar signals.</p> <p>The crosslays shall have a drip pan below the roll of the door.</p> <p><b><u>CROSSLAY COMPARTMENT LIGHTING</u></b></p> <p>There shall be two (2) 12 volt DC light strips with white LEDs and mechanical fasteners, provide behind the front door frame on the crosslay compartments per the following:</p> <ul style="list-style-type: none"> <li>• One (1) strip light for the left side crosslay compartment door</li> <li>• One (1) strip light for the right side crosslay compartment door</li> </ul> <p>The lights shall be activated when the battery switch is on and the respective door is opened.</p> <p><b><u>CROSSLAY(S), LOWER</u></b></p> <p>There shall be two (2) lower crosslays provided.</p> <p><b><u>1.50" Crosslays</u></b></p> <p>There shall be two (2) 1.50" crosslays plumbed with 2.00" welded or formed schedule 10 304L stainless steel pipe.</p>		

	Bidder Complies	
	Yes	No
<p>The crosslays shall be low mounted with the bottom of both crosslay trays no more than 11.00" above the frame rails for simple, safe reloading and deployment (no exception).</p> <p>There shall be a 1.50" National Standard hose thread 90-degree swivel provided in each hose bed, so that the hose may be removed from either side of apparatus. The swivel shall be as far outbound as possible for ease of changing hose.</p> <p>Each crosslay shall be gated with a 2.00" quarter turn ball valve with the controls located at the pump operator's panel.</p> <p>Each hose bed shall be capable of carrying 200' of 1.75" double jacket hose .</p> <p><b><u>Crosslay Hose Trays</u></b></p> <p>A removable tray shall be provided for each crosslay hose bed. The crosslay tray shall be constructed of black poly to provide a lightweight sturdy tray. Two (2) hand holes shall be in the floor and additional hand holes shall be provided in the sides for easy removal and installation from the compartment. The floor of the trays shall be perforated to allow for drainage and hose drying.</p> <p>Trays shall be held in place by a mechanical spring-loaded stainless-steel latch that automatically deploys upon loading the trays to hold the trays in place during transit.</p> <p><b><u>LONG TOOL ENCLOSURE</u></b></p> <p>An enclosure shall be provided for storage in the upper crosslay module. The enclosure shall be removable to allow access to the pump. The stored items shall removable from either side of the truck. The enclosure shall be [Size].</p> <p>A strap shall be provided on each end of the storage to retain the equipment.</p> <p><b><u>BOOSTER HOSE REELS</u></b></p> <p>Two (2) Hannay electric rewind booster hose reels shall be installed over the pump, one each side.</p> <p>The exterior finish of the reels shall be painted #269 gray from the reel manufacturer.</p> <p>A polished stainless steel roller and guide assembly shall be mounted on each side of the apparatus.</p> <p>Discharge controls shall be provided at the pump operator's panel. Plumbing to the reels shall consist of 1.0" Aeroquip hose and a 2.0" valves.</p> <p>Reel motors shall be protected from overload with a circuit breaker rated to match the motors.</p> <p>Electric rewind control shall be two (2) rubber covered buttons, one (1) mounted on each pump panel adjacent to the hose reel.</p>		

	Bidder Complies	
	Yes	No
<p>Booster hose, 1.00" diameter and 200 feet long, with chrome plated Barway, or equal couplings shall be provided on each reel.</p> <p>Working pressure of the booster hose shall be a minimum of 800 psi.</p> <p>Capacity of the hose reel shall be 200 feet of 1.00" booster hose.</p> <p><b><u>HOSEREEL ACCESS</u></b></p> <p>A quantity of two (2) cutout(s) shall be provided in the One each side for the hose reel(s). These cutout(s) shall allow access to the hose and provide a window to view the reel. Stainless steel rollers with nylon bushings shall be mounted horizontally and vertically around the cutout.</p> <p><b><u>FOAM PROPORTIONER</u></b></p> <p>A foam proportioning system shall be provided that is an on demand, automatic proportioning, single point, direct injection system suitable for all types of Class A and B foam concentrates, including the high viscosity (6000 cps), alcohol resistant Class B foams. Operation shall be based on direct measurement of water flow, and remain consistent within the specified flows and pressures. The system shall automatically proportion foam solution at rates from 0.1 percent to 3 percent regardless of variations in water pressure and flow, up to the maximum rated capacity of the foam concentrate pump.</p> <p>The design of the system shall allow operation from draft, hydrant, or relay operation.</p> <p><b><u>System Capacity</u></b></p> <p>The system shall have the ability to deliver the following minimum foam solution flow rates at accuracies that meet or exceed NFPA requirements at a pump rating of 150 psi.</p> <p>100 gpm @ 3 percent</p> <p>300 gpm @ 1 percent</p> <p>600 gpm @ 0.5 percent</p> <p>Class A foam setting in 0.1 percent increments from 0.1 percent to 1 percent. Typical settings of 1 percent, 0.5 percent and 0.3 percent (maximum capacity shall be limited to the plumbing and water pump capacity).</p> <p><b><u>Control System</u></b></p> <p>The system shall be equipped with a digital electronic control display located on the pump operators panel. Push button controls shall be integrated into the panel to turn the system on/off, control the foam percentage, and to set the operation modes.</p> <p>The percent of injection shall have a preset. This preset can be changed at the fire department as desired. The percent of injection shall be able to be easily changed at the scene to adjust to changing demands.</p>		

	Bidder Complies	
	Yes	No
<p>Three (3) 0.50" high LEDs shall display the foam percentage in numeric characters. Three (3) indicator LEDs shall also be included, one (1) green, one (1) red, and one (1) yellow. The LEDs shall indicate various system operation or error states.</p> <p>The indications shall be:</p> <ul style="list-style-type: none"> <li>• Solid Green - System On</li> <li>• Solid Red - Valve Position Error</li> <li>• Solid Yellow - Priming System</li> <li>• Flashing Green - Injecting Foam</li> <li>• Flashing Red - Low Tank Level</li> <li>• Flashing Yellow - Refilling Tank</li> </ul> <p>The control display shall house a microprocessor, which receives input from the systems water flow meter while also monitoring the position of the foam concentrate pump. The microprocessor shall compare the values of the water flow versus the position/rate of the foam pump, to ensure the proportion rate is accurate. One (1) check valve shall be installed in the plumbing to prevent foam from contaminating the water pump.</p> <p><b><u>Hydraulic Drive System</u></b></p> <p>The foam concentrate pump shall be powered by an electric over hydraulic drive system. The hydraulic system and motor shall be integrated into one unit.</p> <p><b><u>Foam Concentrate Pump</u></b></p> <p>The foam concentrate pump shall be of positive displacement, self-priming; linear actuated design, driven by the hydraulic system. The pump shall be constructed of brass body; chrome plated stainless steel shaft, with a stainless steel piston. In order to increase longevity of the pump, no aluminum shall be present in its construction.</p> <p>A relief system shall be provided which is designed to protect the drive system components and prevent over pressuring the foam concentrate pump.</p> <p>The foam concentrate pump shall have minimum capacity for 3 gpm with all types of foam concentrates with a viscosity at or below 6000 cps including protein, fluoroprotein, AFFF, FFFP, or AR-AFFF. The system shall deliver only the amount of foam concentrate flow required, without recirculating foam back to the storage tank. Recirculating foam concentrate back to the storage tank can cause agitation and premature foaming of the concentrate, which can result in system failure. The foam concentrate pump shall be self-priming and have the ability to draw foam concentrate from external supplies such as drums or pails.</p> <p><b><u>External Foam Concentrate Connection</u></b></p> <p>An external foam pick-up shall be provided to enable use of a foam agent that is not stored on the vehicle. The external foam pick-up shall be designed to allow continued operation after the on-board foam tank is empty, or the use of foam different than the foam in the foam tank.</p>		

	Bidder Complies	
	Yes	No
<p><b><u>Panel Mounted External Pick-Up Connection / Valve</u></b>  A bronze three (3)-way valve shall be provided. The unit shall be mounted to the pump panel. The valve unit shall function as the foam system tank to pump valve and external suction valve. The external foam pick-up shall be one (1) 0.75" male connection GHT (garden hose thread) with a cap.</p> <p><b><u>Pick-Up Hose</u></b>  A 0.75" flexible hose with an end for insertion into foam containers shall be provided. The hose shall be supplied with a 0.75" female swivel GHT (garden hose thread) swivel connector. The hose shall be shipped loose.</p> <p><b><u>Discharges</u></b>  The foam system shall be plumbed to the lower rear crosslay, lower front crosslay, front of hose bed right side, hose reel in left side of dunnage area and hose reel in right side of dunnage area.</p> <p><b><u>System Electrical Load</u></b>  The maximum current draw of the electric motor and system shall be no more than 55 amperes at 12 VDC.</p> <p><b><u>SINGLE FOAM TANK REFILL</u></b>  The foam system's proportioning pump shall be used to fill the foam tank. This shall allow use of the auxiliary foam pick-up to pump the foam from pails or a drum on the ground into the foam tank. A foam shut-off switch shall be installed in the fill dome of the tank to shut the system down when the tank is full. The fill operation shall be controlled by a mode in the foam system controller. While the proportioner pump is filling the tank, the controller shall display a flashing yellow LED to indicate that the tank is filling. When the tank is full, as determined by the float switch in the tank dome, the pump shall stop and the controller shall shut the yellow LED off. If it attempted to use tank fill and the refill valve and suction valve are in the wrong position(s), then a red LED shall illuminate to indicate the improper valve position(s). When the valves are positioned properly, then filling shall commence.</p> <p><b><u>FOAM TANK</u></b>  The foam tank shall be an integral portion of the polypropylene water tank. The cell shall have a capacity of 20 gallons of foam with the intended use of Class A foam. The foam cell shall not reduce the capacity of the water tank. The foam cell shall have a screen in the fill dome and a breather in the lid.</p> <p><b><u>FOAM TANK DRAIN</u></b>  The foam tank drain shall be a 1.00" quarter turn drain valve located inside the pump/plumbing compartment.</p> <p><b><u>PUMP CONTROL PANELS (LEFT SIDE CONTROL)</u></b>  Pump controls and gauges shall be located midship at the left side of the apparatus and properly identified.</p>		

	Bidder Complies	
	Yes	No
<p>The main pump operator's control panel shall be completely enclosed and located in the forward section of the body compartment, to protect against road debris and weather elements. The pump operator's panels shall be no more than 31.00" wide, and made in four (4) sections with the center section easily removable with simple hand tools. For the safety of the pump operator, there shall be no discharge outlets or pump inlets located on the main pump operators panel.</p> <p>Layout of the pump control panel shall be ergonomically efficient and systematically organized. The upper section shall contain the master gauges. This section shall be angled down for easy visibility. The center section shall contain the pump controls aligned in two horizontal rows. The pressure control device, engine monitoring gauges, electrical switches, and foam controls (if applicable) shall be located on or adjacent to the center panel, on the side walls for easy operation and visibility. The lower section shall contain the outlet drains.</p> <p>Manual controls shall be easy moving 8" long lever style controls that operate in a vertical, up and down swing motion. These handles shall have a 2.25" diameter knob and be able to lock in place to prevent valve creep under any pressure. Bright finish bezels shall encompass the opening, be securely mounted to the pump operator's panel, and shall incorporate the discharge gauge bezel. Bezels shall be bolted to the panel for easy removal and gauge service. The left side discharges shall be controlled directly at the valve. There shall be no push-pull style control handles. (no exception)</p> <p>Identification tags for the discharge controls shall be recessed within the same bezel. The discharge identification tags shall be color coded, with each discharge having its own unique color.</p> <p>All remaining identification tags shall be mounted on the pump panel in chrome-plated bezels.</p> <p>All discharge outlets shall be color coded and labeled to correspond with the discharge identification tag.</p> <p>The pump panels for the midship discharge and intake ports shall be located ahead of the body compartments with no side discharge or intake higher than the frame rail. The pump panels shall be easily removable with simple hand tools.</p> <p>A recessed cargo area shall be provided at the front of the body, ahead of the water tank above the plumbing.</p> <p><b><u>PUMP PANEL CONFIGURATION</u></b></p> <p>The pump panel configuration shall be arranged and installed in an organized manner that shall provide user-friendly operation.</p> <p><b><u>PUMP AND GAUGE PANEL</u></b></p> <p>The pump operator's panel and gauge panels shall be constructed of stainless steel with a brushed finish.</p>		

	Bidder Complies	
	Yes	No
<p>The side control panels shall be constructed of stainless steel with a brushed finish for durability and ease of maintenance.</p> <p><b><u>PUMP AND PLUMBING ACCESS</u></b></p> <p>Simple access to the plumbing shall be provided through the front of the body area by raising the cab for complete plumbing service and valve maintenance. Access to valves shall not require removal of operator panels or pump panels. Access for rebuilding of the pump shall not require removal of more than the tank to pump line and a single discharge line. This access shall allow for fast, easy valve or pump rebuilding, making for reduced out of service times. Steps shall be provided for access to the top of the pump.</p> <p>Access to the pump shall be provided by raising the cab. The pump shall be positioned such that all maintenance and overhaul work can be performed above the frame and under the tilted cab. The service and overhaul work on the pump shall not require the removal of operator panels or pump panels. Complete pump casing and gear case removal shall require no more than removal of the intake and discharge manifolds, driveline, coolers and a single discharge line. The pump case and gear case shall be able to be removed by lifting upward without interference from piping and be removable in less than 3 hours.</p> <p><b><u>PUMP COMPARTMENT LIGHT</u></b></p> <p>There shall be one (1) Whelen®, Model 3SC0CDCR, 3.00" white 12 volt DC LED light(s) with Whelen, Model 3FLANGEC, flange(s) installed in the plumbing area.</p> <p>The light(s) shall be activated by a toggle switch located in the pump compartment area.</p> <p>Engine monitoring graduated LED indicators shall be incorporated with the pressure controller.</p> <p><b><u>THROTTLE READY GREEN INDICATOR LIGHT</u></b></p> <p>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.</p> <p><b><u>AIR HORN SWITCH</u></b></p> <p>An air horn control switch shall be provided at the pump operator's control panel. This switch shall be red and properly labeled. The switch shall be located within easy reach of the operator in the electrical switch panel.</p> <p><b><u>VACUUM AND PRESSURE GAUGES</u></b></p> <p>The pump vacuum and pressure gauges shall be liquid filled and manufactured by Class 1 Incorporated ©.</p> <p>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#.</p> <p>Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.</p>		

	Bidder Complies	
	Yes	No
<p>The pump pressure and vacuum gauges shall be installed adjacent to each other at the pump operator's control panel.</p> <p>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.</p> <p>This gauge shall include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.</p> <p><b><u>PRESSURE GAUGES</u></b></p> <p>The individual "line" pressure gauges for the discharges shall be interlube filled and manufactured by Class 1©.</p> <p>They shall be a minimum of 2.00" in diameter and shall have white faces with black lettering.</p> <p>Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.</p> <p>Gauges shall have a pressure range of 30"-0-400#.</p> <p>The individual pressure gauge shall be installed as close to the outlet control as practical.</p> <p>This gauge shall include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.</p> <p><b><u>WATER LEVEL GAUGE</u></b></p> <p>An electric water level gauge shall be incorporated in the pressure controller that registers water level by means of nine (9) LEDs. They shall be at 1/8 level increments with a tank empty LED. The LEDs shall be a bright type that is readable in sunlight, and have a full 180-degree of clear viewing.</p> <p>To further alert the pump operator, the gauge shall have a warning flash when the tank volume is less than 25 percent. The gauge shall have down chasing LEDs when the tank is almost empty.</p> <p>The level measurement shall be ascertained by sensing the head pressure of the fluid in the tank or cell.</p> <p><b><u>MINI SLAVE UNIT</u></b></p> <p>An electric water level gauge shall be provided in the cab that registers water level by means of five (5) LEDs. They shall be at 1/4 level increments with a tank empty LED. The LEDs shall be a bright type that are readable in sunlight and have a full 180-degree of clear viewing.</p> <p>The water level gauge in the cab shall be activated when the pump is in gear.</p>		

Bidder Complies	
Yes	No

**WATER LEVEL GAUGE**

There shall be two (2) additional water level indicator(s), Whelen®, Model PSTANK2, LED module with chrome trim, installed one (1) each side rearward of crew cab doors.

This light module(s) shall include four (4) colored levels, and function similar to the water level indicator located at the operators panel:

- First green module indicates a full water level
- Second blue module indicates a water level above 3/4 full
- Third amber module indicates a water level above 1/2 full
- Last red module indicates a water level above 1/4 full and empty
  - Above 1/4 this light shall be steady burning
  - At empty this light shall be flashing

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

This module shall be activated when the when either the pump is in gear, or the parking brake is applied.

**FOAM LEVEL GAUGE**

A electric foam level gauge shall be provided on the operator's panel, that registers foam level by means of nine (9) LEDs. There shall also be a mini foam level gauge with five (5) LEDs in the cab. They shall be at 1/8 level increments with a tank empty LED. The LEDs shall be a bright type that is readable in sunlight, and have a full 180 degree of clear viewing. The gauge shall match the water level gauge in the pressure controller.

To further alert the pump operator, shall have a warning flash when the tank volume is less than 25 percent, and shall have Down Chasing LEDs when the tank is almost empty.

The level measurement shall be ascertained by sensing the head pressure of the fluid in the tank or cell. This method provides accuracy with an array of multi-viscosity foams.

The foam level gauge in the cab shall be activated by pump is in gear.

**SIDE CONTROL PUMP OPERATOR'S/PUMP PANEL LIGHTING**

Illumination shall be provided for controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus and the equipment provided on it. External illumination shall be a minimum of five (5) foot-candles on the face of the device. Internal illumination shall be a minimum of four (4) footlamberts.

The pump panels shall be illuminated by two (2) Truck-Lite, Model 60354C, 6.00" x 2.00" oval white LED lights with Model 60700, grommets and chrome covers installed on the back of the cab, one (1) on the driver's side and one (1) on the passenger's side.

The pump operator's panel shall utilize the same LED strip lighting at the forward doorframe as all other compartment lighting.

	Bidder Complies	
	Yes	No
<p>There shall be a small white LED pump engaged indicator light installed overhead.</p> <p><b><u>AIR HORN SYSTEM</u></b></p> <p>Two (2) Grover 2040 rectangular air horns shall be provided. The horns shall be mounted low through the lower bumper flange. 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 the loss of air in the air brake system.</p> <p><b><u>Air Horn Location</u></b></p> <p>The air horns shall be located on each side of the bumper, towards the outside.</p> <p><b><u>AIR HORN CONTROL</u></b></p> <p>The air horns shall be actuated by a lanyard rope pull control within reach of the officer 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.</p> <p><b><u>ELECTRONIC SIREN</u></b></p> <p>A Whelen®, Model 295SLSA1, electronic siren with noise canceling microphone shall be provided.</p> <p>This siren to be active when the battery switch is on and that emergency master switch is on.</p> <p>Electronic siren head shall be recessed in the driver side inside switch panel.</p> <p>The electronic siren shall be controlled on the siren head only. No horn button or foot switches shall be required.</p> <p><b><u>SPEAKER</u></b></p> <p>There shall be one (1) Whelen®, Model SA315P, black nylon composite, 100-watt, speaker with through bumper mounting brackets and polished stainless steel grille provided. The speaker shall be connected to the siren amplifier.</p> <p>The speaker(s) shall be recessed in the center of the front bumper.</p> <p><b><u>AUXILIARY MECHANICAL SIREN</u></b></p> <p>A Federal Q2B® siren shall be furnished.</p> <p>The control solenoid shall be powered up after the emergency master switch is activated.</p> <p>The mechanical siren shall be mounted on the bumper deckplate. It shall be mounted on the left side. The siren mounting shall include a reinforcement plate.</p> <p>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.</p> <p>A momentary red switch shall be included in the left side overhead switch panel to activate the siren brake.</p>		

Bidder Complies	
Yes	No

**FRONT ZONE UPPER WARNING LIGHTS**

There shall be one (1) 72.00" Whelen Freedom IV LED lightbar mounted on the cab roof.

The lightbar shall include the following:

- One (1) red flashing LED module in the driver's side end position.
- One (1) red flashing LED module in the driver's side front corner position.
- One (1) red flashing LED module in the driver's side first front position.
- One (1) red flashing LED module in the driver's side second front position.
- One (1) white flashing LED module in the driver's side third front position.
- One (1) red flashing LED module in the driver's side fourth front position.
- One (1) red flashing LED module in the driver's side fifth front position.
- One (1) 795 LED traffic light controller sent to national standard high priority in the center positions.
- One (1) red flashing LED module in the passenger's side fifth front position.
- One (1) red flashing LED module in the passenger's side fourth front position.
- One (1) white flashing LED module in the passenger's side third front position.
- One (1) red flashing LED module in the passenger's side second front position.
- One (1) red flashing LED module in the passenger's side first front position.
- One (1) red flashing LED module in the passenger's side front corner position.
- One (1) red flashing LED module in the passenger's side end position.

There shall be clear lenses included on the lightbar.

The following switches may be installed in the cab on the switch panel to control the lightbar:

- a switch to control the flashing LED modules.
- the traffic light controller shall be activated with the emergency master switch only,
- and there shall be no momentary switch to activate the traffic light controller.

The two (2) white flashing LED modules and the traffic light controller shall be disabled when the parking brake is applied.

The eight (8) red flashing LED modules in the front positions may be load managed when the parking brake is applied.

**LIGHTS, FRONT ZONE LOWER**

Two (2) Whelen model M6\*C LED flashing warning lights shall be installed on the cab face above the headlights, in a common bezel with the directional lights.

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

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

Both lights shall include a clear lens.

	Bidder Complies	
	Yes	No
<p>There shall be a switch located in the cab on the switch panel to control the lights.</p> <p><b><u>HEADLIGHT FLASHER</u></b></p> <p>The high beam headlights shall flash alternately between the left and right side.</p> <p>There shall be a switch installed in the cab on the switch panel to control the high beam flash. This switch shall be live when the battery switch and the emergency master switches are on.</p> <p>The flashing shall automatically cancel when the hi-beam headlight switch is activated or when the parking brake is set.</p> <p><b><u>SIDE ZONE LOWER LIGHTING</u></b></p> <p>There shall be four (4) Whelen®, Model M6**, 4.31" high x 6.75" long x 1.37" deep flashing LED warning lights with chrome trim installed per the following:</p> <ul style="list-style-type: none"> <li>• Two (2) lights, one (1) each side on the bumper extension. The side front warning LEDs to be red.</li> <li>• Two (2) lights, one (1) each side above rear wheels. The side rear LEDs to be red.</li> <li>• The warning light lens color(s) to be clear.</li> </ul> <p>There shall be a switch in the cab on the switch panel to control the lights.</p> <p><b><u>SIDE WARNING LIGHTS</u></b></p> <p>There shall be two (2) Whelen, Model M6*C LED flashing warning light(s) with bezel(s) provided forward on both sides of upper body.</p> <p>The color of the lights shall be red.</p> <p>All of these lights shall include a clear lens.</p> <p>These lights shall be activated with the Side Zone Lower warning lights.</p> <p><b><u>REAR ZONE LOWER LIGHTING</u></b></p> <p>There shall be two (2) Whelen®, Model M6*C LED flashing warning lights with chrome trim located at the rear of the apparatus.</p> <ul style="list-style-type: none"> <li>• The driver's side rear light to be red</li> <li>• The passenger's side rear light to be red</li> </ul> <p>The lenses shall be clear.</p> <p>There shall be a switch located in the cab on the switch panel to control the lights.</p> <p><b><u>WARNING LIGHTS (REAR AND SIDE UPPER ZONES)</u></b></p> <p>There shall be four (4) Whelen®, Model M6**, 4.31" high x 6.75" wide x 1.37" deep, flashing LED warning lights provided at the rear of the apparatus per the following.</p> <p>The side upper rear light on the left side to include red flashing LEDs.</p>		

	Bidder Complies	
	Yes	No
<p>The rear upper light on the left side to include red flashing LEDs.</p> <p>The rear upper light on the right side to include red flashing LEDs.</p> <p>The side upper rear light on the right side to include red flashing LEDs.</p> <p>These lights shall include a lens that is clear.</p> <p>These lights shall be provided with a flange.</p> <p>There shall be a switch located in the cab on the switch panel to control the lights.</p> <p><b><u>POWER OUTLET STRIP</u></b></p> <p>There shall be two (2) Sentrex Model M5S, 24.00" long x 2.00" wide x 1.75" deep surge protected receptacle strip(s) with five (5) 15 amp 120 volt AC straight blade 90 degree receptacles provided Engine Dog House and in the ems compartment.</p> <p>The strip(s) selected shall be powered from shoreline inlet through a receptacle located adjacent to the strip(s).</p> <p>There shall be a label installed near the strip(s) that state the following:</p> <ul style="list-style-type: none"> <li>• Line Voltage</li> <li>• Current Rating (amps)</li> <li>• Phase</li> <li>• Frequency</li> </ul> <p><b><u>POWER OUTLET STRIP</u></b></p> <p>There shall be one (1) receptacle strip(s) with six (6) 15 amp 120 volt AC straight blade receptacles provided LS1 high on rear wall.</p> <p>The strip(s) selected shall be powered from the shoreline inlet through a receptacle located adjacent to the strip(s).</p> <p>There shall be a label installed near the strip(s) that state the following:</p> <ul style="list-style-type: none"> <li>• Line Voltage</li> <li>• Current Rating (amps)</li> <li>• Phase</li> <li>• Frequency</li> </ul> <p><b><u>POWER OUTLET STRIP</u></b></p> <p>There shall be two (2) Sentrex Model M5S, 24.00" long x 2.00" wide x 1.75" deep surge protected receptacle strip(s) with five (5) 15 amp 120 volt AC straight blade 90 degree receptacles provided D3 Upper and P3 Upper.</p>		

	Bidder Complies	
	Yes	No
<p>The strip(s) selected shall be powered from shoreline inlet through a receptacle located adjacent to the strip(s).</p> <p>There shall be a label installed near the strip(s) that state the following:</p> <ul style="list-style-type: none"> <li>• Line Voltage</li> <li>• Current Rating (amps)</li> <li>• Phase</li> <li>• Frequency</li> </ul> <p><b><u>LOOSE EQUIPMENT</u></b></p> <p>The following equipment shall be furnished with the completed unit:</p> <ul style="list-style-type: none"> <li>• One (1) bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit</li> </ul> <p><b><u>NFPA REQUIRED LOOSE EQUIPMENT PROVIDED BY FIRE DEPARTMENT</u></b></p> <p>The following loose equipment as outlined in NFPA 1901, 2016 edition, section 5.9.3 and 5.9.4 shall be provided by the fire department.</p> <ul style="list-style-type: none"> <li>• 800 ft (60 m) of 2.50" (65 mm) or larger fire hose.</li> <li>• 400 ft (120 m) of 1.50" (38 mm), 1.75" (45 mm), or 2.00" (52 mm) fire hose.</li> <li>• One (1) handline nozzle, 200 gpm (750 L/min) minimum.</li> <li>• Two (2) handline nozzles, 95 gpm (360 L/min) minimum.</li> <li>• One (1) smoothbore or combination nozzle with 2.50" shutoff that flows a minimum of 250 gpm.</li> <li>• One (1) SCBA complying with NFPA 1981 for each assigned seating position, but not fewer than four (4), mounted in brackets fastened to the apparatus or stored in containers supplied by the SCBA manufacturer.</li> <li>• One (1) spare SCBA cylinder for each SCBA carried, each mounted in a bracket fastened to the apparatus or stored in a specially designed storage space(s).</li> <li>• One (1) first aid kit.</li> <li>• Four (4) combination spanner wrenches.</li> <li>• Two (2) hydrant wrenches.</li> <li>• One (1) double female 2.50" (65 mm) adapter with National Hose threads.</li> <li>• One (1) double male 2.50" (65 mm) adapter with National Hose threads.</li> <li>• One (1) rubber mallet, for use on suction hose connections.</li> <li>• Two (2) salvage covers each a minimum size of 12 ft x 14 ft (3.7 m x 4.3 m).</li> <li>• One (1) traffic vest for each seating position, each vest to comply with ANSI/ISEA 207, <i>Standard for High Visibility Public Safety Vests</i>, and have a five-point breakaway feature that includes two (2) at the shoulders, two (2) at the sides, and one (1) at the front.</li> <li>• Five (5) fluorescent orange traffic cones not less than 28.00" (711 mm) in height, each equipped with a 6.00" (152 mm) retro-reflective white band no more than 4.00" (102 mm) wide.</li> </ul>		

	Bidder Complies	
	Yes	No
<p>from the top of the cone, and an additional 4.00" (102 mm) retro-reflective white band 2.00" (51 mm) below the 6.00" (152 mm) band.</p> <ul style="list-style-type: none"> <li>• Five (5) illuminated warning devices such as highway flares, unless the five (5) fluorescent orange traffic cones have illuminating capabilities.</li> <li>• One (1) automatic external defibrillator (AED).</li> <li>• Four (4) ladder belts meeting the requirements of NFPA 1983, <i>Standard on Fire Service Life Safety Rope and System Components</i> (if equipped with an aerial device).</li> <li>• If the supply hose carried does not use sexless couplings, an additional double female adapter and double male adapter, sized to fit the supply hose carried, shall be carried mounted in brackets fastened to the apparatus.</li> <li>• If none of the pump intakes are valved, a hose appliance that is equipped with one or more gated intakes with female swivel connection(s) compatible with the supply hose used on one side and a swivel connection with pump intake threads on the other side shall be carried. Any intake connection larger than 3.00" (75 mm) shall include a pressure relief device that meets the requirements of 16.6.6.</li> <li>• If the apparatus does not have a 2.50" National Hose (NH) intake, an adapter from 2.50" NH female to a pump intake shall be carried, mounted in a bracket fastened to the apparatus if not already mounted directly to the intake.</li> <li>• If the supply hose carried has other than 2.50" National Hose (NH) threads, adapters shall be carried to allow feeding the supply hose from a 2.50" NH thread male discharge and to allow the hose to connect to a 2.50" NH female intake, mounted in brackets fastened to the apparatus if not already mounted directly to the discharge or intake.</li> </ul> <p><b><u>SOFT SUCTION HOSE</u></b> There shall be no soft suction hose provided.</p> <p><b><u>DRY CHEMICAL EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u></b> NFPA 1901, 2016 edition, section 5.9.4 requires one (1) approved dry chemical portable fire extinguisher with a minimum 80-B:C rating mounted in a bracket fastened to the apparatus.  The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.</p> <p><b><u>WATER EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u></b> NFPA 1901, 2016 edition, section 5.9.4 requires one (1) 2.5 gallon or larger water extinguisher mounted in a bracket fastened to the apparatus.  The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.</p> <p><b><u>FLATHEAD AXE PROVIDED BY FIRE DEPARTMENT</u></b> NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) flathead axe mounted in a bracket fastened to the apparatus.</p>		

	Bidder Complies	
	Yes	No
<p>The axe is not on the apparatus as manufactured. The fire department shall provide and mount the axe.</p> <p><b><u>PICKHEAD AXE PROVIDED BY FIRE DEPARTMENT</u></b></p> <p>NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) pickhead axe mounted in a bracket fastened to the apparatus.</p> <p>The axe is not on the apparatus as manufactured. The fire department shall provide and mount the axe.</p> <p><b><u>PAINT</u></b></p> <p>The exterior custom cab and body painting procedure shall consist of a seven (7) step finishing process as follows:</p> <ol style="list-style-type: none"> <li>1. <u>Manual Surface Preparation</u> - 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.</li> <li>2. <u>Chemical Cleaning and Pretreatment</u> - 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.</li> <li>3. <u>Surfacer Primer</u> - The Surfacer Primer shall be applied to a chemically treated metal surface to provide a strong corrosion protective basecoat. A minimum thickness of 2 mils of Surfacer Primer is applied to surfaces that require a Critical aesthetic finish. The Surfacer Primer is a two-component high solids urethane that has excellent sanding properties and an extra smooth finish when sanded.</li> <li>4. <u>Finish Sanding</u> - 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.</li> <li>5. <u>Sealer Primer</u> - The Sealer Primer is applied prior to the Basecoat 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 topcoated.</li> <li>6. <u>Basecoat Paint</u> - Two coats of a high performance, two component high solids polyurethane basecoat shall be applied. The Basecoat shall be applied to a thickness that shall achieve the proper color match. The Basecoat shall be used in conjunction with a urethane clear coat to provide protection from the environment.</li> </ol>		

	Bidder Complies	
	Yes	No
<p>7. <u>Clear Coat</u> - Two (2) coats of Clear Coat shall be applied over the Basecoat color. The Clear Coat is a two-component high solids urethane that provides superior gloss and durability to the exterior surfaces. Lap style and roll-up doors shall be Clear Coated to match the body. Paint warranty for the roll-up doors shall be provided by the roll-up door manufacture.</p> <p>Each batch of basecoat 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 shall 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 shall be used to determine the color match. A Delta E reading shall be used to determine a good color match within each family color.</p> <p>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.</p> <p>The paint finish quality levels for critical areas of the apparatus (cab front and sides, body sides and doors, and boom lettering panels) are to meet or exceed Cadillac/General Motors GMW15777 global paint requirements. Orange peel levels are to meet or exceed the #6 A.C.T.standard in critical areas. These requirements must be met in order for the exterior paint finish to be considered acceptable. The manufacture's written paint standards shall be available upon request.</p> <p>The cab shall be two-tone, with the upper section painted #10 white along with a shield design on the cab face and lower section of the cab and body painted #70 red.</p> <p><b><u>PAINT - ENVIRONMENTAL IMPACT</u></b></p> <p>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:</p> <ul style="list-style-type: none"> <li>• Topcoats and primers shall be chrome and lead free.</li> <li>• 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.</li> <li>• Particulate emission collection from sanding operations shall have a 99.99% efficiency factor.</li> <li>• 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 98.00%. Water wash systems shall be 99.97% efficient</li> <li>• Water from water wash booths shall be reused. Solids shall be removed on a continual basis to keep the water clean.</li> <li>• Paint wastes are disposed of in an environmentally safe manner.</li> <li>• Empty metal paint containers shall be to recover the metal.</li> </ul>		

Bidder Complies	
Yes	No

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

**PAINT CHASSIS FRAME ASSEMBLY**

The chassis frame assembly shall be finished with a single system black top coat before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, etc.

Components that are included with the chassis frame assembly that shall be painted are:

- Frame rails
- Frame liners
- Cross members
- Axles
- Suspensions
- Steering gear
- Battery boxes
- Bumper extension weldment
- Frame extensions
- Body mounting angles
- Rear Body support substructure (front and rear)
- Pump house substructure
- Air tanks
- Steel fuel tank
- Castings
- Individual piece parts used in chassis and body assembly

Components treated with epoxy E-coat protection prior to paint:

- Two (2) C-channel frame rails
- Two (2) frame liners

The E-coat process shall meet the technical properties shown.

**AXLE HUB PAINT**

All axle hubs shall be painted [Paint, Axle Hub].

**COMPARTMENT INTERIOR PAINT**

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

	Bidder Complies	
	Yes	No
<p><b><u>REFLECTIVE STRIPES</u></b>  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" white stripe at the top with a 1.00" gap then a 6.00" white stripe with a 1.00" gap and a 1.00" white stripe on the bottom.</p> <p><b><u>REFLECTIVE STRIPE ON CAB FACE</u></b>  The reflective band provided on the cab face shall be located below the stainless steel trim band and above the front bumper.</p> <p><b><u>REAR CHEVRON STRIPING</u></b>  There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus. The rear surface, excluding the rear roll up door, shall be covered.</p> <p>The colors shall be red and fluorescent yellow green diamond grade.</p> <p>Each stripe shall be 6.00" in width.</p> <p>This shall meet the requirements of the current edition of NFPA 1901, which states that 50% of the rear surface shall be covered with chevron striping.</p> <p><b><u>"Z" RIBBON IN REFLECTIVE STRIPE</u></b>  "Z" type ribbon(s) shall be added to the reflective stripe. Areas adjacent to the "Z" portion of the stripe shall be shaded and highlighted with an air brush to give it a ribbon affect. There shall be one (1) pair on the vehicle.</p> <p><b><u>CAB DOOR REFLECTIVE STRIPE</u></b>  A 6.00" x 16.00" white reflective stripe shall be provided across the interior of each cab door. The stripe shall be located approximately 1.00" up from the bottom, on the door panel.</p> <p>This stripe shall meet the NFPA 1901 requirement.</p> <p><b><u>LETTERING</u></b>  The lettering shall be totally encapsulated between two (2) layers of clear vinyl.</p> <p><b><u>LETTERING</u></b>  Forty-one (41) to sixty (60) genuine gold leaf lettering, 3.00" high, with outline and shade shall be provided.</p> <p><b><u>LETTERING</u></b>  One (1) to twenty (20) reflective lettering, 8.00" high, with highlight and shade shall be provided.</p> <p><b><u>DECAL INSTALLATION</u></b>  There shall be one (1) decal/s furnished by the fire department and applied by the apparatus manufacturer.</p>		

Bidder Complies	
Yes	No

**CUSTOM CHASSIS RUST PROOF / UNDERCOAT**

The rust proof/undercoat option shall provide additional paint to the chassis frame rails and a protective coating that shall help fight corrosion.

**Rust proof / Undercoat Process**

A coating shall be applied to the custom chassis once the cab, pump and body mounting angles have been installed. The coating texture shall be waxy and pliable after drying so it shall not chip, crack, or peel off during normal vehicle operations.

The rust proofing material shall be the color black, and is a coating of a corrosion inhibitor for long-term protection against corrosion.

The material shall be applied to the following areas:

- Outside of the chassis frame rails (top & side)
- Top of the frame rails
- Top of cross members
- Inside of the frame rails - in and around harnesses keeping coating off harnesses as best as possible
- Between the frame and liner - coating shall be applied after frame and liner are assembled using a wand to apply material between as best as possible
- Top of the body mounting angles (including rear platform)
- Top of air tanks
- Top of fuel tank

**UNDERCOATING FUEL TANK**

The apparatus fuel tank shall be fully undercoated by an authorized Ziebart dealer.

The fuel tank shall be undercoated with an asphalt petroleum based material, dark in color.

The undercoating material utilized on the tank shall be formulated to resist corrosion and deaden unwanted sound or road noise.

Coating texture shall appear firm, flexible, and resistant to abrasion. Minimum dry film thickness shall be in the range of 8.00 to 12.00 mils.

The material shall be applied to the fuel tank prior to tank installation on the apparatus.

**FIRE APPARATUS PARTS CD MANUAL**

There shall be two (2) custom parts manuals for the complete fire apparatus provided in CD format with the completed unit.

The manuals shall contain the following:

- Job number
- Part numbers with full descriptions

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <li>• Table of contents</li> <li>• Parts section sorted in functional groups reflecting a major system, component, or assembly</li> <li>• Parts section sorted in alphabetical order</li> <li>• Instructions on how to locate parts</li> </ul> <p>The manuals shall be specifically written for the chassis and body model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.</p> <p><b><u>SERVICE PARTS INTERNET SITE</u></b></p> <p>The service parts information included in these manuals 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.</p> <p><b><u>CHASSIS SERVICE CD MANUALS</u></b></p> <p>There shall be two (2) CD format chassis service manuals containing parts and service information on major components provided with the completed unit.</p> <p>The manual shall contain the following sections:</p> <ul style="list-style-type: none"> <li>• Job number</li> <li>• Table of contents</li> <li>• Troubleshooting</li> <li>• Front Axle/Suspension</li> <li>• Brakes</li> <li>• Engine</li> <li>• Tires</li> <li>• Wheels</li> <li>• Cab</li> <li>• Electrical, DC</li> <li>• Air Systems</li> <li>• Plumbing</li> <li>• Appendix</li> </ul> <p>The manual shall be specifically written for the chassis model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.</p> <p><b><u>CHASSIS OPERATION CD MANUALS</u></b></p> <p>There shall be two (2) CD format chassis operation manuals provided.</p> <p><b><u>ONE (1) YEAR MATERIAL AND WORKMANSHIP</u></b></p> <p>Each new piece of apparatus shall be provided with a minimum <b>one (1) year</b> basic apparatus material and workmanship limited warranty. The warranty shall cover such portions of the</p>		

	Bidder Complies	
	Yes	No
<p>apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><b><u>ENGINE WARRANTY</u></b></p> <p>A Cummins <b>five (5) year</b> limited engine warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.</p> <p><b><u>STEERING GEAR WARRANTY</u></b></p> <p>A TRW <b>one (1) year</b> limited steering gear warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.</p> <p><b><u>FIFTY (50) YEAR STRUCTURAL INTEGRITY</u></b></p> <p>The chassis frame shall be provided with a <b>fifty (50) year</b> material and workmanship limited warranty. The warranty shall cover the chassis frame as being free from defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><b><u>FRONT AXLE TWO (2) YEAR MATERIAL AND WORKMANSHIP WARRANTY</u></b></p> <p>A Meritor™ Axle <b>two (2) year</b> limited warranty shall be provided.</p> <p><b><u>SINGLE REAR AXLE FIVE (5) YEAR MATERIAL AND WORKMANSHIP WARRANTY</u></b></p> <p>A Meritor™ Axle 5 year limited warranty shall be provided.</p> <p><b><u>ABS BRAKE SYSTEM THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY</u></b></p> <p>A Meritor Wabco™ ABS brake system <b>three (3) year</b> limited warranty shall be provided.</p> <p><b><u>TEN (10) YEAR STRUCTURAL INTEGRITY</u></b></p> <p>The new cab shall be provided with a <b>ten (10) year</b> material and workmanship limited warranty. The warranty shall cover such portions of the cab built by the manufacturer as being free from structural failures caused by defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><b><u>TEN (10) YEAR PRO-RATED PAINT AND CORROSION</u></b></p> <p>Each new piece of apparatus shall be provided with a <b>ten (10) year</b> pro-rated paint and corrosion limited warranty on the apparatus cab. 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.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p>		

	Bidder Complies	
	Yes	No
<p><b><u>CAMERA SYSTEM WARRANTY</u></b> A fifty four (54) month warranty shall be provided for the camera system.</p> <p><b><u>COMPARTMENT LIGHT WARRANTY</u></b> A ten (10) year material and workmanship limited warranty shall be provided for the Pierce 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).</p> <p><b><u>TRANSMISSION WARRANTY</u></b> The transmission shall have a <b>five (5) year/unlimited mileage</b> warranty covering 100 percent parts and labor. The warranty is to be provided by Allison Transmission and not the apparatus builder.</p> <p><b><u>TRANSMISSION COOLER WARRANTY</u></b> The transmission cooler shall carry a five (5) year parts and labor warranty (exclusive to the transmission cooler). In addition, a collateral damage warranty shall also be in effect for the first three (3) years of the warranty coverage and shall not exceed \$10,000 per occurrence. A copy of the warranty certificate shall be submitted with the bid package.</p> <p><b><u>WATER TANK WARRANTY</u></b> 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).</p> <p><b><u>TEN (10) YEAR STRUCTURAL INTEGRITY</u></b> Each new piece of apparatus shall be provided with a <b>ten (10) year</b> 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).</p> <p><b><u>ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY</u></b> An AMDOR roll-up door limited warranty shall be provided. The roll-up door shall be warranted against manufacturing defects for a period of <b>ten (10) years</b>. A <b>five (5) year</b> limited warranty shall be provided on painted roll up doors.  A copy of the warranty certificate shall be submitted with the bid package.</p> <p><b><u>SIX (6) YEAR PARTS, ONE (1) YEAR LABOR</u></b> The pump and its components shall be provided with a six (6) year parts and one (1) year labor limited warranty. The manufacturer's warranty shall provide that the pump and its components shall be free from failures caused by defects in material and workmanship that would arise under normal use and service.</p>		

	Bidder Complies	
	Yes	No
<p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><b><u>TEN (10) YEAR PUMP PLUMBING WARRANTY</u></b></p> <p>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 <b>ten (10) years or 100,000 miles</b>. 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.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><b><u>FOAM SYSTEM WARRANTY</u></b></p> <p>A <b>one (1) year</b> material and workmanship limited warranty shall be provided on the foam system. A <b>five (5) year</b> material and workmanship limited warranty shall be provided on the foam system control head.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><b><u>TEN (10) YEAR PRO-RATED PAINT AND CORROSION</u></b></p> <p>Each new piece of apparatus shall be provided with a <b>ten (10) year</b> 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.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><b><u>THREE (3) YEAR MATERIAL AND WORKMANSHIP</u></b></p> <p>The gold leaf lamination shall be provided with a <b>three (3) year</b> 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.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><b><u>VEHICLE STABILITY CERTIFICATION</u></b></p> <p>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.</p> <p><b><u>ENGINE INSTALLATION CERTIFICATION</u></b></p> <p>The fire apparatus manufacturer shall provide a certification, along with a letter from the engine manufacturer stating they approve of the engine installation in the bidder's chassis. The certification shall be provided at the time of delivery.</p>		

	Bidder Complies	
	Yes	No
<p><b><u>POWER STEERING CERTIFICATION</u></b></p> <p>The fire apparatus manufacturer shall provide a certification stating the power steering system as installed meets the requirements of the component supplier. The certification shall be provided at the time of bid.</p> <p><b><u>CAB INTEGRITY CERTIFICATION</u></b></p> <p>The fire apparatus manufacturer shall provide a cab crash test certification with this proposal. The certification shall state that a specimen representing the substantial structural configuration of the cab has been tested and certified by an independent third party test facility. Testing events shall be documented with photographs, real-time and high-speed video, vehicle accelerometers, cart accelerometers, and a laser speed trap. The fire apparatus manufacturer shall provide a state licensed professional engineer to witness and certify all testing events. Testing shall meet or exceed the requirements below:</p> <ul style="list-style-type: none"> <li>• European Occupant Protection Standard ECE Regulation No.29.</li> <li>• SAE J2422 Cab Roof Strength Evaluation - Quasi-Static Loading Heavy Trucks.</li> <li>• SAE J2420 COE Frontal Strength Evaluation - Dynamic Loading Heavy Trucks.</li> </ul> <p><b><u>Roof Crush</u></b></p> <p>The cab shall be subjected to a roof crush force of 22,500 lb. This value meets the ECE 29 criteria, and is equivalent to the front axle rating up to a maximum of ten (10) metric tons.</p> <p><b><u>Side Impact</u></b></p> <p>The same cab shall be subjected to dynamic preload where a 13,275-lb moving barrier is slammed into the side of the cab at 5.50 mph, striking with an impact of 13,000 ft-lb of force. This test is part of the SAE J2422 test procedure and more closely represents the forces a cab shall see in a rollover incident.</p> <p><b><u>Frontal Impact</u></b></p> <p>The same cab shall withstand a frontal impact of 32,600 ft-lb of force using a moving barrier in accordance with SAE J2420.</p> <p><b><u>Additional Frontal Impact</u></b></p> <p>The same cab shall withstand a frontal impact of 65,200 ft-lb of force using a moving barrier. (Twice the force required by SAE J2420)</p> <p>The same cab shall withstand all tests without any measurable intrusion into the survival space of the occupant area.</p> <p>There shall be no exception to any portion of the cab integrity certification. Nonconformance shall lead to immediate rejection of bid.</p> <p><b><u>CAB DOOR DURABILITY CERTIFICATION</u></b></p> <p>Robust cab doors help protect occupants. Cab doors shall survive a 200,000 cycle door slam test where the slamming force exceeds 20 G's of deceleration. The bidder shall certify that the</p>		

Bidder Complies	
Yes	No

sample doors similar to those provided on the apparatus have been tested and have met these criteria without structural damage, latch malfunction, or significant component wear.

**WINDSHIELD WIPER DURABILITY CERTIFICATION**

Visibility during inclement weather is essential to safe apparatus performance. Windshield wipers shall survive a 3 million cycle durability test in accordance with section 6.2 of SAE J198 *Windshield Wiper Systems - Trucks, Buses and Multipurpose Vehicles*. The bidder shall certify that the wiper system design has been tested and that the wiper system has met these criteria.

**ELECTRIC WINDOW DURABILITY CERTIFICATION**

Cab window roll-up systems can cause maintenance problems if not designed for long service life. The window regulator design shall complete 30,000 complete up-down cycles and still function normally when finished. The bidder shall certify that sample doors and windows similar to those provided on the apparatus have been tested and have met these criteria without malfunction or significant component wear.

**SEAT BELT ANCHOR STRENGTH**

Seat belt attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat belt anchor design shall withstand 3000 lb of pull on both the lap and shoulder belt in accordance with FMVSS 571.210 Seat Belt Assembly Anchorages. The bidder shall certify that each anchor design was pull tested to the required force and met the appropriate criteria.

**SEAT MOUNTING STRENGTH**

Seat attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat mounting design shall be tested to withstand 20 G's of force in accordance with FMVSS 571.207 Seating Systems. The bidder shall certify, at time of delivery, that each seat mount and cab structure design was pull tested to the required force and met the appropriate criteria.

**PERFORMANCE CERTIFICATIONS**

**Cab Air Conditioning**

Good cab air conditioning temperature and air flow performance keeps occupants comfortable, reduces humidity, and provides a climate for recuperation while at the scene. The cab air conditioning system shall cool the cab from a heat-soaked condition at 100 degrees Fahrenheit to an average of 78 degrees Fahrenheit in 30 minutes. The bidder shall certify that a substantially similar cab has been tested and has met these criteria.

**Cab Defroster**

Visibility during inclement weather is essential to safe apparatus performance. The defroster system shall clear the required windshield zones in accordance with SAE J381 Windshield Defrosting Systems Test Procedure And Performance Requirements - Trucks, Buses, And

Bidder Complies	
Yes	No

Multipurpose Vehicles. The bidder shall certify that the defrost system design has been tested in a cold chamber and passes the SAE J381 criteria.

**Cab Auxiliary Heater**

Good cab heat performance and regulation provides a more effective working environment for personnel, whether in-transit, or at a scene. An auxiliary cab heater shall warm the cab 77 degrees Fahrenheit from a cold-soak, within 30 minutes when tested using the coolant supply methods found in SAE J381. The bidder shall certify, at time of delivery, that a substantially similar cab has been tested and has met these criteria.

**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).

**Extrication Equipment:**

- 1 28 Volt Battery Operated Hydraulic Spreader, with a 24-inch opening, weighing no more than 40 pounds.
- 1 28 Volt Battery Operated Hydraulic Cutter, not exceeding 51.8 pounds in weight, with Replaceable blades.
- 1 28 Volt Battery Operated Hydraulic Ram, weighing no more than 35.70 pounds, and no more than 21.50 inches long.
- 1 Ram Accessory Kit. Bag/Box for kit not to exceed 15 inches in length, and be no more than 4.50 inches wide.
- 1 3 Bay Bank Charger for 28-volt batteries.
- 1 110 Volt Battery adapter for battery operated hydraulic rescue tools.
- 5 Spare 28-volt batteries.

Bidder Complies	
Yes	No

All Equipment shall be mounted prior to final delivery of the truck to the department.

**The following Equipment shall be priced with the truck and as a separate Price separate from the truck and extrication tools...**

Appendix A: Additional Equipment To be Provided

- 4 1.75 X 50 ft 800 psi Burst Attack hose, Yellow
- 4 1.75 X 50 ft 800 psi Burst Attack hose, Blue
- 10 1.75 X 50 ft 800 psi Burst Attack hose, Orange
- 8 2.5 X 50 ft 800 psi Burst Attack hose, Red
- 11 100ft X 5inch Storz LDH Supply Hose, Yellow
- 2 25ft X 5inch Storz LDH Supply Hose, Red
- 3 1 ¾ Selectable Gallonage nozzle 30-200 gpm
- 2 2 1/2 Selectable Gallonage nozzle 95-300 gpm
- 2 1 inch booster nozzles 12-60 gpm
- 1 Hydrant wrench w/2 Spanner wrench set with mount
- 3 2 spanner wrench set with mount bracket
- 2 2 wrench LDH spanner sets
- 1 Battery powered PPV fan with 2 Milwaukee batteries and AC jack
- 1 EU2200W Portable Generator
- 1 #285 Hose Clamp or equivalent
- 1 2 ½ Gallon Water Extinguisher
- 1 ABC Extinguisher
- 1 Co2 Extinguisher
- 2 dog bone style 3 ft pike poles with d handle
- 1 dog bone style 6 ft pike poles
- 1 dog bone style 8 ft pike poles
- 1 6lb pick axe, fiberglass lime handle
- 1 6lb flat axe, slotted for halligan fiberglass lime handle
- 1 8lb Sledge Hammer, fiberglass lime handle
- 1 6 inch X 5 inch Storz Low profile intake relief valve with cap
- 1 2.5 inch X (2) 1 ½ male gated wye
- 2 20,000 lumen portable scene light on a base,15-20 twist-lock plug
- 6 5 gallon pails of class A foam, Must match current foam formula
- 5 Right angle flashlights with a swivel head
- 1 5 bank charger for above lights
- 1 adapter to convert snap change scba bottles to CGA for air bag

		Bidder Complies	
		Yes	No
1	6X6 Airbag to work with current Paratech Air controller		
1	12X12 Airbag to work with current Paratech Air controller		
1	10 ft tripod with carry bag, Skedco or equivalent		
1	Plastic Stokes basket with stainless rails (junken JSA200 or equal		
1	Basic Rescue System Stretcher- Orange		
1	Halligan Pro-Bar 30, PB-30 Firehooks Unlimited		
1	Trash Hook		
1	Flat Shovel		
1	Spade shovel		
1	6 foot All Purpose Hook/ FDNY Hook, Firehooks Unlimited		
1	Lockout/Tagout Kit		
5	Safety Vest (1 for each riding assignment)		
1	200 foot section of ½" Static Rescue Rope, Yellow in color.		
2	Class 3 Rescue Harnesses		
2	Red, Rope Rescue Helmets with vents.		
2	Brake-Bar racks for rope rescue.		
15	Steel, NFPA rated carabiners.		
1	Bag capable of carrying 200 feet of rope and rope rescue equipment.		
1	Pre-rigged 4:1 rope system with 200 feet of rope.		
1	Steel Rope Rescue rigging plate with at least 6 openings.		
2	Cloth style edge protection/ edge pad for rope.		