

Specification	Bidder Complies	
	Yes	No
<p><b>SPECIFICATIONS FOR A TRIPLE COMBINATION PUMPER</b></p> <p><b><u>INTENT OF SPECIFICATIONS</u></b></p> <p>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 and test to which the apparatus shall conform, together with certain details as to finish, equipment and appliances with which the successful bidder shall conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor. The manufacturer shall provide loose equipment only when specified by the customer. Otherwise, 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>In order to ensure fair, ethical, and legal competition, either original equipment manufacturer (O.E.M.) or 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).</p> <p>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. Further, bidder shall maintain dedicated service facilities for the repair and service of products. Evidence of such a facility shall be included in bidder proposal.</p> <p>Each bidder shall furnish satisfactory evidence of their ability to construct the apparatus specified and shall state the location of the factory where the apparatus is to be built. The bidder shall also show that the company is in position to render prompt service and to furnish replacement parts.</p> <p>Each bid shall be accompanied by a detailed set of Contractor's Specifications consisting of a detailed description of the apparatus and equipment proposed, and to which the apparatus furnished under contract shall conform. These specifications shall indicate size, type, model and make of all component parts and equipment.</p> <p><b><u>QUALITY AND WORKMANSHIP</u></b></p> <p>The design of the apparatus shall embody the latest approved automotive engineering practices. The workmanship shall be of the highest quality in its respective field. Special consideration shall be given to the following points: Accessibility of the various units which require periodic maintenance; ease of operation (including both pumping and driving); and symmetrical proportions. Construction shall be rugged and ample safety factors shall be provided to carry the loads specified and to meet both on and off road requirements and speed conditions as set forth under Performance Tests and Requirements. Welding shall not be employed in the assembly of the apparatus in a manner that shall prevent the ready removal of any component part for</p>		

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<p>service or repair. 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 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><b><u>DELIVERY</u></b>  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 engineer representing the contractor shall deliver the apparatus and remain for a sufficient length of time to instruct personnel in the proper operation, care and maintenance of the equipment delivered.</p> <p><b><u>INFORMATION REQUIRED</u></b>  The manufacturer shall supply at time of delivery, complete operation and maintenance manuals covering the completed apparatus as delivered. A permanent plate shall be mounted in the driver's compartment which specifies the quantity and type of fluids required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.</p> <p><b><u>SAFETY VIDEO</u></b>  Documentation provided at the time of delivery shall also include an apparatus safety video, in DVD format. 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: vehicle pre-trip inspection, chassis operation, pump operation, and maintenance.</p> <p><b><u>PERFORMANCE TESTS AND REQUIREMENTS</u></b>  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 axles 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:</p> <p>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.</p>		

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<p>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.</p> <p>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.</p> <p>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 its governed rpm (full load).</p> <p><b><u>FAILURE TO MEET TEST</u></b>  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.</p> <p><b><u>LIABILITY</u></b>  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>SPECIFICATION BID REQUIREMENTS</u></b>  Bidders shall also indicate in the "yes/no" column if their bid complies <b>on each item</b> (PARAGRAPH) specified. 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.</p> <p><b>Proposals taking total exception to specifications shall not be acceptable.</b></p> <p>Also, bidders shall submit a detailed proposal. A letter only, even though written on a company letterhead, shall not be sufficient. Bid proposals shall be submitted in the same sequence as specifications for ease of evaluation, comparison and checking of compliance. <b>An exception to these requirements shall not be tolerated.</b></p> <p><b><u>EXCEPTIONS</u></b>  All exceptions shall be stated no matter how seemingly minor. Any exceptions not taken shall be assumed by the purchaser to be included in the proposal, regardless of the cost to the bidder.</p>		

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<p><b><u>GENERAL CONSTRUCTION</u></b>  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><b><u>COMMERCIAL GENERAL LIABILITY INSURANCE</u></b>  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> <table border="0"> <tr> <td style="padding-right: 40px;">Each Occurrence</td> <td style="text-align: right;">\$1,000,000</td> </tr> <tr> <td>Products/Completed Operations Aggregate</td> <td style="text-align: right;">\$1,000,000</td> </tr> <tr> <td>Personal and Advertising Injury</td> <td style="text-align: right;">\$1,000,000</td> </tr> <tr> <td>General Aggregate</td> <td style="text-align: right;">\$5,000,000</td> </tr> </table> <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>  The successful bidder shall, during the performance of the contract keep in force at least the following minimum limits of commercial automobile liability insurance:</p> <table border="0"> <tr> <td style="padding-right: 40px;">Each Accident Combined Single Limit:</td> <td style="text-align: right;">\$1,000,000</td> </tr> </table> <p>Coverage shall be written on a Commercial Automobile liability form.</p> <p><b><u>UMBRELLA/EXCESS LIABILITY INSURANCE</u></b>  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> <table border="0"> <tr> <td style="padding-right: 40px;">Aggregate:</td> <td style="text-align: right;">\$25,000,000</td> </tr> <tr> <td>Each Occurrence:</td> <td style="text-align: right;">\$25,000,000</td> </tr> </table> <p>The umbrella policy shall be written on an occurrence basis and at a minimum provide excess to the Bidder's General Liability, Automobile Liability and Employer's Liability policies.</p> <p>The required limits can be provided by one (1) or more policies provided all other insurance requirements are met.</p> <p>Coverage shall be provided by a carrier(s) rated A- or better by A.M. Bests.</p>	Each Occurrence	\$1,000,000	Products/Completed Operations Aggregate	\$1,000,000	Personal and Advertising Injury	\$1,000,000	General Aggregate	\$5,000,000	Each Accident Combined Single Limit:	\$1,000,000	Aggregate:	\$25,000,000	Each Occurrence:	\$25,000,000		
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<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. Bidder agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with its bid. The certificate shall show the purchaser as certificate holder.</p> <p><b><u>ISO COMPLIANCE</u></b>  The manufacturer shall 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><b><u>SINGLE SOURCE MANUFACTURER</u></b>  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 and body being fabricated and assembled on the bidder's premises. The warranties relative to the chassis and body design (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 and chassis). The bidder shall provide evidence that they comply with this requirement.</p> <p><b><u>COMPARISON REPORT</u></b>  A report shall be provided to allow the Sales Representative to compare the options to a previous job. The report shall be provided for job 24737.</p> <p><b><u>SPECIAL INSTRUCTIONS</u></b>  The apparatus being proposed shall be designed and built to match the Job # 27373. However, some variation may be necessary due to changes in our manufacturing processes or our product offering. Revisions in NFPA guidelines and/or other regulations may also affect our ability to match the previous unit.</p> <p>If the previous unit had a pump, a pump panel layout shall be provided that shall match the old configuration as closely as possible.</p> <p><b><u>NFPA 2009 STANDARDS</u></b>  This unit shall comply with the NFPA standards effective January 1, 2009, 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>		

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<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> <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>  The apparatus shall be third-party, independent, audit-certified through Underwriters Laboratory (UL) to the current edition of NFPA 1901 standards. The certification includes: all design, production, operational, and performance testing of the apparatus. (no exception)</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>AFTERMARKET SUPPORT WEBSITE</u></b>  A Customer Service website shall provide authorized dealers access to comprehensive information pertaining to the maintenance and service of their customer's apparatus. This tool shall provide the authorized dealer the ability to service and support their customers to the best of their ability with factory support at their fingertips.</p> <p>This website shall also be accessible to the end user through the guest login. Limited access is available and vehicle specific parts information accessible by</p>		

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<p>entering a specific VIN number. All end users should see their local authorized dealer for additional support and service.</p> <p>The website shall provide the following to the designated individuals:</p> <ul style="list-style-type: none"> <li>- Authorized dealer only - ability to access truck detail information on the major components of the vehicle, warranty information, available vehicle photographs, vehicle drawings, sales options, applicable vehicle software downloads, etc.</li> <li>- Authorized dealer and customer - parts look-up capability, with the aid of digital photographs, part drawings, and assembly drawings.</li> <li>- Authorized dealer only - ability to electronically submit warranty claims directly to the factory for reimbursement.</li> <li>- Authorized dealer only - accessibility to multiple dealer reports that allow the dealership to maintain communication with the customer on the status of orders, claims, and phone contacts.</li> <li>- Authorized dealer and customer - access to all currently published Operation and Maintenance and Service publications.</li> <li>- Authorized dealer only - access to manufacturer Service Bulletins and Work Instructions containing information on current service topics and recommendations provided.</li> <li>- Authorized dealer and customer - access to upcoming training classes offered by the manufacturer.</li> <li>- Authorized dealer only - access to interactive electronic learning modules (Operators Guides) covering the operation of major vehicle components.</li> <li>- Authorized dealer only - access to customer service articles, corporate news, quarterly newsletters, and key contacts.</li> </ul> <p><b><u>BID BOND, NOT REQUESTED</u></b></p> <p>A bid bond shall not be included. If requested, the following shall apply:</p> <p>All bidders shall provide a bid bond as security for the bid in the form of a 5% 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>		

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<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, 1 YEAR</u></b></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 100 % 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 one (1) year 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 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>		



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<p><b><u>CHASSIS</u></b> Chassis provided shall be a new, tilt-type, custom fire apparatus. The chassis shall be manufactured in the apparatus body builder's facility, thus eliminating any split responsibility. The chassis shall be designed and manufactured for heavy-duty service with adequate strength and capacity to sustain the intended load and the type of service required.</p> <p><b><u>WHEELBASE</u></b> The wheelbase of the vehicle shall be no greater than 195.00".</p> <p><b><u>GVW RATING</u></b> The gross vehicle weight rating shall be a minimum of 44,800 #'s.</p> <p><b><u>FRAME</u></b> 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 have a 13.38" tall web over the front and mid sections of the chassis, with a continuous smooth taper to 10.75" over the rear axle. Each rail shall have a section modulus of 25.992 cubic inches and a resisting bending moment (rbm) of 3,119,040 in-lb over the critical regions of the frame assembly, with a section modulus of 18.96 cubic inches with an rbm of 2,275,200 in-lb over the rear axle. The frame rails shall be constructed of 120,000 psi yield strength heat-treated .38" thick steel, with 3.50" wide flanges.</p> <p><b><u>FRAME REINFORCEMENT</u></b> In addition, a mainframe inverted "L" liner shall be provided. It shall be heat-treated steel measuring 12.00" x 3.00" x .25". Each liner shall have a section modulus of 7.795 cubic inches, yield strength of 110,000 psi, and rbm of 857,462 in-lb. Total rbm at wheelbase center shall be 3,976,502 pounds per rail.  The frame liner shall be mounted inside of the chassis frame rail, beginning at the front edge of the mainframe rail and extending to the rear cab crossmember.</p> <p><b><u>FRONT AXLE</u></b> The front axle shall be a reverse "I" beam type with inclined king pins. It shall be a Meritor™ axle, Model FL-943, with a rated capacity of 20,800 lb.  The turning angle shall be 45 degrees or greater.  A viewing window shall be provided on each side of the axle for checking the oil level.</p> <p><b><u>STEERING CRAMP ANGLE CERTIFICATION</u></b> The fire apparatus manufacturer shall provide, at time of bid, a letter from an independent third party testing agency stating they approve the steering cramp angle.</p>		

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<p>Highly specialized options may limit the cramp.</p> <p><b><u>FRONT SUSPENSION</u></b>  Front springs shall be a heavy-duty, taper leaf design, 54.00" long by 4.00" wide, with a ground rating of 21,500 lb.</p> <p>Kaiser spring pins shall be provided with double figure-eight grease grooves and a layer of electroless nickel plating, 1.0 mil thick around the entire pin. The bushing that holds the spring pin in place shall also have a grease groove.</p> <p><b><u>SHOCK ABSORBERS</u></b>  Heavy-duty telescoping shock absorbers (Monroe Magnum 65) shall be provided on the front axle.</p> <p><b><u>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 Michelin 425/65R22.50 radials, 20 ply XFE wide base tread, rated for 22,800 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-24-160, with a capacity of 24,000 lb.</p> <p><b><u>TOP SPEED OF VEHICLE</u></b>  NFPA 1901, 2009 edition requires limits on the top speed of vehicles. NFPA 4.15.2 requires that the maximum top speed of fire apparatus with a GVWR over 26,000 lb shall not exceed either 68 mph or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower. NFPA 4.15.3 requires that if the combined water tank and foam agent tank on the fire apparatus exceed 1250 gallons or the GVWR of the vehicle is over 50,000 lb, the maximum top speed of the apparatus shall not exceed either 60 mph or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower. It is the intention of the standard to improve safety by limiting the speed of all apparatus to 68 mph, and tankers or heavy apparatus to 60 mph. By requesting an exception to this requirement, the purchasing authority is consciously choosing to operate their apparatus at speeds above the limits designated as safe speeds by the NFPA Technical Committee on Fire Department Apparatus.</p> <p>The top speed of the apparatus as manufactured exceeds the NFPA requirements. Per fire department specification of a top speed that exceeds</p>		

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<p>NFPA requirements, the apparatus shall be non-compliant to NFPA 1901 standards at time of contract execution.</p> <p>A rear axle ratio shall be furnished to allow the vehicle to reach an approximate top speed of 73 MPH.</p> <p><b><u>REAR SUSPENSION</u></b></p> <p>The rear springs shall be Standens semi-elliptical, 3.00" x 52.00", ten (10) leaves with a ground rating of 24,000 lbs. Spring hangers shall be castings with provisions for lubrication. The grease fittings shall be 90-degree type and shall be accessible without removing the wheels or cutting any sheet metal. Two (2) top leaves shall wrap the forward spring hanger pin and the top leaf shall wrap the rear spring hanger pin on both the front and rear suspensions.</p> <p>Kaiser spring pins shall be provided, with double "figure-eight" grease grooves and a layer of electroless nickel plating, 1.0 mil thick, around the entire pin. The bushing that holds the spring pin in place shall also have a grease groove.</p> <p><b><u>OIL SEALS</u></b></p> <p>Oil seals shall be provided on the rear axle.</p> <p><b><u>REAR TIRES</u></b></p> <p>Rear tires shall be four (4) Michelin 12R22.50 radials, 16 ply all season XDN2 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> <p><b><u>TIRE BALANCE</u></b></p> <p>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></p> <p>There shall be a VECSAFE LED tire alert pressure management system provided that shall monitor each tire's pressure. A chrome plated brass 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 20 and 120 psi. The sensor shall activate an integral battery operated LED when the pressure of that tire drops eight (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 blinking.</p>		

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<p><b><u>HUB COVERS (front)</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>HUB COVERS (rear)</u></b> A pair of stainless steel high hat hub covers shall be provided on rear axle hubs.</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 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 Ziamatic SQCH-44-H horizontal mounting wheel chock brackets provided for the Ziamatic SAC-44-E folding wheel chocks. The brackets shall be mounted D-1..</p> <p><b><u>ANTI-LOCK BRAKE SYSTEM</u></b> The vehicle shall be equipped with a Wabco 4S4M, anti-lock braking system. The ABS shall provide a four (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 then shall reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.</p> <p><b><u>ANTI-LOCK BRAKE SYSTEM WARRANTY</u></b> The Wabco ABS system shall come with a <b>three (3) year or 300,000 mile parts and labor</b> warranty provided by Meritor Wabco Vehicle Control Systems.</p> <p><b><u>BRAKES</u></b> The service brake system shall be full air type by Meritor™.</p> <p>Front brakes shall be 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™ 16.50" x 7.00" cam operated with automatic slack adjusters.</p> <p><b><u>AIR COMPRESSOR, BRAKE SYSTEM</u></b> The air compressor shall be a Bendix BA-921 with 15.80 cubic feet per minute output at 1,250 RPM.</p>		

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<p><b><u>BRAKE SYSTEM</u></b></p> <p>The brake system shall include:</p> <ul style="list-style-type: none"> <li>- Bendix-Westinghouse dual brake treadle valve with vinyl covered foot surface</li> <li>- A heated automatic moisture ejector on air dryer</li> <li>- Total air system capacity of 4,362 cubic inch</li> <li>- Two (2) air pressure gauges with red warning light and audible alarm, that activates when air pressure falls below 60 psi</li> <li>- MGM spring set parking brake system</li> <li>- Parking brake operated by a Bendix-Westinghouse PP-1 control valve</li> <li>- A parking "brake on" indicator light on instrument panel</li> <li>- Bendix-Westinghouse SR-1 valve, in conjunction with a double check valve system, shall be provided with an automatic spring brake application at 40 psi</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> <ul style="list-style-type: none"> <li>- Bendix AD-9 air dryer, with heater and coalescing filter</li> </ul> <p><b><u>BRAKE LINES</u></b></p> <p>Color-coded nylon brake lines shall be provided. The lines shall be wrapped in a heat protective loom where necessary in the chassis.</p> <p><b><u>AIR INLET/OUTLET</u></b></p> <p>One (1) air inlet/outlet shall be installed with the female coupling located on the driver side pump panel. 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.</p> <p>A mating male fitting shall be provided with the loose equipment.</p> <p>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.</p> <p><b><u>AIR TANK FOR TOOLS</u></b></p> <p>An additional air tank with 1454 cubic inch displacement shall be provided for the use of powering air tools. An air tool outlet with a metering valve, located at the driver's side pump panel, shall be provided.</p>		

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	Yes	No
<p>The air tank shall be primed and painted to meet a minimum 750 hour salt spray test. To reduce the effects of corrosion, the air tank shall be mounted with stainless steel brackets. (no exception)</p> <p>The output flow of the engine air compressor varies with engine RPM. Full compressor output is only achieved at governed engine speed. Engine speed may be limited by generators, pumps and other PTO driven options.</p> <p><b><u>ENGINE</u></b></p> <p>The chassis shall be powered by an electronically controlled engine as described below:</p> <p>Make: Detroit Diesel or Cummins</p> <p>Model: DD13 or Cummins equivalent</p> <p>Power: 450-500 hp at 1800 rpm</p> <p>Torque: 1550 lb-ft at 1200 rpm</p> <p>Governed Speed: 2080 rpm</p> <p>Emissions Level: EPA 2010</p> <p>Fuel: Diesel</p> <p>Cylinders: Six (6)</p> <p>Displacement: 781 cubic inches (12.8L)</p> <p>Starter: Delco 39MT</p> <p>Fuel Filters: Dual cartridge style with check valve, water separator, and water in fuel sensor</p> <p>Coolant Filter: Cartridge style with shut off valves on the supply and return line.</p> <p><b><u>HIGH IDLE</u></b></p> <p>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></p> <p>A Jacobs engine brake is to be installed with the controls located on the instrument panel within easy reach of the driver.</p>		

Specification	Bidder Complies	
	Yes	No
<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 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 Horton fan clutch shall be provided. The fan clutch shall be automatic when the pump transmission is in "Road" position, and fully engaged in "Pump" position.</p> <p><b><u>ENGINE AIR INTAKE</u></b>  The air intake with an ember separator shall be mounted high on the passenger side of the cab, to the front of the crew cab door. The ember separator is designed to prevent road dirt and recirculating hot air from entering the engine.</p> <p>The ember separator shall be easily accessible through a hinged stainless steel grille, with one (1) flush quarter turn latch.</p> <p><b><u>EXHAUST SYSTEM</u></b>  The exhaust system shall include a diesel particulate filter (DPF) and a selective catalytic reduction (SCR) device to meet current EPA standards. The exhaust system shall be stainless steel from the turbo to the inlet of the SCR device and shall be 5.00" in diameter. An insulation wrap shall be provided on all exhaust pipe between the turbo and SCR to minimize the transfer of heat to the cab. The exhaust shall terminate horizontally ahead of the passenger 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>EXHAUST MODIFICATION</u></b>  The exhaust pipe shall be brought straight out from under the body. The exhaust pipe shall extend a maximum of 2.00" past the body side. The diameter of the pipe shall be 7.00".</p> <p><b>Exhaust Removal System</b>  <b>Vehicle will be equipped with an Onboard (vehicle mounted) diesel infiltration system used to remove toxic gaseous matter and improve emission standards for the environment. The unit will be expected to operate automatically as the vehicle starts up and continue while the vehicle in running. The exhaust removal system will not alter or void any portion of the manufactures engine or apparatus warranty.</b>  Ward Diesel onboard System</p>		

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	Yes	No
<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 cooling performance, the radiator core shall be made of copper fins having a serpentine design, soldered to brass tubes. The tubes shall be welded to brass headers using the patented Beta-Weld process for increased strength, longer road life and solder-bloom corrosion protection. The radiator core shall have a minimum frontal area of 1396 square inches. Steel supply and return tanks shall be bolted to the core headers and steel side channels to complete the radiator assembly. The radiator shall be compatible with commercial antifreeze solutions.</p> <p>The radiator shall be mounted in such a manner as to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven ground. The radiator assembly shall be isolated from the chassis frame rails with rubber isolators.</p> <p>The radiator shall include an integral deaeration tank, with a remote-mounted overflow 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>A heavy-duty fan shall draw in fresh, cool air through the radiator. 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>Silicone hoses shall be used for all engine/heater coolant lines installed by the chassis manufacturer.</p> <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 75-gallon fuel tank shall be provided and mounted at rear of 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 .75" drain plug shall be provided in a low point of the tank for drainage.</p>		



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	Yes	No
<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 .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 OR SYSTEM EQUIVALENT</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. The tank shall be constructed of 16-gauge type 304- L stainless steel.</p> <p>A .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, 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>FUEL COOLER</u></b></p> <p>An air to fuel cooler shall be installed in the engine fuel return line.</p> <p><b><u>TRANSMISSION</u></b></p> <p>An Allison Gen IV, model EVS 4000P, electronic, torque converting, automatic transmission shall be provided.</p> <p>Two (2) PTO openings shall be located on left side and top of converter housing (positions 8 o'clock and 1 o'clock).</p> <p>A transmission temperature gauge with red light and buzzer shall be installed on the cab instrument panel.</p> <p><b><u>TRANSMISSION SHIFTER</u></b></p> <p>A six (6)-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.</p> <p>The transmission ratio shall be 1st - 3.51 to 1.00, 2nd - 1.91 to 1.00, 3rd - 1.43 to 1.00, 4th - 1.00 to 1.00, 5th - 0.75 to 1.00, 6th - 0.64 to 1.00, R - 4.80 to 1.00.</p>		

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	Yes	No
<p><b><u>TRANSMISSION COOLER</u></b>  A transmission oil cooler shall be provided that is integral to the radiator and located at the bottom of the radiator. The cooler shall use engine coolant to control the transmission oil temperature.</p> <p><b><u>DRIVELINE</u></b>  Drivelines shall be a heavy-duty metal tube and be equipped with Spicer 1810 universal joints.</p> <p>The shafts shall be dynamically balanced before installation.</p> <p>A splined slip joint shall be provided in each driveshaft, slip joint shall be coated with Glidecoat or equivalent.</p> <p><b><u>STEERING</u></b>  A Ross TAS-85 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 a TRW model EV hydraulic pump with integral pressure and flow control. All power steering lines shall have wire braded lines with crimped fittings.</p> <p>A tilt and telescopic steering column shall be provided to improve fit for a broader range of driver configurations.</p> <p><b><u>STEERING ASSIST CYLINDER ON FRONT AXLE</u></b>  The front axle shall be equipped with a Ross power assist cylinder to aid in the steering of the apparatus.</p> <p><b><u>STEERING WHEEL</u></b>  The steering wheel shall be 18.00" in diameter, have tilting and telescoping capabilities, and a two (2)-spoke design.</p> <p><b><u>LOGO AND CUSTOMER DESIGNATION ON HORN BUTTON</u></b>  The steering wheel shall have an emblem containing the fire apparatus manufacturer's logo and customer name. The emblem shall have three (3) rows of text for the customer's department name. There shall be a maximum of eight (8) characters in the first row, 11 characters in the second row and 11 characters in the third row.</p> <p>The first row of text shall be: MACON</p> <p>The second row of text shall be: BIBB</p> <p>The third row of text shall be: FIRE DEPT</p> <p><b><u>ADDITION WHEELBASE</u></b>  The cab gap shall be increased one (1) additional inch to provide extra clearance for cab mounted equipment.</p>		

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	Yes	No
<p><b><u>BUMPER</u></b>  A one (1)-piece, ten (10) gauge, 304-2B type polished stainless steel bumper, a minimum of 10.00" high, shall be attached to a bolted modular extension frame constructed of 50,000 psi tensile steel C channel mounted directly behind it to provide adequate support strength.</p> <p>The bumper shall be extended 19.00" from front face of cab.( Hose load appropriate)</p> <p>Documentation shall be provided, upon request to show that the options selected have been engineered for fit-up and approval for this modular bumper extension. A chart shall be provided to indicate the option locations and shall include, but not be limited to the following options: air horns, mechanical sirens, speakers, hose trays (with hose capacities), winches, lights, discharge, and suction connections.</p> <p><b><u>LIFT AND TOW MOUNTS</u></b>  Mounted to the frame extension shall be lift and tow mounts. The lift and tow mounts shall be designed and positioned to adapt to certain tow truck lift systems.</p> <p>The lift and tow mounts with eyes shall be painted the same color as the frame.</p> <p><b><u>TOW HOOKS</u></b>  No tow hooks are to be provided. This truck shall be equipped with a lift and tow package with integral tow eyes.</p> <p><b><u>HOSE TRAY</u></b>  A hose tray, constructed of aluminum, shall be placed in the center of the bumper extension.</p> <p>The tray shall have a capacity of 150' of 1.75" double jacket cotton-polyester hose.</p> <p>Black rubber grating shall be provided at the bottom of the tray. Drain holes are also provided.</p> <p><b><u>GRAVEL PAN</u></b>  A gravel pan, constructed of bright aluminum treadplate, shall be furnished between the bumper and cab face.</p> <p>The gravel pan shall be properly supported from the underside to prevent flexing and vibration of the aluminum treadplate.</p> <p><b><u>COVER, HOSE TRAY</u></b>  A bright aluminum treadplate cover shall be provided over the one (1) hose tray.</p>		

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	Yes	No
<p>The cover shall be "notched" allowing the hose to be preconnected to hose connection.</p> <p>The cover shall be attached with a stainless steel hinge.</p> <p>A D-ring latch shall secure the cover in the closed position and a pneumatic stay arm shall hold the cover in the open position.</p> <p>The area of the hose tray to be covered shall be the Cover will be over the center tray with the gas spring on the side opposite the discharge..</p> <p><b><u>TRIM, HOSE TRAY</u></b></p> <p>There shall be stainless steel L-shaped trim pieces installed over the front and both sides of the bumper hose tray(s) to protect the hose from the top edges of the box.</p> <p>A total quantity of one (1) tray(s) located Center. shall be provided with the trim.</p> <p><b><u>CAB</u></b></p> <p>The cab shall be designed specifically for the fire service and shall be manufactured by the chassis builder.</p> <p>Construction of the cab shall consist of 5052-H32 .125" aluminum welded to extruded aluminum framing.</p> <p>The cab shall be built by the apparatus manufacturer in a facility located on the manufacturer's premises. (no exception).</p> <p>The cab shall be 96.00" wide with an interior width of 87.50".</p> <p>The forward cab section shall have an overall height (from the cab roof to the ground) of approximately 103.00". The crew cab section shall have a 16.00" raised roof, with an overall cab height of approximately 119.00". The overall height listed shall be calculated based on a truck configuration with the lowest suspension weight ratings, 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 70.00" in the center and 75.25" in the outboard positions.</p> <p>The crew cab floor shall measure 40.12" from rear wall to the back side of engine tunnel.</p> <p>The engine tunnel, at the rearward highest point (knee level), shall measure 47.75" to the back wall.</p> <p>The crew cab shall be of the totally enclosed design with access doors constructed in the same manner as the driver and passenger doors.</p>		

Specification	Bidder Complies	
	Yes	No
<p>The cab shall be a full tilt cab style. The engine shall be easily accessible and capable of being removed with the cab tilted. The cab shall be capable of tilting 45 degrees and 90 degrees with crane assist.</p> <p>The cab shall have a three (3)-point rubber mounting and shall be tilted by a hydraulic pump connected to two (2) cab lift cylinders. The cab shall then be locked down by a two (2)-point automatic locking mechanism that actuates after the cab has been lowered.</p> <p><b><u>INTERIOR CAB INSULATION</u></b> The cab shall include 1.50" insulation in the ceiling and side walls, and 2.00" insulation in the rear wall to maximize acoustic absorption and thermal insulation.</p> <p><b><u>ENGINE TUNNEL</u></b> Engine hood side walls shall be constructed of .50" aluminum. The top shall be constructed of .19" aluminum and shall be tapered at the top to allow for more driver and passenger elbow room.</p> <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 series 1900 pamphlet.</p> <p><b><u>FENDER LINERS</u></b> Full circular inner fender liners in the wheel wells shall be provided.</p> <p><b><u>REAR WALL COVERING</u></b> Bright aluminum treadplate shall be overlaid on the outside rear wall of the crew cab except for areas that are not typically visible when the cab is lowered.</p> <p><b><u>WINDSHIELD</u></b> A curved safety glass windshield shall be provided with over 2,754 square inches of clear viewing area. The cab windshield shall have bright trim inserts in the rubber molding holding the glass in place. Economical windshield replacement glass shall be readily available from local auto glass suppliers.</p> <p>All cab glass shall be tinted.</p> <p><b><u>SUNVISORS</u></b> Two (2) smoked Lexan sunvisors, 8.75" x 31.00" long, shall be provided. The sunvisors shall be located above the windshield with one (1) mounted on each side of the cab.</p> <p><b><u>WINDSHIELD WIPERS</u></b> Two (2) 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>		

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	Yes	No
<p>A glove box with a drop-down door shall be installed in the front dash panel in front of the officer's position.</p> <p><b><u>CAB LIFT</u></b>  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>The hydraulic pump shall have a manual override for backup in the event of electrical failure.</p> <p>Lift controls shall be on a panel located on the pump panel or front area of the body in a convenient location.</p> <p>Cab shall be locked down by a two (2)-point automatic spring-loaded hook mechanism that actuates after the cab has been lowered.</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 driver 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>INTERLOCK, CAB LIFT TO PARKING BRAKE</u></b>  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>DOOR JAMB SCUFFPLATES</u></b>  All cab door jambs shall be furnished with a polished stainless steel scuffplate, mounted on the striker side of the jamb.</p> <p><b><u>RUBRAIL, CREW CAB</u></b>  Aluminum extruded rubrail shall be installed along the bottom of the crew cab from the crew cab step to the back of the cab. The rubrail shall match the material used on the body.</p> <p><b><u>MOLDING (On Sides of Cab)</u></b>  Chrome molding shall be provided on both sides of cab.</p> <p><b><u>MIRRORS</u></b>  Ramco, model #6001CCHR, polished aluminum 9.25" x 13.50" mirrors, with a convex section, shall be mounted on each side of the front cab corner.</p> <p>The flat glass in each mirror shall be heated and adjustable with remote controls that are convenient to the driver.</p>		

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	Yes	No
<p>The convex section in each mirror shall be adjusted manually.</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 74.25" 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 doors shall measure a minimum of 34.88" wide x 88.25" high.</p> <p>The forward cab and crew cab doors shall be constructed of extruded aluminum with a nominal material thickness of .125". The exterior door skins shall be constructed from .090" aluminum.</p> <p>All cab and crew cab entry doors shall contain a conventional roll down window.</p> <p>A flush mounted, chrome plated paddle type door handle shall be provided on the exterior of each cab door. Each door shall also be provided with an interior flush paddle handle.</p> <p>The cab doors shall be provided with both interior (rotary knob) and exterior (keyed) locks as required by FMVSS 206. 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 .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>Full height polished stainless steel scuffplates shall be installed on the inside of all cab doors. Cab door panels shall be removable without disconnecting door and window mechanisms.</p> <p>A chrome handrail shall be provided on the inside each front cab door, for ease of entry.</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>CAB STEPS</u></b></p> <p>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 24.75" wide, and the crew cab steps shall be 21.25" wide with an 8.00" minimum depth. The inside cab steps shall not exceed 18.00" in height and be limited to two (2) steps. Three (3) step entrance designs shall not be acceptable</p>		

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	Yes	No
<p>due to safety concerns. A slip-resistant handrail shall be provided adjacent to each cab door opening to assist during cab ingress and egress.</p> <p><b><u>STEP LIGHTS</u></b>  For reduced overall maintenance costs compared to incandescent lighting, there shall be four (4) Ritar, Model M27HW2, LED, step lights provided. The lights shall be installed at each cab and crew cab door, one (1) per step, in the driver side front doorstep, driver side crew cab doorstep, passenger side front doorstep and passenger side crew cab doorstep.</p> <p>The lights shall be activated when the adjacent door is opened.</p> <p><b><u>FENDER CROWNS</u></b>  Stainless steel fender crowns shall be installed at the cab wheel openings. The fender crowns shall have a radius outside corner that allows the fender crown to extend beyond the side wall of the front tires and also allow the crew cab doors to open fully.</p> <p><b><u>GRAB HANDLES (Interior Crew Cab Doors)</u></b>  A black rubber covered grab handle shall be mounted on the door post of the driver's and passenger's side crew cab door to assist in entering the cab. The grab handle shall be securely mounted to the hinge side of the door frame.</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 17.50" wide x 21.00" high.</p> <p><b><u>WINDOW PROTECTOR BARS</u></b>  Two (2) removable bars shall be provided on the inside of each crew cab door to protect the windows from damage.</p> <p><b><u>CAB INTERIOR</u></b>  The cab dash fascias shall be a flat faced design to provide easy of maintenance and shall be constructed out of painted aluminum.</p> <p>The engine tunnel shall be padded and covered with 46 ounce leather grain vinyl resistant to oil, grease and mildew.</p> <p>The 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 provide easy access for servicing electrical wiring or for other maintenance needs without removing the entire unit.</p>		



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	Yes	No
<p><b><u>CAB INTERIOR UPHOLSTERY</u></b> The cab interior upholstery shall be dark silver gray.</p> <p><b><u>INTERIOR PAINT (Cab)</u></b> The cab interior metal surfaces shall be painted gray, vinyl texture 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.</p> <p>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 .25" thick closed cell foam (no water absorption) which offers a sound dampening material for reducing sound levels.</p> <p><b><u>CAB DEFROSTER</u></b> There shall be a 41,000 BTU/hr defroster in the cab located under the engine tunnel.</p> <p>The defroster ventilation shall be built into the design of the cab dash instrument panel and shall be easily removable for maintenance.</p> <p>The defroster shall have a three (3)-speed blower and temperature controls accessible to the driver and officer.</p> <p>The defroster ducts shall be designed to provide maximum defrosting capabilities for the front cab windows.</p> <p><b><u>CAB/CREW CAB HEATER</u></b> Two (2) auxiliary heaters with 32,000 BTU/hr each shall be provided in the cab. The heaters shall have a three (3)-speed blower and temperature controls accessible to the driver and officer. There shall also be louvers located below the rear facing seat riser and below the driver and officer positions for airflow.</p> <p>The heaters shall be mounted, one (1) within each rear facing seat riser.</p> <p><b><u>AIR CONDITIONING</u></b> A high-performance, customized air conditioning system shall be furnished inside the cab and crew cab. A 19.10 cubic inch compressor shall be installed on the engine.</p> <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 four (4) hours.</p>		

Specification	Bidder Complies	
	Yes	No
<p>A roof-mounted condenser that meets and exceeds the performance specification shall be installed on the cab roof. Mounting the condenser below the cab or body would reduce the performance of the system and shall not be acceptable.</p> <p>An evaporator unit that meets and exceeds the performance specification shall be installed in the cab, located in the center of the cab ceiling over the engine tunnel. The evaporator shall include two (2) high performance cores and plenums with multiple outlets, one (1) plenum directed to the front and one (1) plenum directed to the rear of the cab.</p> <p>The evaporator unit shall be provided with adjustable air outlets strategically located to direct air flow to the driver, officer and crew cab area.</p> <p>All hose used shall be class 1 type to reduce moisture ingress into the air conditioning system.</p> <p>The air conditioner refrigerant shall be R-134A and shall be installed by a certified technician.</p> <p>The air conditioner shall be controlled by a single electronic control panel. For ease of operation, the control panel shall include variable adjustment for temperature and fan control and be conveniently located on the dash in clear view of the driver. The control panel shall include robust knobs for both fan speed and temperature adjustment.</p> <p><b><u>GRAB HANDLE</u></b></p> <p>A black rubber covered grab handle shall be mounted on the lower portion of the driver's side cab entrance to assist in entering the cab. The grab handle shall be securely mounted to the post area between the door and steering wheel column.</p> <p>A long rubber grab handle shall be mounted on the dash board in front of the officer.</p> <p><b><u>ENGINE COMPARTMENT LIGHTS</u></b></p> <p>Two (2) engine compartment lights shall be installed under the engine hood, with an integral switch. The lights shall have a .125" diameter hole in its lens to prevent moisture retention.</p> <p><b><u>ACCESS TO ENGINE DIPSTICKS</u></b></p> <p>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 door shall be 17.75" wide x 12.75" high and be flush with the wall of the engine tunnel.</p> <p>The engine oil dipstick shall allow for checking only. The transmission dipstick shall allow for both checking and filling. An additional tube shall be provided for filling the engine oil.</p>		

Specification	Bidder Complies	
	Yes	No
<p>The door shall have a rubber seal for thermal and acoustic insulation. One (1) flush latch shall be provided on the access door.</p> <p><b><u>MAP BOX</u></b>  A map box with three (3) bins, open at top, shall be installed On the engine doghouse closest to the officer's seating position - forward edge of box at or near officer's left shoulder rearward.. The map box shall be divided into three (3) bins, each being 12.00" wide x 4.00" deep x 8.00" high. The map box shall be constructed of .125" aluminum and shall be painted to match the cab interior.</p> <p><b><u>MAP POCKET</u></b>  Installed on each front door shall be a map pocket. The pocket shall be constructed of a heavy grade vinyl and shall include a snap down cover flap.</p> <p><b><u>RECORDS TRAY</u></b>  Installed across from the officer's seat shall be a records tray. The tray shall be approximately 18.00" across x 10.00" high with a 1.00" retainer across the bottom.</p> <p>The tray shall be mounted on a smooth aluminum plate 18.00" wide x 10.00" deep. The plate shall be mounted to the top surface of the dash, directly in front of the officer seat. This mounting plate shall extend out approximately 2.00" past the edge of the dash to allow enough room to mount the records tray.</p> <p>The tray and mounting plate shall be constructed of .090" 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 six (6).</p> <p><b><u>DRIVER SEAT</u></b>  A seat shall be provided in the cab for the driver. The seat design shall be a cam action type, with air suspension. For increased convenience, the seat shall include a manual control to adjust the horizontal position (6.00" travel). The manual horizontal control shall be a towel-bar style located below the forward part of the seat cushion. To provide flexibility for multiple driver configurations, the seat shall have an adjustable reclining back. The seat back shall be a high back style with side bolster pads for maximum support. For optimal comfort, the seat shall be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control).</p> <p>The seat shall be furnished with a three (3)-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>OFFICER SEAT</u></b></p> <p>A seat shall be provided in the cab for the passenger. The seat shall be a fixed type, with no suspension. For optimal comfort, the seat shall be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control). 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>The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.</p> <p>The seat shall be furnished with a three (3)-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p><b><u>RADIO COMPARTMENT</u></b></p> <p>A radio compartment shall be provided under the officer's seat.</p> <p>The inside compartment dimensions shall be 14.50" deep x 14.50" across x 9.00" high.</p> <p>A drop-down door with a chrome plated lift and turn latch shall be provided for access.</p> <p>The compartment shall be constructed of smooth aluminum and painted to match the cab interior.</p> <p><b><u>WIRELESS RADIO HEADSET</u></b></p> <p>Intercom mixer system 900, radio cable, jump seat stations intercom only positions, pump panel station, 1 wireless headset, headset hanger hook, 5ft power cable for wireless headset and base, radio transmit only headset, 2 intercom only headsets.</p> <p><b><u>REAR FACING DRIVER SIDE OUTBOARD SEAT</u></b></p> <p>There shall be one (1) rear facing seat provided at the driver side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 15.00" deep foam cushions designed with EVC. (elastomeric vibration control). 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>		

Specification	Bidder Complies	
	Yes	No
<p>The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.</p> <p>The seat shall be furnished with a three (3)-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p><b><u>REAR FACING PASSENGER SIDE OUTBOARD SEAT</u></b></p> <p>There shall be one (1) rear facing seat provided at the passenger side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 15.00" deep foam cushions designed with EVC (elastomeric vibration control). 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>The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.</p> <p>The seat shall be furnished with a three (3)-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p><b><u>FORWARD FACING DRIVER SIDE OUTBOARD SEAT</u></b></p> <p>There shall be one (1) forward facing flip-up seat provided at the driver side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 15.00" deep foam cushion designed with EVC (elastomeric vibration control). 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>The seat back shall be a SCBA style with 90 degree back. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.</p> <p>The seat shall be furnished with a three (3)-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the</p>		

Specification	Bidder Complies	
	Yes	No
<p>seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p><b><u>EMS COMPARTMENT</u></b>  A forward facing EMS compartment shall be provided in the crew cab at the center position.</p> <p>The compartment shall be 38.00" wide x 56.00" high x 22.63" deep with one (1) Gortite roll up door, non-locking with anodized finish. The clear door opening of the compartment shall be 46.00" high x 27.50" wide.</p> <p>The compartment shall be constructed of smooth aluminum, and painted to match the cab interior.</p> <p><b><u>COMPARTMENT LIGHT</u></b>  There shall betwo (2) white Amdor LED strip lights installed, one (1) each side of the compartment opening. The lights shall be controlled by an automatic door switch.</p> <p>This storage compartment shall be compliant per NFPA standard for automotive fire apparatus.</p> <p><b><u>FORWARD FACING PASSENGER SIDE OUTBOARD SEAT</u></b>  There shall be one (1) forward facing flip-up seat provided at the passenger side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 15.00" deep foam cushion designed with EVC (elastomeric vibration control). 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>The seat back shall be an SCBA style with 90 degree back. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.</p> <p>The seat shall be furnished with a three (3)-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p><b><u>SHELVING</u></b>  There shall be three (3) shelves provided in the EMS compartment. Each shelf shall be constructed of .090" aluminum with a 1.25" up-turned lip. Shelving shall be infinitely adjustable by means of a threaded tightener sliding in a track.</p>		

Specification	Bidder Complies	
	Yes	No
<p>The location shall be Evenly spaced in EMS compartment - crew area..</p> <p><b><u>SEAT UPHOLSTERY</u></b> All seat upholstery shall be gray Turnout Tuff material.</p> <p><b><u>AIR BOTTLE HOLDERS</u></b> All SCBA type seats in the cab shall have a Ziamatic Model ULLH SCBA holder bracket. This bracket shall be compliant with the current NFPA 1901 standards and shall include a backplate, two (2) seats, a footplate and the Model LLS ("Load &amp; Lock") strap to hold the bottle in the bracket. The bracket seats shall be a "one size fits all" style seat and shall accommodate SCBA cylinders from the high pressure 30-minute to the high pressure 60-minute. Seats shall be adjustable up and down by unbolting, relocating, and rebolting in the desired position. Must comply with Scott Air Pak Systems</p> <p><b><u>SHOULDER HARNESS HEIGHT ADJUSTMENT</u></b> All seating positions furnished with three (3)-point shoulder type seat belts shall include a height adjustment. This adjustment shall optimize the belts effectiveness and comfort for the seated firefighter.</p> <p><b><u>SEAT BELTS</u></b> All seating positions in the cab and crew cab shall have red seat belts.</p> <p><b><u>SEAT BELT MONITORING SYSTEM</u></b> A seat belt monitoring system (SBMS) shall be provided. The SBMS shall be capable of monitoring up to ten (10) seat positions indicating the status of each seat position with a green or red LED indicator as follows:</p> <p>Driver Seat:</p> <p>Seat Occupied    Buckled        Green</p> <p>No Occupant        Unbuckled    Not Illuminated</p> <p>The driver seat shall not include an occupant sensor. The display indication for the driver seat shall illuminate red any time the parking brake is released and the driver seat belt is not buckled.</p> <p>All Other Seats:</p> <p>Seat Occupied    Buckled        Green</p> <p>Seat Occupied    Unbuckled    Red</p> <p>No Occupant        Buckled        Red</p> <p>No Occupant        Unbuckled    Not Illuminated</p> <p>Alarm:</p>		

Specification	Bidder Complies	
	Yes	No
<p>The SBMS shall include an audible alarm that shall be activated when a red illumination condition exists and the parking brake is released, or a red illumination condition exists and the transmission is not in park.</p> <p><b><u>HELMET STORAGE</u></b>  NFPA 1901, 2009 edition, section 14.1.8.4.1 requires a location for helmet storage be provided.</p> <p>If 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 INTERIOR LIGHTING</u></b>  Auxiliary lights shall be provided in the cab and consisting of:</p> <ul style="list-style-type: none"> <li>- Two (2) Weldon, Model 8081, red/clear dome light located, one (1) on the officer side and one (1) on the driver side, controlled by the following: <ul style="list-style-type: none"> <li>Clear forward light controlled by the door switch and the lens switch.</li> <li>Red rearward light controlled by the lens switch.</li> </ul> </li> <li>- Two (2) Adjustable Map Lights: With switches mounted on the cab ceiling.</li> </ul> <p><b><u>CREW CAB INTERIOR LIGHTING</u></b>  There shall be two (2) Weldon, Model 8081-0000-13, incandescent dome lights with grey bezels installed in the crew cab located one (1) each side, controlled by the following:</p> <ul style="list-style-type: none"> <li>• The forward, clear light shall be controlled by the door switch and the lens switch.</li> <li>• The rear, red light shall be controlled by the lens switch only.</li> </ul> <p>A courtesy light at each door opening, controlled by automatic door switches.</p> <p><b><u>PORTABLE HAND LIGHTS, PROVIDED BY DEALER</u></b>  NFPA 1901, 2009 edition, section 5.8.3 requires two portable hand lights mounted in brackets fastened to the apparatus.</p> <p>The hand lights are not on the apparatus as manufactured. The dealer shall provide and mount these hand lights.</p> <p><b><u>HAND HELD SPOTLIGHT</u></b>  A Collins Pulsar 750 hand held spot/floodlight shall be installed Light to be installed on the right side of the center dash panel (light to plug into powerpoint receptacle option # 548006).. The light shall be furnished with a 9-foot coil cord and a momentary switch.</p>		



Specification	Bidder Complies	
	Yes	No
<p><b><u>CAB INSTRUMENTATION</u></b></p> <p>The cab instrument panel shall 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></p> <p>The gauge panel shall include the following ten (10) black faced gauges with black bezels to monitor vehicle performance:</p> <p>Voltmeter Gauge (volts):</p> <p>Low volts (11.8 VDC)</p> <p>Amber telltale light on indicator light display with steady tone alarm</p> <p>High volts (15.5 VDC)</p> <p>Amber telltale light on indicator light display with steady tone alarm</p> <p>Engine Tachometer (RPM)</p> <p>Speedometer MPH</p> <p>Fuel Level Gauge (Empty - Full in fractions):</p> <p>Low fuel (1/8 full)</p> <p>Amber telltale light on indicator light display with steady tone alarm</p> <p>Engine Oil Pressure Gauge (PSI):</p> <p>Low oil pressure to activate engine warning lights and alarms</p> <p>Red telltale light on indicator light display with steady tone alarm</p> <p>Front Air Pressure Gauges (PSI):</p> <p>Low air pressure to activate warning lights and alarm</p> <p>Red telltale light on indicator light display with steady tone alarm</p> <p>Rear Air Pressure Gauges (PSI):</p> <p>Low air pressure to activate warning lights and alarm</p> <p>Red telltale light on indicator light display with steady tone alarm</p> <p>Transmission Oil Temperature Gauge (Fahrenheit):</p> <p>High transmission oil temperature activates warning lights and alarm</p>		

Specification	Bidder Complies	
	Yes	No
<p>Amber telltale light on indicator light display with steady tone alarm</p> <p>Engine Coolant Temperature Gauge (Fahrenheit):</p> <p>High engine temperature activates an engine warning light and alarms</p> <p>Red telltale light on indicator light display with steady tone alarm</p> <p>Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions):</p> <p>Low fluid (1/8 full)</p> <p>Amber telltale light on indicator light display</p> <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> <p>Low coolant</p> <p>Trac cntl (traction control) (where applicable)</p> <p>Check engine</p> <p>Check trans (check transmission)</p> <p>Air rest (air restriction)</p> <p>Driver door open</p> <p>Passenger door open</p> <p>Tower (tower raised) (where applicable)</p> <p>DPF (engine diesel particulate filter regeneration)</p> <p>HET (engine high exhaust temperature) (where applicable)</p> <p>ABS (antilock brake system)</p> <p>MIL (engine emissions system malfunction indicator lamp) (where applicable)</p> <p>Regen inhibit (engine emissions regeneration inhibit) (where applicable)</p> <p>Trans temp (transmission temperature)</p> <p>SRS (supplemental restraint system) fault (where applicable)</p> <p>DEF (low diesel exhaust fluid level)</p> <p>The following red telltale lamps shall be present:</p> <p>Ladder rack down</p>		

Specification	Bidder Complies	
	Yes	No
<p>Parking brake</p> <p>Stop engine</p> <p>The following green telltale lamps shall be present:</p> <p>Left turn</p> <p>Right turn</p> <p>Battery on</p> <p>Ignition</p> <p>Aux brake (auxiliary brake engaged) (where applicable)</p> <p>The following blue telltale lamps shall be present:</p> <p>High beam</p> <p><b><u>ALARMS</u></b></p> <p>Audible steady tone warning alarm: A steady audible tone alarm shall be provided whenever a warning message is present.</p> <p><b><u>INDICATOR LAMP AND ALARM PROVE-OUT</u></b></p> <p>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 when the ignition switch is held in the up position for three (3) to five (5) seconds to ensure proper performance.</p> <p><b><u>CONTROL SWITCHES</u></b></p> <p>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 backlighting intensity control switch: A variable voltage control switch shall be provided. The switch moved in the up direction increases the panel backlighting intensity to a maximum and the switch moved in a down direction decreases the panel backlighting intensity to a minimum level.</p> <p>Ignition switch: A three (3)-position maintained/momentary rocker switch shall be provided. The first switch position shall deactivate vehicle ignition. The second switch position shall activate vehicle ignition. The third momentary position shall perform prove-out on the telltale indicators and alarms when the ignition switch is held in the up position for three (3) to five (5) seconds to ensure proper performance. A green indicator lamp is activated with vehicle ignition.</p>		

Specification	Bidder Complies	
	Yes	No
<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 incorporated into 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><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 three (3) switch panels in the overhead console on the driver's side, up to five (5) switch panels in the engine tunnel console, and up to three (3) switch panels in the overhead console on the officer's side. All switches have backlit labels for low light applications.</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>Diesel particulate filter regeneration switch (where applicable).</p> <p>Diesel particulate filter regeneration inhibit switch (where applicable).</p> <p><b><u>DIAGNOSTIC PANEL</u></b></p> <p>A diagnostic panel shall be accessible while standing on the ground and 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 engine and ABS systems to provide blink codes should a problem exist. The diagnostic panel shall include the following:</p> <p>Engine diagnostic port</p>		

Specification	Bidder Complies	
	Yes	No
<p>Transmission diagnostic port</p> <p>ABS diagnostic port</p> <p>SRS diagnostic port (where applicable)</p> <p>Engine diagnostic switch (blink codes flashed on check engine telltale indicator)</p> <p>ABS diagnostic switch (blink codes flashed on ABS telltale indicator)</p> <p><b><u>AIR RESTRICTION INDICATOR</u></b></p> <p>A high air restriction warning indicator light (electronic) shall be provided.</p> <p>- Officer Speedometer, A Class I digital display speedometer shall be provided on the officer side overhead position.</p> <p><b><u>"DO NOT MOVE APPARATUS" INDICATOR AND ALARM</u></b></p> <p>Two (2) flashing red indicator lights shall be provided, one (1) in the cab and one (1) 4.00" recessed in the crew cab headliner. The lights shall illuminate automatically per current NFPA requirements. The lights shall be labeled "Do Not Move Apparatus If Light Is On."</p> <p>An audible alarm shall be provided with the open door indicator light.</p> <p>The alarm shall be controlled by the parking brake, so that it shall deactivate when the parking brake is set.</p> <p><b><u>OPEN DOOR INDICATOR LIGHT</u></b></p> <p>Two (2) red indicator lights shall be provided and located in clear view of the driver, warning of an open passenger or equipment compartment door.</p> <p>One (1) light shall indicate status of doors on the driver's side of the vehicle and the other light shall indicate the status of the passenger side and rear compartment doors.</p> <p><b><u>SWITCH PANELS</u></b></p> <p>The built-in emergency light switch panel shall have a master switch plus individual switches for selective control. The switch panel shall be located in the "overhead" position above the windshield on the driver's side to allow for easy access. Switches shall be rocker type with an indicator light, of which is an integral part of the switch.</p> <p><b><u>WIPER CONTROL</u></b></p> <p>Wiper control shall consist of a two (2)-speed individual windshield wiper control with intermittent feature and windshield washer controls. The control shall also have a "return to park" provision, which allows the wipers to return to the stored position when the wipers are not in use.</p>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>SPARE CIRCUIT</u></b>  There shall be one (1) pair of wires, including a positive and a negative, installed on the apparatus.</p> <p>The above wires shall have the following features:</p> <ul style="list-style-type: none"> <li>The positive wire shall be connected directly to the battery switched power.</li> <li>The negative wire shall be connected to ground.</li> <li>Wires shall be protected to 15 amps at 12 volts DC.</li> <li>Power and ground shall terminate On officer's side of dash for handlight spotlight connection..</li> <li>Termination shall be with 15 amp, power point plug with rubber cover.</li> </ul> <p>Wires shall be sized to 125% of the protection.</p> <p>This circuit(s) may be load managed when the parking brake is set.</p> <p><b><u>SPARE CIRCUIT</u></b>  There shall be two (2) pair of wires, including a positive and a negative, installed on the apparatus.</p> <p>The above wires shall have the following features:</p> <ul style="list-style-type: none"> <li>The positive wire shall be connected directly to the battery switched power.</li> <li>The negative wire shall be connected to ground.</li> <li>Wires shall be protected to 15 amps at 12 volts DC.</li> <li>Power and ground shall terminate Switch panel # 9..</li> <li>Termination shall be with 15 amp, power point plug with rubber cover.</li> </ul> <p>Wires shall be sized to 125% of the protection.</p> <p>This circuit(s) may be load managed when the parking brake is set.</p> <p><b><u>SPARE CIRCUIT</u></b>  There shall be one (1) pair of wires, including a positive and a negative, installed on the apparatus.</p> <p>The above wires shall have the following features:</p> <ul style="list-style-type: none"> <li>The positive wire shall be connected directly to the battery power.</li> <li>The negative wire shall be connected to ground.</li> <li>Wires shall be protected to 30 amps at 12 volts DC.</li> </ul>		

Specification	Bidder Complies	
	Yes	No
<p>Power and ground shall terminate EMS compartment back wall right hand side as high as possible..</p> <p>Termination shall be with six (6) position terminal strip.</p> <p>Wires shall be sized to 125% of the protection.</p> <p>This circuit(s) may be load managed when the parking brake is set.</p> <p><b><u>SPARE CIRCUIT</u></b></p> <p>There shall be one (1) pair of wires, including a positive and a negative, installed on the apparatus.</p> <p>The above wires shall have the following features:</p> <ul style="list-style-type: none"> <li>The positive wire shall be connected directly to the battery power.</li> <li>The negative wire shall be connected to ground.</li> <li>Wires shall be protected to 10 amps at 12 volts DC.</li> <li>Power and ground shall terminate EMS compartment.</li> <li>Termination shall be with 3/8" studs and plastic covers.</li> </ul> <p>Wires shall be sized to 125% of the protection.</p> <p>This circuit(s) may be load managed when the parking brake is set.</p> <p><b><u>DIGITAL CLOCK</u></b></p> <p>A Dakota Digital, Model ODY-16-1-B-T, digital clock shall be provided in the officer's side overhead switch panel. The clock shall be a 12 hour device that has an AM/PM indicator that is lit when in the AM hour mode. The display shall be teal in color and shall automatically dim when the parking lights are activated. The clock shall be provided with a black bezel.</p> <p><b><u>VEHICLE DATA RECORDER</u></b></p> <p>A vehicle data recorder (VDR) shall be provided. The VDR shall be capable of reading and storing vehicle information. The VDR shall be capable of operating in a voltage range from 8VDC to 16VDC. The VDR shall not interfere with, suspend, or delay any communications that may exist on the CAN data link during the power up, initialization, runtime, or power down sequence. The VDR shall continue operation upon termination of power or at voltages below 8VDC for a minimum of 10ms.</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 CD provided with the apparatus shall include the programming to download the information from the VDR. A USB cable can be used to connect the VDR to a laptop to retrieve required information.</p>		

Specification	Bidder Complies	
	Yes	No
<p>The vehicle data recorder shall be capable of recording the following data via hardwired and/or CAN inputs:</p> <p>Vehicle Speed - MPH</p> <p>Acceleration - MPH/sec</p> <p>Deceleration - MPH/sec</p> <p>Engine Speed - RPM</p> <p>Engine Throttle Position - % of Full Throttle</p> <p>ABS Event - On/Off</p> <p>Seat Occupied Status - Yes/No by Position (7-12 Seating Capacity)</p> <p>Seat Belt Buckled Status - Yes/No by Position (7-12 Seating Capacity)</p> <p>Master Optical Warning Device Switch - On/Off</p> <p>Time - 24 Hour Time</p> <p>Date - Year/Month/Day</p> <p><b><u>RADIO ANTENNA MOUNT</u></b></p> <p>An antenna-mounting base with appropriate footage of coax cable and weatherproof cap shall be provided for a two (2)-way radio.</p> <p>The mount shall be located on the cab roof just to the rear of the officer seat.</p> <p>The cable shall be routed to the seat box on the officer side with enough cable for customer to route to the instrument panel if needed.</p> <p><b><u>ELECTRICAL POWER CONTROL SYSTEM</u></b></p> <p>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. PTO power circuits shall be protected by Type III manual reset non-cycling circuit breakers conforming to SAE J553 or J258 which remain open until manually reset. When required, automotive type fuses conforming to SAE J554, J1284, J1888 or J2077 shall be utilized to protect electronic equipment.</p>		



Specification	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 vehicles 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>  A 12-volt power stud and a grounding stud shall be provided in the electrical component compartment for two-way radio equipment.</p> <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 HARNESSING INSTALLATION</u></b>  To ensure rugged dependability, all 12-volt wiring harnesses installed by the apparatus manufacturer shall conform to the following specifications:</p> <p>SAE J1128 - Low tension primary cable</p> <p>SAE J1292 - Automobile, truck, truck-tractor, trailer and motor coach wiring</p> <p>SAE J163 - Low tension wiring and cable terminals and splice clips</p> <p>SAE J2202 - Heavy duty wiring systems for on-highway trucks</p> <p>NFPA 1901 - Standard for automotive fire apparatus</p>		

Specification	Bidder Complies	
	Yes	No
<p>FMVSS 302 - Flammability of interior materials for passenger cars, multipurpose passenger vehicles, trucks and buses</p> <p>SAE J1939 - Serial communications protocol</p> <p>SAE J2030 - Heavy-duty electrical connector performance standard</p> <p>SAE J2223 - Connections for on board vehicle electrical wiring harnesses</p> <p>NEC - National Electrical Code</p> <p>SAE J561 - Electrical terminals - Eyelet and spade type</p> <p>SAE J928 - Electrical terminals - Pin and receptacle type A</p> <p>Wiring shall be run in loom where exposed, and have grommets or other edge protection where wires pass through metal. Automatic reset circuit breakers shall be provided which conform to SAE standards. Wiring shall be color, function and number coded. Wire colors shall be integral to each wire insulator and run the entire length of each wire. Harnessing containing multiple wires and uses a single wire color for all wires shall not be allowed. Function and number codes shall be continuously imprinted on all wiring harness conductors at 2.00" intervals. All wiring installed between the cab and into doors shall be enclosed within an expandable rubber boot to protect the wiring. Exterior exposed wire connectors shall be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids. Electrical wiring and equipment shall be installed utilizing the following guidelines:</p> <ol style="list-style-type: none"> <li>1. All wire ends not placed into connectors shall be sealed with a heat shrink end cap. Wires without a terminating connector or sealed end cap shall not be allowed. All holes made in the roof shall be caulked with silicon. (no exception). Large fender washers, liberally caulked, shall be used when fastening equipment to the underside of the cab roof. 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. For low cost of ownership, electrical components designed to be removed for maintenance shall be quickly accessible. For ease of use, a coil of wire shall be provided behind the appliance to allow them to be pulled away from the mounting area for inspection and service work. Corrosion preventative compound shall be applied to non-waterproof electrical connectors 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. Any lights containing non-waterproof sockets in a weather-exposed area shall have corrosion preventative compound added to the socket terminal area. All electrical terminals in exposed areas shall have DOW 1890 protective Coating applied completely over the metal portion of the terminal. Rubber coated metal clamps shall be used to support wire harnessing</li> </ol>		

Specification	Bidder Complies	
	Yes	No
<p>and battery cables routed along the chassis frame rails. Heat shields shall be used to protect harnessing in areas where high temperatures exist. Harnessing passing near the engine exhaust shall be protected by a heat shield.</p> <p>All braided wire harnesses shall have a permanent label attached for easy identification of the harness part number and fabrication date.</p> <p><b><u>BATTERY CABLE INSTALLATION</u></b></p> <p>All 12-volt battery cables and battery cable harnessing installed by the apparatus manufacturer shall conform to the following requirements:</p> <p>SAE J1127 - Battery Cable</p> <p>SAE J561 - Electrical terminals, eyelets and spade type</p> <p>SAE J562 - Nonmetallic loom</p> <p>SAE J836A - Automotive metallurgical joining</p> <p>SAE J1292 - Automotive truck, truck-tractor, trailer and motor coach wiring</p> <p>NFPA 1901 - Standard for automotive fire apparatus</p> <p>Battery cables and battery cable harnessing shall be installed utilizing the following guidelines:</p> <ol style="list-style-type: none"> <li>1. All battery cables and battery harnesses shall have a permanent label attached for easy identification of the harness part number and fabrication date. Splices shall not be allowed on battery cables or battery cable harnesses. For ease of identification and simplified use, battery cables shall be color coded. All positive battery cables shall be red in color or wrapped in red loom the entire length of the cable. All negative battery cables shall be black in color. For ease of identification, all positive battery cable isolated studs throughout the cab and chassis shall be red in color.</li> </ol> <p>For increased reliability and reduced maintenance, all electrical buss bars located on the exterior of the apparatus shall be coated to prevent corrosion.</p> <p><b><u>ELECTRICAL COMPONENT INSTALLATION</u></b></p> <ol style="list-style-type: none"> <li>1. All lighting used on the apparatus shall be, at a minimum, a two (2) wire light grounded through a wired connection to the battery system. Lights using an apparatus metal structure for grounding shall not be allowed. All lights and reflectors, required to comply with Federal Vehicle Safety Standard #108, shall be furnished. Rear identification lights shall be recessed mounted for protection. Lights and wiring mounted in rear bulkheads shall be protected from damage by installing a false bulkhead inside the rear compartments.</li> </ol>		

Specification	Bidder Complies	
	Yes	No
<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. The results of the tests shall be recorded and provided to the purchaser at time of delivery.</p> <p><b><u>CAB SWITCHING INSTALLATION</u></b>  All emergency light switches shall be mounted on a separate panel installed in the cab. A master warning light switch and individual switches shall be provided to allow pre-selection of emergency lights. The light switches shall be rocker type with an internal indicator light to show when switch is energized. All switches shall be properly identified and mounted in a removable panel for ease in servicing. Identification of the switches shall be done by either printing or etching on the switch panel. The switches and identification shall be illuminated.</p> <p><b><u>BATTERY SYSTEM</u></b>  Four (4) 12 volt, Exide Model 31A950X1W 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 3800 CCA at 0 degrees Fahrenheit</li> <li>- 760 minutes of reserve capacity</li> <li>- SAE Posts</li> </ul> <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>ISOLATED BATTERY</u></b>  One (1) 12 volt, Exide Model 31A950X1W battery shall be provided for voltage sensitive components. A battery isolator appropriately suited for the group 31 battery capacity shall be supplied.</p> <p><b><u>BATTERY SYSTEM</u></b>  A single starting system shall be provided.</p> <p>An ignition switch and starter button shall be located on the instrument panel.</p>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>MASTER BATTERY SWITCH</u></b>  A master battery switch, to activate the battery system, shall be provided inside the cab within easy reach of the driver.</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>  Batteries shall be stored in well-ventilated compartments that are located under the cab and bolted directly to the chassis frame. The battery compartments shall be constructed of 3/16" steel plate and be designed to accommodate a maximum of three (3) group 31 batteries in each compartment. The battery hold-downs shall be of a non-corrosive material. All bolts and nuts shall be stainless steel.</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>  One (1) set of battery jumper studs with plastic color-coded covers shall be installed on the bottom of the driver's side battery box. This shall provide for easy jumper cable access.</p> <p><b><u>BATTERY CHARGER/ AIR COMPRESSOR</u></b>  A Kussmaul Pump Plus 1200, model 091-9-1200 single output battery charger/air compressor system shall be provided. A display bar graph indicating the state of charge shall be included.</p> <p>The automatic charger shall maintain one (1) set of batteries with a maximum output current of 40 amps.</p> <p>The 12-volt air compressor shall be installed to maintain the air system pressure when the vehicle is not in use.</p> <p>The battery charger shall be wired to the AC shoreline inlet through an AC receptacle adjacent to this battery charger.</p> <p>Battery charger shall be located in the front left body compartment, mounted High on the front wall behind the door roller..</p> <p>The battery charger indicator shall be located near the driver's seat riser with special bracketry.</p> <p><b><u>KUSSMAUL AUTO EJECT FOR SHORELINE</u></b>  one (1) shoreline receptacle shall be provided to operate the dedicated 120-volt circuits on the truck without the use of the generator.</p>		

Specification	Bidder Complies	
	Yes	No
<p>The shoreline receptacle (s) shall be provided with a NEMA 5-20, 120 volt, 20 amp, straight blade Kussmaul Super auto eject plug with a black weatherproof cover. The cover is spring loaded to close, preventing water from entering when the shoreline is not connected.</p> <p>The unit is completely sealed to prevent road dirt contamination.</p> <p>A solenoid wired to the vehicle's starter is energized when the engine is started. This instantaneously drives the plug from the receptacle.</p> <p>An internal switch arrangement shall be provided to disconnect the load prior to ejection to eliminate arcing of the connector contacts.</p> <p>The shoreline shall be connected to Battery charger..</p> <p>A mating connector body shall also be supplied with the loose equipment.</p> <p>The shoreline receptacle shall be located over the driver side front wheel.</p> <p><b><u>BATTERY TRAYS</u></b> Formed fit heavy-duty roto-molded polyethylene battery trays with drain tubes shall be provided for the batteries to sit in.</p> <p><b><u>ALTERNATOR</u></b> A C.E. Niehoff, model C680-1, alternator shall be provided. It shall have a rated output current of 430 amp as measured by SAE method J56. Also, it shall have a custom three (3)-set point voltage regulator, manufactured by C. E. Niehoff. 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>CUSTOMER RADIO WIRING</u></b> There shall be one (1) 12 volt combination wiring leads of which each shall include, one (1) battery direct, one (1) ignition and one (1) negative, for use with radio equipment. Each lead shall be 18" long and be provided At or near upper switch panel # 10.. The leads shall be clearly marked and in a coil. A breaker rated for 20 amps shall be provided for circuit protection of the battery direct powered lead with a minimum of 12 gauge wire. The ignition lead is for sensing purposes only.</p> <p>The wires shall be colored coded as follows:</p> <ul style="list-style-type: none"> <li>• Red for battery direct</li> <li>• Yellow for ignition</li> <li>• Black for ground</li> </ul> <p><b><u>ELECTRONIC LOAD MANAGEMENT</u></b> A Kussmaul electronic load management (ELM) system shall be provided that monitors the vehicles 12-volt electrical system, and automatically reduces the</p>		

Specification	Bidder Complies	
	Yes	No
<p>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. Five (5) 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>The (ELM) also includes sequencer function for the five (5) managed loads and two (2) additional.</p> <p><b><u>EXTERIOR LIGHTING</u></b></p> <p>Exterior lighting shall meet or exceed Federal Department of Transportation, Federal Motor Vehicle Safety Standards and National Fire Protection Association requirements in effect at time of proposal.</p> <p>Front headlights shall be halogen, rectangular shape, one (1) pair mounted in each front trim housing.</p> <p>The LED directional lights shall wrap-around on the outside corners of the trim housing. The headlight and LED directional lights shall be in the same assembly.</p> <p>Five (5) LED clearance and marker lights shall be installed across the leading edge of the cab.</p> <p>The three (3) identification lights located at the rear shall be installed per the following:</p> <p style="padding-left: 40px;">Truck-Lite, Model 35, LED</p> <p style="padding-left: 40px;">As close as practical to the vertical centerline.</p> <p style="padding-left: 40px;">Centers spaced not less than six (6) inches or more than twelve (12) inches apart.</p> <p style="padding-left: 40px;">Red in color.</p> <p style="padding-left: 40px;">All at the same height.</p> <p>The four (4) clearance lights located at the rear shall be installed per the following:</p> <p style="padding-left: 40px;">Truck-Lite, Model 35, LED</p> <p style="padding-left: 40px;">To indicate the overall width of the vehicle.</p> <p style="padding-left: 40px;">One (1) each side of the vertical centerline.</p> <p style="padding-left: 40px;">All at the same height.</p> <p style="padding-left: 40px;">As near the top as practical.</p> <p style="padding-left: 40px;">To be visible from the rear and the side.</p>		

Specification	Bidder Complies	
	Yes	No
<p>One (1) each side, facing the side.</p> <p>One (1) each side, facing the rear.</p> <p>Per FMVSS 108 and CMVSS 108 requirements.</p> <p><b><u>REAR FMVSS LIGHTING</u></b></p> <p>The rear stop/tail and directional LED lighting shall consist of the following:</p> <p>Two (2) Whelen model 60R00XRR red LED stop/tail lights.</p> <p>Two (2) Whelen model 60A00TAR amber LED arrow turn lights .</p> <p>Each light shall be installed separately at the rear with a flange.</p> <p>Four (4) red reflectors shall be provided.</p> <p>A Weldon, Model 23882-2600-00, license plate bracket shall be mounted on the driver's side above the warning lights. A Weldon, Model 9186-23882-30, step lamp shall illuminate the license plate.</p> <p>Two (2) Whelen, Model: 60J000CR, backup lights shall be provided.</p> <p>Both lights shall be installed with 6E or 64 flange kit.</p> <p><b><u>BACK-UP ALARM</u></b></p> <p>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.</p> <p><b><u>MAP LIGHT</u></b></p> <p>One (1) map light with goose neck shall be provided. Each map light shall be a Southern Vehicle Products, model ML-5, with clear lens and be located On right side of cab dash.. Each map light shall be provided with an 21.00" long flexible neck.</p> <p><b><u>LIGHT, INTERMEDIATE</u></b></p> <p>There shall be one (1) pair, of Truck-Lite, Model: 60115Y, amber, LED, lights furnished, one (1) each side of the rear fender panel, horizontal, in place of the directional/marker intermediate light. This light shall double as a turn signal and marker light.</p> <p><b><u>PERIMETER SCENE LIGHTS, CAB</u></b></p> <p>There shall be a Truck-Lite, model 40003, 4.00" grommet mount weatherproof light provided for each cab door. Lighting shall be designed to provide illumination on areas under the driver, officer, and crew cab riding area exits, which shall be activated automatically when the exit doors are opened and by the same means as the body perimeter lights.</p>		



Specification	Bidder Complies	
	Yes	No
<p>The lighting shall be capable of providing illumination at a minimum level of two (2) foot-candles on ground areas within 30.00" of the edge of the apparatus in areas which personnel climb in or out of the apparatus or descend from the apparatus to the ground level.</p> <p><b><u>PERIMETER SCENE LIGHTS, BODY</u></b></p> <p>There shall be a total of four (4) Truck-Lite, model 40003, 4.00" grommet mount weatherproof lights provided on the apparatus. Two (2) lights shall be provided under the rear step area and two (2) lights shall be provided under the pump panel running boards. The lights shall be spaced one (1) each side of apparatus and have a clear lens. The perimeter scene lights shall be activated by a cab and crew cab door switch and a switch on the instrument panel.</p> <p>The lighting shall be capable of providing illumination at a minimum level of two (2) foot-candles on ground areas within 30.00" of the edge of the apparatus in areas designed for personnel to climb onto the apparatus or descend from the apparatus to the ground level.</p> <p><b><u>STEP LIGHTS</u></b></p> <p>Four (4) Ri-Tar, Model M27HW2 Super LED, step lights shall be provided. One (1) step light shall be provided on each side, on the front compartment face and two (2) step lights at the rear to illuminate the tailboard.</p> <p>These step lights shall be actuated with the pump panel light switch.</p> <p>All other steps on the apparatus shall be illuminated per the current edition of NFPA 1901.</p> <p><b><u>LED HOODED WORK LIGHT</u></b></p> <p>Additional Ri-Tar LED work lights with chrome bezels shall be provided. The lights shall be activated by the pump operator's panel light switch. The hooded work lights shall be installed in the dunnage (cargo) area.. The quantity of additional hooded work lights is two (2) lights.</p> <p><b><u>DECK LIGHTS</u></b></p> <p>Two (2)-6.00" Unity AG deck lights with swivel mount shall be provided at the rear of the hose bed, one (1) each side.</p> <p>One (1) light shall be furnished with a 160,000 candle power halogen spot bulb and the other shall be furnished with a 6,000 candle power halogen flood bulb.</p> <p><b><u>SWITCH, MASTER FOR REAR DECK LIGHTS</u></b></p> <p>A master switch shall be provided On the cab instrument panel. for the rear deck lights.</p> <p><b><u>WATER TANK</u></b></p> <p>Booster tank shall have a capacity of 500 gallons and be constructed of polypropylene plastic by United Plastic Fabricating, Incorporated.</p>		

Specification	Bidder Complies	
	Yes	No
<p>Tank shall have a rectangular shape.</p> <p>Tank joints and seams shall be nitrogen welded inside and out.</p> <p>Tank shall be baffled in accordance with NFPA Bulletin 1901 requirements.</p> <p>Baffles shall have vent openings at both the top and bottom to permit movement of air and water between compartments.</p> <p>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.</p> <p>Transverse partitions shall extend from 4.00" off the bottom of the tank to the underside of the top cover.</p> <p>All partitions shall interlock and shall be welded to the tank bottom and sides.</p> <p>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.</p> <p>Tank top shall be sufficiently supported to keep it rigid during fast filling conditions.</p> <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 is 8.00" long x 8.00" wide x 6.00" deep 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>		

Specification	Bidder Complies	
	Yes	No
<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>HOSE BED</u></b>  The hose body shall be fabricated of .125"-5052 aluminum with a 38,000 psi tensile strength.</p> <p>Hose body width shall be a minimum of 68.00" inside.</p> <p>Upper and rear edges of side panels shall have a double break for rigidity, a split tube finish shall not be acceptable.</p> <p>The upper inside area of the beavertails shall be covered with brushed stainless steel to prevent damage to painted surface when hose is removed.</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 .50" x 4.50" with spacing between slats for hose ventilation.</p> <p>Hose bed shall accommodate 200' of 1.75", 200' of 2.5", 1500' of 4.0", 200' of 2.50" 200' of 1.75"..</p> <p>Four (4) 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>Partition 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><b><u>MOUNTING BOX FOR NOZZLE</u></b>  An aluminum treadplate box shall be provided to hold a Akron 1725P large nozzle. There shall be a total of two (2) boxes with a black nylon strap with velcro fastener to contain the nozzle on each. The boxes shall be mounted At final inspection..</p> <p><b><u>HOSE BED COVER</u></b>  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>		

Specification	Bidder Complies	
	Yes	No
<p>If access to water tank fill tower is blocked by the hose bed cover, then a hinged door shall be provided in it so that 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 aluminum treadplate hose bed cover. A total of four (4) footman loop latch two (2) per flap shall be provided. A strip of velcro shall be sewn onto the bottom of each flap and extend down into the footman loops and then back up to be attached to the flap.</p> <p><b><u>RUNNING BOARDS</u></b>  Running boards shall be fabricated of .125" bright aluminum treadplate.</p> <p>Each running board shall be supported by a welded 2.00" square tubing and channel assembly, which shall be bolted to the pump compartment substructure.</p> <p>Running boards shall be 12.75" deep and spaced .50" away from the pump panel.</p> <p>A splashguard shall be provided above the running board treadplate.</p> <p><b><u>TAILBOARD</u></b>  Rear step shall also 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 rear tailboard shall be 16.00" deep and 4.00" to the rear of the extended side compartments.</p> <p>The 4.00" extension to the rear of the extended compartments shall be angled up to prevent this area from being used as a stepping surface. The back edge of the tailboard shall be reinforced to serve as a bumper.</p> <p>The exterior side shall be flanged down and in.</p> <p>Flanges shall not be notched.</p> <p>Entire rear surface between the beavertails shall be covered with bright aluminum treadplate to protect the painted surface when removing hose.</p> <p>Inside surface of each beavertail in the hose bed area shall be covered with polished stainless steel to protect the paint finish.</p> <p>The remaining inside surface of the beavertails shall be covered with bright aluminum treadplate.</p> <p><b><u>REAR WALL, SMOOTH ALUMINUM/BODY MATERIAL</u></b>  The rear facing surfaces of the center rear wall shall be smooth aluminum.</p>		

Specification	Bidder Complies	
	Yes	No
<p>The rear facing surfaces of the bulkheads, the surface to the rear of the side body compartments, shall be smooth and the same material as the body.</p> <p>Any inboard facing surfaces shall be .125" aluminum.</p> <p><b><u>TOW BAR</u></b>  A tow bar shall be installed under the tailboard at center of truck.</p> <p>Tow bar shall be fabricated of 1.00" CRS bar rolled into a 3.00" radius.</p> <p>Tow bar assembly shall be constructed of .38" structural angle. When force is applied to the bar, it shall be transmitted to the frame rail.</p> <p>Tow bar assembly shall be designed and positioned to allow up to a 30-degree upward angled pull of 17,000 lb, or a 20,000 lb straight horizontal pull in line with the centerline of the vehicle.</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>COMPARTMENTATION</u></b>  Body and compartments shall be fabricated of .125", 5052-H32 aluminum.</p> <p>Side compartments shall be an integral assembly with the rear fenders.</p> <p>Circular fender liners shall be provided for prevention of rust pockets and ease of maintenance.</p> <p>Compartment flooring shall be of the sweep out design with the floor higher than the compartment door lip.</p> <p>The compartment door opening shall be framed by flanging the edges in 1.75" and bending out again .75" to form an angle.</p> <p>Drip protection shall be provided above the doors by means of bright aluminum extrusion, formed bright aluminum tread plate or polished stainless steel.</p> <p>The top of the compartment shall be covered with bright aluminum tread plate rolled over the edges on the front, rear and outward side. These covers shall have the corners welded.</p> <p>Side compartment covers shall be separate from the compartment tops.</p> <p>Front facing compartment walls shall be covered with bright aluminum tread plate.</p> <p>All screws and bolts which protrude into a compartment shall have acorn nuts on the ends to prevent injury.</p> <p><b><u>UNDERBODY SUPPORT SYSTEM</u></b>  Due to the severe loading requirements of this pumper a method of body and compartment support suitable for the intended load shall be provided.</p>		

Specification	Bidder Complies	
	Yes	No
<p>The backbone of the support system shall be the chassis frame rails which is the strongest component of the chassis and is designed for sustaining maximum loads.</p> <p>The support system shall include .375” thick steel vertical angle supports bolted to the chassis frame rails with .625” diameter bolts.</p> <p>Attached to the bottom of the steel vertical angles shall be horizontal angles, with gussets welded to the vertical members, which extend to the outside edge of the body.</p> <p>A steel frame shall be mounted on the top of these supports to create a floating substructure which shall result in a 500 lb equipment support rating per lower compartment.</p> <p>The floating substructure shall be separated from the horizontal members with neoprene elastomer isolators. These isolators shall reduce the natural flex stress of the chassis from being transmitted to the body.</p> <p>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.</p> <p>A design with body compartments hanging on the chassis in an unsupported fashion shall not be acceptable.</p> <p><b><u>AGGRESSIVE WALKING SURFACE</u></b> All exterior surfaces designated as stepping, standing, and walking areas shall comply with the required average slip resistance of the current NFPA standards.</p> <p><b><u>LOUVERS</u></b> Louvers shall be stamped into compartment walls to provide the proper airflow inside the body compartments and to prevent water from dripping into the compartment. Where these louvers are provided, they shall be formed into the metal and not added to the compartment as a separate plate.</p> <p><b><u>TESTING OF BODY DESIGN</u></b> Body structural analysis shall be fully tested. Proven engineering and test techniques such as finite element analysis, stress coating and strain gauging shall be performed with special attention given to fatigue, life and structural integrity of the cab, body and substructure.</p> <p>Body shall be tested while loaded to its greatest in-service weight.</p> <p>The criteria used during the testing procedure shall include:</p>		

Specification	Bidder Complies	
	Yes	No
<p>- Raising opposite corners of the vehicle tires 9.00" to simulate the twisting a truck may experience when driving over a curb.</p> <p>- Making a 90 degree turn, while driving at 20 mph to simulate aggressive driving conditions.</p> <p>- Driving the vehicle at 35 mph on a washboard road.</p> <p>- Driving the vehicle at 55 mph on a smooth road.</p> <p>- Accelerating the vehicle fully, until reaching the approximate speed of 45 mph on rough pavement.</p> <p>Evidence of actual testing techniques shall be made available upon request.</p> <p><b><u>COMPARTMENTATION, DRIVER'S SIDE</u></b></p> <p>A full height, roll-up door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 44.00" wide x 66.13" high x 25.75" deep in the lower 58.25" of the compartment and 15.63" deep in the remaining upper portion behind the roll-up door. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 38.25" wide x 58.25" high.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p>A roll-up door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 66.50" wide x 31.38" high x 25.75" deep in the lower 25.38" of the compartment and 15.63" deep in the remaining upper portion. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 58.25" wide x 25.12" high.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p>A full height, roll-up door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 47.50" wide x 66.13" high x 25.75" deep in the lower 58.25" of the compartment and 15.63" deep in the remaining upper portion. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 44.75" wide x 58.25" high.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>COMPARTMENTATION, PASSENGER'S SIDE</u></b></p> <p>A full height, roll-up door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 44.00" wide x 66.13" high x 25.75" deep in the lower 58.25" of the compartment and 15.63" deep in the remaining upper portion behind the roll-up door. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 38.25" wide x 58.25" high. Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p>A roll-up door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 66.50" wide x 31.38" high x 25.75" deep in the lower 25.38" of the compartment and 15.63" deep in the remaining upper portion. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 58.25" wide x 25.12" high. Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p>A full height, roll-up door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 47.50" wide x 66.13" high x 25.75" deep in the lower 58.25" of the compartment and 15.63" deep in the remaining upper portion. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 44.75" wide x 58.25" high. Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p><b><u>ROLL-UP DOOR, SIDE COMPARTMENTS</u></b></p> <p>There shall be six (6) compartment doors installed on the side compartments. The doors shall be double faced aluminum construction, an anodized satin finish and manufactured by A&amp;A Manufacturing (Gortite).</p> <p>Lath sections shall be an interlocking rib design and shall be individually replaceable without complete disassembly of door.</p> <p>Between each slat at the pivoting joint shall be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals shall allow door to operate in extreme temperatures ranging from plus 180 to minus 40 degrees Fahrenheit. Side, top and bottom seals shall be provided to resist ingress of dirt and weather and be made of Santoprene.</p>		



Specification	Bidder Complies	
	Yes	No
<p>All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from plus 300 to minus 40 degrees Fahrenheit. Hardened plastic shall not be acceptable.</p> <p>A polished stainless steel lift bar to be provided for each roll-up door. Lift bar shall be located at the bottom of door and have latches on the outer extrusion of the doors frame. A ledge shall be supplied over lift bar for additional area to aid in closing the door.</p> <p>Doors shall be constructed from an aluminum box section. The exterior surface of each slat shall be flat. The interior surfaces shall be concave to provide strength and prevent loose equipment from jamming the door from inside.</p> <p>To conserve space in the compartments, the spring roller assembly shall not exceed 3.00" in diameter. A garage style roll door shall not be acceptable.</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>COMPARTMENTATION, REAR</u></b></p> <p>A roll-up door compartment above the rear tailboard shall be provided.</p> <p>Interior dimensions of this compartment shall be 40.00" wide x 33.63" high x 25.88" deep in the lower 26.00" of the compartment and 15.75" deep in the remaining upper portion. Depth of the compartment shall be calculated with the compartment door closed.</p> <p>A louvered, removable access panel shall be furnished on the back wall of the compartment.</p> <p>Rear compartment shall be open into the rear side compartments.</p> <p>Clear door opening of this compartment shall be 33.25" wide x 26.00" high.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p><b><u>ROLL-UP DOOR, REAR COMPARTMENT</u></b></p> <p>There shall be a rear roll up door. The door shall be double faced aluminum construction, an anodized satin finish and manufactured by A&amp;A Manufacturing (Gortite).</p> <p>Lath sections shall be an interlocking rib design and shall be individually replaceable without complete disassembly of door.</p> <p>Between each slat at the pivoting joint shall be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals shall allow door to operate in extreme temperatures ranging from plus 180 to minus 40 degrees Fahrenheit. Side, top and bottom</p>		

Specification	Bidder Complies	
	Yes	No
<p>seals shall be provided to resist ingress of dirt and weather and be made of Santoprene.</p> <p>All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from plus 300 to minus 40 degrees Fahrenheit. Hardened plastic shall not be acceptable.</p> <p>A polished stainless steel lift bar to be provided for each roll-up door. Lift bar shall be located at the bottom of door and have latches on the outer extrusion of the doors frame. A ledge shall be supplied over lift bar for additional area to aid in closing the door.</p> <p>Door shall be constructed from an aluminum box section. The exterior surface of each slat shall be flat. The interior surface shall be concave to provide strength and prevent loose equipment from jamming the door from inside.</p> <p>To conserve space in the compartments, the spring roller assembly shall not exceed 3.00" in diameter. A garage style roll door shall not be acceptable.</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) compartments with Amdor LED compartment light strips. The strips shall be centered vertically along each side of the door framing. The compartments with these strip lights shall be located All compartments - each side of door opening..</p> <p>Any remaining compartments shall include 6.00" diameter Truck-Lite, Model: 79384, lights in each enclosed compartment. 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>MOUNTING TRACKS</u></b></p> <p>There shall be seven (7) sets of tracks for mounting shelf(s) in D-1, D-3, P-1, &amp; P-3. . These tracks shall be installed vertically to support the adjustable shelf(s), and shall be full height of the compartment. The tracks shall be painted to match the compartment interior.</p> <p><b><u>ADJUSTABLE SHELVES</u></b></p> <p>There shall be seven (7) shelves with a capacity of 500 pounds provided. The shelf construction shall consist of .188" aluminum with 2.00" sides. Each shelf shall be painted to match the compartment interior. 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>		

Specification	Bidder Complies	
	Yes	No
<p>The location shall be Two (2) D-1, One (1) D-3, Two (2) P-1, and Two (2) in P-3..</p> <p><b><u>SLIDE-OUT/TILT-DOWN TRAY</u></b>  There shall be one (1) slide-out tray provided.</p> <p>The capacity rating (in the extended position) shall be 215 pounds minimum.</p> <p>Approximately two-thirds of the tray shall slide-out from its stored position and shall tilt 30 degrees down from horizontal. The vertical position within the compartment shall be adjustable.</p> <p>Construction shall consist of .188" thick aluminum for the tray bottom and end, and special aluminum extrusions for the tray sides, front and tracks.</p> <p>The tray corners shall be welded for strength and rigidity.</p> <p>The tray shall be equipped with ball bearing rollers for smooth operation.</p> <p>Two spring loaded locks shall be provided at the front of the tray, one on each end.</p> <p>Rubber padded stops shall be provided for both the in out tray position.</p> <p>The tray(s) shall be located in D-2..</p> <p><b><u>INVERTED SLIDE OUT TRAY</u></b>  There shall be one (1) slide-out tray, floor mounted and inverted, with a minimum capacity of 200 pounds provided. Capacity rating shall be in the extended position.</p> <p>Slides shall be equipped with ball bearings for ease of operation and years of dependable service.</p> <p>Tray location shall be R-1..</p> <p>Automatic locks shall be provided for both the "in" and "out" positions. The trip mechanism for it shall be located at the front of the tray for ease of use with a gloved hand.</p> <p><b><u>SWING OUT TOOLBOARD</u></b>  A swing out aluminum toolboard shall be provided.</p> <p>It shall be a minimum of .188" thick with .20" 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 back 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 pounds.</p>		

Specification	Bidder Complies	
	Yes	No
<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 One (1) tool board(s) provided, shall be painted to match compartment interior, and installed P-2..</p> <p><b><u>BACKBOARD STORAGE</u></b></p> <p>A transverse area over the pump and forward shall hold two (2) backboards.</p> <p>A blister shall be supplied at each side to enclose the backboards due to their length.</p> <p>The backboards shall be accessible from the either side of the vehicle through stainless steel doors.</p> <p>The size of the back boards are 18.00" wide x 72.00" long x 2.0" thick..</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 2.12" high with 1.38" 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><b><u>BODY FENDER CROWNS</u></b></p> <p>Stainless steel fender crowns shall be provided around the rear wheel openings.</p> <p>A rubber welting shall be provided between the body and the crown to seal the seam and restrict moisture from entering.</p> <p>A dielectric barrier shall be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.</p> <p><b><u>HARD SUCTION HOSE</u></b></p> <p>NFPA 1901, 2009 edition, section 5.7.2 requires a minimum of 20 ft of suction hose or 15 ft of supply hose.</p> <p>Hose is not on the apparatus as manufactured. The fire department shall provide suction or supply hose.</p> <p>There shall be One (1) length of 10.00' long hose provided. The brand shall be KoChek.</p> <p><b><u>HOSE TROUGHS</u></b></p> <p>Hard suction hose shall be carried in two (2) V-shaped troughs, one (1) each side, and held in place by chrome plated, quarter turn, spring loaded clamps.</p> <p>Troughs shall be constructed of steel and painted job color.</p>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>HANDRAILS</u></b></p> <p>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> <ul style="list-style-type: none"> <li>- Six (6) handrails shall be provided as shown on the approval drawing.</li> <li>- One (1) vertical handrail, not less than 29.00" long, shall be located on each rear beavertail.</li> <li>- One (1) full width horizontal handrail shall be provided below the hose bed at the rear of the apparatus.</li> <li>- Two (2) handrails, 10.00" long, shall be provided mounted On each side of body..</li> </ul> <p><b><u>AIR BOTTLE STORAGE (Single bottle)</u></b></p> <p>A total of three (3) air bottle compartments shall be provided and located DS over rear wheel well (rearward), and two (2) PS over rear wheel well forward and rearward.. The air bottle compartment shall be in the form of a round tube (7.63" diameter minimum) and of adequate depth to accommodate different size air bottles. Flooring shall be rubber lined and have a drain hole. A stainless steel door with a chrome-plated 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><b><u>EXTENSION LADDER</u></b></p> <p>There shall be a 24', two (2) section, aluminum, Duo-Safety, Series 900-A extension ladder provided.</p> <p><b><u>ROOF LADDER</u></b></p> <p>There shall be a 14' aluminum, Duo-Safety, Series 775-A roof ladder provided.</p> <p><b><u>LADDER STORAGE</u></b></p> <p>The ladders shall be stored in a tunnel through the water tank and accessed at the rear..</p> <p>The ladders shall extend into the pump compartment just to the rear of the water pump.</p> <p>Ladder shall be stored horizontally stacked.</p> <p>Ladders shall be secured from moving forward during travel.</p> <p>Rear of ladder storage area shall have a hinged bright aluminum treadplate door with D-handle latch latche(s) for access to the ladders.</p>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>FOLDING LADDER</u></b> One (1) 10' aluminum, Series FL-10 folding ladder shall be installed in a U-shaped trough inside the ladder storage compartment.</p> <p><b><u>LADDER ENCLOSURE</u></b> The ladder storage area shall include an aluminum enclosure that shall cover the section of ladders that extends into the pump house. The enclosure shall include a piece of black rubber to conceal the ladders in the gap between the pump house and the body.</p> <p><b><u>PIKE POLE 8 FT, PROVIDED BY FIRE DEPARTMENT</u></b> NFPA 1901, 2009 edition, Section 5.8.3 requires one (1) 8 ft or longer pike pole mounted in a bracket fastened to the apparatus.  The pike pole is not on the apparatus as manufactured. The fire department shall provide and mount the pike pole.</p> <p><b><u>PIKE POLE 6 FT, PROVIDED BY FIRE DEPARTMENT</u></b> NFPA 1901, 2009 edition, Section 5.8.3 requires one (1) 6 ft pike pole or plaster hook mounted in a bracket fastened to the apparatus.  The pike pole is not on the apparatus as manufactured. The fire department shall provide and mount the pike pole.</p> <p><b><u>PIKE POLE STORAGE</u></b> Aluminum tubing shall be used for the storage of two (2) pike poles and shall be located In ladder storage compartment.. If the head of a pike pole can come in contact with a painted surface, a stainless steel scuffplate shall be provided.</p> <p><b><u>STEPS</u></b> A folding step shall be provided on the front of each fender compartment. The step shall be bright finished, non-skid with a black coating. The step can be used as a hand hold with two openings wide enough for a gloved hand.</p> <p><b><u>REAR FOLDING STEPS</u></b> Bright finished, non-skid folding steps with a black coating shall be provided at the rear. The steps can be used as a hand hold with two openings wide enough for a gloved hand.  Three (3) additional folding steps shall be located Two (2) on the DS front bulkhead and One (1) on the PS front bulkhead,. The step(s) shall be bright finished, non-skid, with a black coating. The step(s) can be used as a hand hold with two openings wide enough for a gloved hand.</p>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>STEP, PULL-OUT/DROP DOWN</u></b></p> <p>Two (2) pull-out steps shall be provided. Each step shall be 20" wide and shall pull out and drop down to provide easy access.</p> <p>The step shall be located on the DS &amp; PS rear tailboard..</p> <p><b><u>PUMP</u></b></p> <p>Pump shall be a Waterous CSU, 1500 gpm single (1) stage midship mounted centrifugal type.</p> <p>Pump shall be the class "A" type.</p> <p>Pump shall deliver the percentage of rated discharge at pressures indicated below:</p> <ul style="list-style-type: none"> <li>- 100% of rated capacity at 150 psi net pump pressure.</li> <li>- 70% of rated capacity at 200 psi net pump pressure.</li> <li>- 50% of rated capacity at 250 psi net pump pressure.</li> </ul> <p>Pump body shall be close-grained gray iron, bronze fitted, and horizontally split in two (2) sections for easy removal of the entire impeller shaft assembly (including wear rings).</p> <p>Pump shall be designed for complete servicing from the bottom of the truck, without disturbing the pump setting or apparatus piping.</p> <p>Pump case halves shall be bolted together on a single horizontal face to minimize chance of leakage and facilitate ease of reassembly. No end flanges shall be used.</p> <p>Discharge manifold of the pump shall be cast as an integral part of the pump body assembly and shall provide a minimum of three (3) 3.50" openings for flexibility in providing various discharge outlets for maximum efficiency.</p> <p>The three (3) 3.50" openings shall be located as follows: one (1) outlet to the right of the pump, one (1) outlet to the left of the pump, and one (1) outlet directly on top of the discharge manifold.</p> <p>Impeller shaft shall be stainless steel, accurately ground to size. It shall be supported at each end by sealed, anti-friction ball bearings for rigid precise support. Impeller shall have flame plated hubs assuring maximum pump life and efficiency despite any presence of abrasive matter in the water supply.</p> <p>Bearings shall be protected from water and sediment by suitable stuffing boxes, flinger rings, and oil seals. No special or sleeve type bearings shall be used.</p> <p>Stuffing boxes shall be of the conventional two (2) piece, split-gland type, to permit adjustment or replacement of Grafoil packing without disturbing the pump. Water shall be fed into stuffing box lantern rings for proper lubrication and cooling when the pump is operating.</p>		

Specification	Bidder Complies	
	Yes	No
<p>Lantern rings shall be located at the inner ends of the stuffing boxes, to avoid having to remove them when replacing pump packing.</p> <p>Wear rings shall be bronze and easily replaceable to restore original pump efficiency and eliminate the need to replace the entire pump casing due to wear.</p> <p><b><u>PUMP TRANSMISSION</u></b></p> <p>Pump transmission shall be made of a three (3) piece, aluminum, horizontally split casing. Power transfer to pump shall be through a high strength Morse HY-VO silent drive chain.</p> <p>Drive shafts shall be a minimum of 2.35" diameter hardened and ground alloy steel. All shafts shall be ball bearing supported. The case shall be designed as to eliminate the need for water cooling.</p> <p><b><u>AIR PUMP SHIFT</u></b></p> <p>Pump shift engagement shall be made by a two (2) position sliding collar, actuated pneumatically (by air pressure), with a three (3) position air control switch located in the cab. A manual back-up shift control shall also be located on the driver's side pump panel.</p> <p>Two (2) indicator lights shall be provided adjacent to the pump shift inside the cab. One (1) green light shall indicate the pump shift has been completed and be labeled "pump engaged". The second green light shall indicate when the pump has been engaged, and that the chassis transmission is in pump gear. This indicator light shall be labeled "OK to pump".</p> <p>Another green indicator light shall be installed adjacent to the hand throttle on the pump panel and indicate either the pump is engaged and the road transmission is in pump gear, or the road transmission is in neutral and the pump is not engaged. This indicator light shall be labeled "Warning: Do not open throttle unless light is on".</p> <p>The pump shift control in the cab shall be illuminated to meet NFPA requirements.</p> <p><b><u>TRANSMISSION LOCK-UP</u></b></p> <p>The direct gear transmission lock-up for the fire pump operation shall engage automatically when the pump shift control, in the cab, is activated.</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. Heat exchanger shall be cylindrical type and shall be a separate unit. It shall be installed in the pump or engine compartment with the control located on the pump operator's control panel. Exchanger shall be plumbed to the master drain valve.</p>		



Specification	Bidder Complies	
	Yes	No
<p><b><u>INTAKE RELIEF VALVE</u></b></p> <p>An Elkhart relief valve shall be installed on the suction side of the pump preset at 125 psig.</p> <p>Relief valve shall have a working range of 75 psig to 250 psig.</p> <p>Outlet shall terminate below the framerrails with a 2.50" National Standard hose thread adapter and shall have a "do not cap" warning tag.</p> <p>Control shall be located behind an access door at the right (passenger's) side pump panel.</p> <p><b><u>PRESSURE GOVERNOR</u></b></p> <p>This apparatus shall be equipped with a Class1 "Total Pressure Governor" engine/pump governor/throttle system that is connected directly to the Electronic Control Module (ECM) mounted on the engine. The "Total Pressure Governor" is to operate as a pressure sensor (regulating) governor (PSG).</p> <p>A special preset feature shall permit a predetermined pressure of RPM to be set. The preset pressure or RPM will be displayed on the message display of the "Total Pressure Governor". The preset shall be easily adjustable by the operator</p> <p>The pressure sensor governor system shall be operable only after the vehicle parking brake has been set, the transmission is the pumping mode, and the fire pump has been engaged.</p> <p>The pressure sensor governor system shall have two (2) modes of operation: pressure mode or rpm mode.</p> <p>When in the pressure mode, the PSG system shall automatically maintain the discharge pressure set by the operator regardless of flow (within engine/pump operating capabilities).</p> <p>In the rpm mode, the PSG system shall automatically maintain a set engine speed, regardless of engine load (within engine operation capabilities).</p> <p>A pump cavitation protection feature shall be provided which shall return the engine to idle should the pump cavitate.</p> <p>The pressure controller shall incorporate monitoring for engine coolant temperature, oil pressure, and battery voltage.</p> <p><b><u>PRIMER</u></b></p> <p>An electric pump priming system shall be furnished with the apparatus. It shall consist of a rotary vane priming pump, driven by a 12 volt electric motor.</p> <p>All rotating parts of the pump shall be made of corrosion resistant aluminum, stainless steel, or laminated phenolic.</p> <p>Pump cylinder shall be made of aluminum alloy, hard anodized and Teflon coated, for corrosion resistance and long life.</p>		

Specification	Bidder Complies	
	Yes	No
<p>The primer shall be built by the manufacturer of the fire pump.</p> <p>A control located at the pump control panel shall operate the primer.</p> <p>When dry, the pump system shall be capable of taking suction through 20 feet of hard suction hose and discharging water in not more than the time allowed by current NFPA 1901 standard. Also, rated capacity of the pump shall be achieved at the lift stated in current NFPA 1901 standard table.</p> <p><b><u>RECIRCULATING LINE, WITH CHECK VALVE</u></b></p> <p>A .50" diameter recirculating line, from the pump to the water tank, shall be furnished with a control installed at the pump operator's control panel. A check valve shall be provided in this line to prevent the back flow of water from the tank to the pump if the valve is left in the open position.</p> <p><b><u>THERMAL RELIEF VALVE</u></b></p> <p>A Watrous Overheat Protection Manager (OPM) shall be mounted on the water pump. The OPM shall consist of a valve that opens and discharges to the ground when the water in the pump reaches 140 F and a warning light that is triggered when the water in the pump reaches 180 F. The warning light shall act as an additional protection device if the temperature in the pump keeps rising after the valve opens. The warning light with a test switch shall be mounted on the pump operator panel.</p> <p><b><u>PUMP MANUALS</u></b></p> <p>Two (2) pump manuals from the pump manufacturer shall be furnished in compact disc format with the apparatus. Manuals shall cover pump operation, maintenance, and parts.</p> <p><b><u>PLUMBING</u></b></p> <p>All inlet and outlet plumbing, 3.00" and smaller, shall be plumbed with either stainless steel pipe or synthetic rubber hose reinforced with high-tensile polyester braid. Small diameter secondary plumbing such as drain lines shall be stainless steel, brass or hose.</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 lines shall drain through a master drain valve or shall be equipped with individual drain valves. All individual drain lines for discharges 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>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>MAIN PUMP INLETS</u></b></p> <p>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.</p> <p>The main pump inlets shall have National Standard Threads with a long handle chrome cap.</p> <p>The cap shall be the VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected. (no exception)</p> <p><b><u>VALVES</u></b></p> <p>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.</p> <p>Valves shall have a ten (10) year warranty.</p> <p><b><u>INLET (Left side)</u></b></p> <p>On the left side pump panel shall be one (1) 2.50" auxiliary suction, terminating in 2.50" National Standard Hose Thread. The auxiliary suction shall be provided with a strainer, chrome swivel and plug.</p> <p><b><u>INLET (Right side)</u></b></p> <p>On the right side pump panel shall be one (1) 2.50" auxiliary suction, terminating in 2.50" National Standard Hose Thread. The auxiliary suction shall be provided with a strainer, chrome swivel and plug.</p> <p>The location of the valve for the two (2) inlets shall be recessed behind the pump panel.</p> <p><b><u>ADAPTER, INLET</u></b></p> <p>Two (2) adapters for the inlets shall be furnished with a special thread adapter, converting the National Standard hose thread to 3.00 x 8.. A plug shall be provided.</p> <p><b><u>INLET CONTROL</u></b></p> <p>Control for the side auxiliary inlet(s) shall be located at the inlet valve.</p> <p><b><u>INLET BLEEDER VALVE</u></b></p> <p>A .75" bleeder valve shall be provided for each side gated inlet. The valves shall be located behind the panel with a swing style handle control extended to the outside of the panel. The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. The water discharged by the bleeders shall be routed below the chassis frame rails.</p>		

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	Yes	No
<p><b><u>TANK TO PUMP</u></b>  The booster tank shall be connected to the intake side of the pump with heavy duty piping and a quarter turn 3.00" full flow line valve with the control remotely located at the operator's panel. Tank to pump line shall run straight (no elbows) from the pump into the front face of the water tank and angle down into the tank sump. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing.</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>  A 2.00" combination tank refill and pump re-circulation line shall be provided, using a quarter-turn full flow ball valve controlled from the pump operator's panel.</p> <p><b><u>DISCHARGE OUTLETS (Left Side)</u></b>  There shall be one (1) discharge outlet with a 2.50" valve on the left side of the apparatus, terminating with a male 2.50" National Standard hose thread adapter.</p> <p><b><u>DISCHARGE OUTLETS (Right Side)</u></b>  There shall be one (1) discharge outlet 2.50" valve on the right side of the apparatus, terminating with a male 2.50" National Standard hose thread adapter.</p> <p><b><u>DISCHARGE OUTLET, 4.00"</u></b>  There shall be a 4.00" discharge outlet with a 3.50" Akron Slo-Cloz valve with a 3.00" ball, installed on the right side of the apparatus, terminating with male a 4.00" National Standard hose thread adapter. This discharge outlet shall be actuated with a hand wheel control with position indicator at the pump operator's control panel.</p> <p><b><u>DISCHARGE OUTLET (Front)</u></b>  There shall be one (1) 1.50" gated discharge outlet/s, with a swivel, piped to the driver's side on top of the front bumper extension.</p> <p>Plumbing shall consist of 2.00" piping and flexible hose according to the design requirements of the chassis. A fabricated weldment made of black iron pipe shall be used in the plumbing where appropriate. A 2.00" full flow ball valve controlled at the pump operator's panel shall be used in the outlet plumbing. Automatic drains shall be provided at all low points of piping.</p> <p><b><u>DISCHARGE OUTLET (Front of Hose Bed)</u></b>  There shall be four (4) discharges located at the front of the hose bed, With the 1.5" outlets in the outboard and 2.5" outlets in the inboard locations each side.. Plumbing for the 2.50" outlet shall consist of 2.50" piping with a 2.50" full-flow ball valve, and the 1.50" outlets consisting of 2.00" piping and 2.00" full-flow ball valves. All (4) four outlets shall be controlled at the pump</p>		

Specification	Bidder Complies	
	Yes	No
<p>operator's panel. The discharges shall terminate with (2) 2.50 " and (2) 1.50" male National Standard hose thread adapter.</p> <p><b><u>DISCHARGE CAPS</u></b>            Chrome plated, rocker lug, caps with chains shall be furnished for all side discharge outlets.</p> <p>The caps shall be the VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected. (no exception)</p> <p><b><u>OUTLET BLEEDER VALVE</u></b>            A .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>ELBOWS, LEFT SIDE OUTLETS</u></b>            The 2.50" discharge outlets, located on the left side pump panel, shall be furnished with a 2.50"(F) National Standard hose thread x 2.50"(M) National Standard hose thread, chrome plated, 45 degree elbow.</p> <p>The elbow shall be the VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected. (no exception)</p> <p><b><u>ELBOWS, RIGHT SIDE OUTLETS</u></b>            The 2.50" discharge outlets, located on the right side pump panel, shall be furnished with a 2.50"(F) National Standard hose thread x 2.50"(M) National Standard hose thread, chrome plated, 45 degree elbow.</p> <p>The elbow shall be the VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected. (no exception)</p> <p><b><u>ELBOW AND CAP, LARGE DIAMETER OUTLET, PROVIDED BY DEALER</u></b>            NFPA 1901, 2009 edition, section 16.7.7 requires any 2 in. or larger discharge outlet that is located more than 42 in. off the ground and to which hose is to be</p>		

Specification	Bidder Complies	
	Yes	No
<p>connected and that is not in a hose storage area shall be supplied with a sweep elbow of at least 30 degrees downward.</p> <p>NFPA 1901, 2009 edition, section 16.7.4 requires all discharge outlet connections, except connections to which a hose shall be preconnected, shall be equipped with caps or closures capable of withstanding a hydrostatic gauge pressure of 100 psi over the maximum pump close-off pressure or 500 psi, whichever is greater.</p> <p>The elbow(s) and cap are not on the apparatus as manufactured. The dealer shall provide the elbow(s) and cap.</p> <p>There shall be four (4) adapters with 3.00 x 8 installed All 2.5" outlets..</p> <p><b><u>DISCHARGE OUTLET CONTROLS</u></b></p> <p>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.</p> <p>If a handwheel control valve is used, the control shall be a minimum of a 3.9" diameter chrome plated handwheel with a dial position indicator built in to the center of the handwheel.</p> <p><b><u>DELUGE RISER</u></b></p> <p>A 3.00" deluge riser shall be installed above the pump in such a manner that a monitor can be mounted and used effectively. Piping shall be installed securely so no movement develops when the line is charged. The riser shall be gated and controlled at the pump operator's panel.</p> <p><b><u>TELESCOPIC PIPING</u></b></p> <p>The deluge riser piping shall include a 12.00" Task Force Model XG12 Extend-A-Gun extension.</p> <p>This extension shall be telescopic to allow the deluge gun to be raised 12.00" increasing the range of operation.</p> <p>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.</p> <p>The deluge riser shall have male National Pipe Threads for mounting the monitor.</p> <p><b><u>CROSSLAY HOSE BEDS</u></b></p> <p>Two (2) crosslays with 1.50" outlets shall be provided. Each bed to be capable of carrying 200 feet of 1.75" double jacketed hose and shall be plumbed with 2.00" i.d. pipe and gated with a 2.00" quarter turn ball valve.</p>		

Specification	Bidder Complies	
	Yes	No
<p>Outlets to be equipped with a 1.50" National Standard hose thread 90 degree swivel located in the hose bed so that hose may be removed from either side of apparatus.</p> <p>The crosslay controls shall be at the pump operator's panel.</p> <p>The center crosslay dividers shall be fabricated of .25" aluminum and shall provide adjustment from side to side. The divider shall be unpainted with a brushed finish.</p> <p>Vertical scuffplates, constructed of stainless steel, shall be provided at the front and rear ends of the bed on each side of vehicle.</p> <p>Crosslay bed flooring shall consist of removable perforated brushed aluminum.</p> <p><b><u>CROSSLAY/DEADLAY HOSE RESTRAINT</u></b></p> <p>There shall be red vinyl end flap provided across each end of two (2) crosslay/deadlay opening(s) to secure the hose during travel. Each vinyl end flap shall be permanently attached at the bottom of the crosslay/deadlay opening(s). They shall be attached with velcro with jacket snaps in two (2) corners fasteners.</p> <p><b><u>CROSSLAY/DEADLAY HOSE RESTRAINT</u></b></p> <p>An aluminum treadplate cover, hinged at the back shall be installed over the top of the crosslay/deadlay(s). It shall include a latch at each end of the cover to hold it securely in place, a chrome grab handle at each end for opening and closing the cover and a foam rubber gasket where the cover comes into contact to a painted surface. The cover shall be provided with socket and plunger hold open device.</p> <p><b><u>FOAM SYSTEM</u></b></p> <p>The foam system shall be externally mounted.</p> <p><b><u>FOAM OUTLET AT PUMP PANEL</u></b></p> <p>A foam outlet shall be provided for the foam tank. The outlet shall be plumbed directly to the foam tank. The plumbing shall include a 1.00" ball valve and a 1.00" quick disconnect fitting at the panel.</p> <p>A mating quick disconnect fitting shall be shipped loose for connection with the customers foam eductor.</p> <p><b><u>FOAM TANK</u></b></p> <p>The foam tank shall be securely mounted ahead of the hose bed and shall have a capacity of 30 gallons with the intended use of Class A foam. The brand of foam stored in this tank shall be Ansul. The tank construction shall be of .50" polypropylene plastic with joints and seams nitrogen welded inside and outside. The fill tower shall be 8.00" square and contain a screen and non-foaming 4.00" diameter bottom fill tube.</p>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>FOAM TANK DRAIN</u></b> The foam tank drain shall be a 1.00" drain valve located inside the pump compartment accessible through a door on the passenger's side pump panel.</p> <p><b><u>PUMP COMPARTMENT</u></b> The pump compartment shall be separate from the hose body and compartments so that each may flex independently of the other. It shall be a fabricated assembly of steel tubing, angles and channels which supports both the fire pump and the side running boards.</p> <p>The pump compartment shall be mounted on the chassis frame rails with rubber biscuits in a four point pattern to allow for chassis frame twist.</p> <p>Pump compartment, pump, plumbing and gauge panels shall be removable from the chassis in a single assembly.</p> <p><b><u>PUMP MOUNTING</u></b> Pump shall be mounted to a substructure which shall be mounted to the chassis frame rail using rubber isolators. The mounting shall allow chassis frame rails to flex independently without damage to the fire pump.</p> <p><b><u>PUMP CONTROL PANELS (Left Side Control)</u></b> All pump controls and gauges shall be located at the left (driver's) side of the apparatus and properly identified.</p> <p>Layout of the pump control panel shall be ergonomically efficient and systematically organized.</p> <p>The pump operator's control panel shall be removable in two (2) main sections for ease of maintenance:</p> <p>The upper section shall contain sub panels for the mounting of the pump pressure control device, engine monitoring gauges, electrical switches, and foam controls (if applicable). Sub panels shall be removable from the face of the pump panel for ease of maintenance. Below the sub panels shall be located all valve controls and line pressure gauges.</p> <p>The lower section of the panel shall contain all inlets, outlets, and drains.</p> <p>All push/pull valve controls shall have 1/4 turn locking control rods with polished chrome plated zinc tee handles. Guides for the push/pull control rods shall be chrome plated zinc castings securely mounted to the pump panel. Push/pull valve controls shall be capable of locking in any position. The control rods shall pull straight out of the panel and shall be equipped with universal joints to eliminate binding.</p> <p><b><u>IDENTIFICATION TAGS</u></b> The identification tag for each valve control shall be recessed in the face of the tee handle. All discharge outlets shall have color coded identification tags,</p>		



Specification	Bidder Complies	
	Yes	No
<p>with each discharge having its own unique color. Color coding shall include the labeling of the outlet and the drain for each corresponding discharge.</p> <p>All line pressure gauges shall be mounted directly above the corresponding discharge control tee handles and recessed within the same chrome plated casting as the rod guide for quick identification. The gauge and rod guide casting shall be removable from the face of the pump panel for ease of maintenance. The casting shall be color coded to correspond with the discharge identification tag.</p> <p>All remaining identification tags shall be mounted on the pump panel in chrome plated bezels.</p> <p>The pump panel on the right (passenger's) side shall be removable with lift and turn type fasteners.</p> <p>Trim rings shall be installed around all inlets and outlets.</p> <p>The trim rings for the side discharge outlets shall be color coded and labeled to correspond with the discharge identification tag.</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 and gauge panels shall be constructed of stainless steel with a brushed finish. A polished aluminum trim molding shall be provided on both sides of the pump panel.</p> <p>The passenger's side pump panel shall be removable and fastened with swell type fasteners.</p> <p>On the front of the pump house structure, provisions shall be provided for access to the pump.</p> <p><b><u>PUMP COMPARTMENT LIGHTS</u></b></p> <p>Two (2) pump compartment lights shall be provided inside the pump enclosure and accessible through a door on the pump panel.</p> <p>A .125" weep hole shall be provided in each light lens, preventing moisture retention.</p> <p>Engine monitoring graduated LED indicators shall be incorporated with the pressure controller.</p> <p>- Pump Hour meter</p>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>AIR HORN BUTTON</u></b>  An air horn control button shall be provided at the pump operator's control panel. This button shall be properly labeled and put within easy reach of the operator.</p> <p><b><u>GAUGES, VACUUM and PRESSURE</u></b>  The pump vacuum and pressure gauges shall be liquid filled and manufactured by Class 1, Inc.</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> <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 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>  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>  An Innovative Controls electric water level indicator shall be provided on the gauge panel. The gauge shall register by means of 14 high intensity LED lights in an inverted "v" pattern. This level monitor shall indicate the following:</p> <p>- Full</p>		

Specification	Bidder Complies	
	Yes	No
<p>- 3/4</p> <p>- 1/2</p> <p>- 1/4</p> <p>- Refill</p> <p>The water level indicator shall utilize a chemical resistant PVC probe.</p> <p><b><u>WATER LEVEL GAUGE, CAB SIDES</u></b></p> <p>A water level gauge system shall be provided at One (1) each side of crew cab door to rear and as high as possible.. Each system shall be provided with four (4) Whelen, vertical mounted LED lights with flanges. The total quantity of the water level gauge systems to be provided shall be two (2).</p> <p>The following lights shall be mounted and indicate the following:</p> <p style="padding-left: 40px;">Model 50G00FGR top light with green LED light with green lens. water tank level full.</p> <p style="padding-left: 40px;">Model 50B00FBR second light with blue LED lights with blue lens. water tank level 3/4 full.</p> <p style="padding-left: 40px;">Model 50A00FAR third light with amber LED lights with amber lens. water tank level 1/2 full.</p> <p style="padding-left: 40px;">Model 50R00FRR bottom light with red LED lights with red lens. water tank level 1/4 full when on solid and shall flash when empty.</p> <p>The above system shall function similar to the standard five (5) light at the pump panel. The system shall activate parking brake is set.</p> <p><b><u>STEP/LIGHT SHIELD</u></b></p> <p>There shall be an aluminum treadplate stepping surface no less than 8.00" deep and properly reinforced to support a man's weight, installed over the pump operators panel.</p> <ul style="list-style-type: none"> <li>• There shall be 12 volt DC white LED lights installed under the step to illuminate the controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus. These lights shall be activated by the pump panel light switch. Additional lights shall be included every 18.00" depending on the size of the pump house.</li> <li>• One (1) pump panel light shall come on when the pump is in ok to pump mode. The remaining lights to be actuated from a switch located on the pump panel.</li> </ul>		

Specification	Bidder Complies	
	Yes	No
<p>There shall be a light activated above the pump panel light switch when the parking brake is set. This is to afford the operator some illumination when first approaching the control panel.</p> <p>There shall be a green pump engaged indicator light activated on at the operator's panel when the pump is shifted into gear from inside the cab.</p> <p>There shall be one (1) Ri-Tar, Model M27HW2 LED, step light provided above this step. The step light shall be activated by the pump panel light switch.</p> <p><b><u>ADDITIONAL STEP/LIGHT SHIELD</u></b></p> <p>There shall be an additional aluminum treadplate stepping surface no less than 8.00" deep and properly reinforced to support a man's weight, installed over the passenger's side pump panel.</p> <ul style="list-style-type: none"> <li>• There shall be 12 volt DC white LED lights installed under the step to illuminate the controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus. These lights shall be activated by the pump panel light switch. Additional lights shall be included every 18.00" depending on the size of the pump house.</li> </ul> <p>One (1) Ri-Tar, Model M27HW2, LED step light shall be provided. The step light shall be installed as to illuminate the top of the step for night time vision. The step light shall be activated by the pump panel light switch.</p> <p><b><u>AIR HORN SYSTEM</u></b></p> <p>Two (2) Hadley round air horns with 6.00" bell shall be provided and located, in the front bumper, recessed One (1) each side outside frame.. The horn system shall be piped to the air brake system wet tank utilizing 0.38" tubing. A pressure protection valve shall be installed in-line to prevent loss of air, in the air brake system.</p> <p><b><u>AIR HORN CONTROL</u></b></p> <p>The air horns shall be actuated by a push button located on officer side instrument panel 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>Siren head shall be located on a swivel bracket mounted on the headliner so that it is accessible to both the driver and officer. The swivel bracket shall be capable of rotating a minimum of 180 degrees.</p> <p>Siren shall be actuated by a foot switch on the officer's side and by the horn button in the steering wheel. The driver shall have the option to control the siren or the chassis horns from the horn button by means of a selector switch.</p>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>SPEAKER</u></b>  There shall be one (1) speaker provided. Each speaker shall be a Whelen, Model SA122FMP, cast aluminum, 100-watt, flange mount with polished aluminum finish. Each speaker shall be connected to the siren amplifier.</p> <p>The speaker(s) shall be recessed in the front bumper on the passenger's side.</p> <p><b><u>MECHANICAL SIREN, (Auxiliary)</u></b>  A Federal Q2B siren shall be furnished. A siren brake button shall be installed on the switch panel.</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 a push button switch. The switch shall be located on the Passenger side alongside the other switch button controls. of cab.</p> <p>A second siren brake switch shall be installed on the passenger side.</p> <p><b><u>CAB ROOF LIGHTBAR</u></b>  There shall be one (1) 72.00" Whelen Freedom, Model FN**QLED lightbar mounted on the cab roof.</p> <p>The lightbar shall include the following:</p> <ul style="list-style-type: none"> <li>• Six (6) red flashing forward facing LED modules.</li> <li>• Two (2) clear flashing forward facing LED modules.</li> <li>• Two (2) red flashing front corner LED modules.</li> <li>• One (1) red flashing driver end LED module.</li> <li>• One (1) red flashing pass end LED module.</li> </ul> <p>All the lenses shall be clear.</p> <p>There shall be one (1) switch, located in the cab on the switch panel, to control this lightbar.</p> <p>The white warning lights shall be disabled when the parking brake is set.</p> <p><b><u>WARNING LIGHTS (CAB ROOF SIDES)</u></b>  Two (2) 24.00" Whelen, Freedom, Mini LED lightbars shall be mounted on the roof, one (1) on each side, over the crew cab doors.</p> <p>Each lightbar shall include the following:</p>		

Specification	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <li>• Two (2) red flashing corner LED modules</li> <li>• Two (2) red flashing LED lights</li> </ul> <p>These lightbars shall be controlled by the roof light switch.</p> <p>Each lightbar shall be furnished with a clear lens.</p> <p><b><u>WARNING LIGHTS (CAB ROOF SIDES)</u></b></p> <p>Two (2) 24" Whelen, Model: Freedom Mini LED lightbars shall be mounted on the roof, one (1) on each side, over the cab doors.</p> <p>Each lightbar shall include the following:</p> <ul style="list-style-type: none"> <li>• Two (2) red flashing corner LED modules.</li> <li>• Two (2) red flashing LED light.</li> </ul> <p>These lightbars shall be controlled by the roof light switch.</p> <p>Each lightbar shall be furnished with a clear lens.</p> <p><b><u>WARNING LIGHTS (Cab Face)</u></b></p> <p>Two (2) pair of Whelen model 60*00F*R LED lights shall be installed on the cab face, above the headlights, mounted in a common bezel.</p> <p>The outer LEDS shall be required for NFPA and shall meet or exceed the NFPA required light output for the front lower zone.</p> <p style="padding-left: 40px;">The color of these LEDs shall be red Super LED/red lens.</p> <p>The inner LEDs shall be additional lighting.</p> <p style="padding-left: 40px;">The color of these lights shall be two (2) clear Super LED, one (1) each side.</p> <p>Both sets of lights shall be activated by the same switch in the cab.</p> <p><b><u>DAYTIME RUNNING LIGHTS (HEADLIGHTS)</u></b></p> <p>The high-beam headlights used as daytime running lights shall be activated with the following measures:</p> <ul style="list-style-type: none"> <li>• Ignition switch is turned on.</li> <li>• Parking brake is released.</li> </ul> <p>These lights shall be deactivated with any one of the following measures:</p> <ul style="list-style-type: none"> <li>• Headlight switch is turned on.</li> <li>• High-beam flash is turned on.</li> <li>• Parking brake is set.</li> </ul>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>HEADLIGHT FLASHER</u></b></p> <p>The high beam headlights shall flash alternately between the left and right side, with a control switch located on the cab instrument panel.</p> <p>The flashing shall automatically cancel when the headlight switch is activated or when the parking brake is set.</p> <p><b><u>SIDE ZONE LOWER LIGHTING</u></b></p> <p>Six (6) flashing super LED lights shall be located at the following positions:</p> <p style="padding-left: 40px;">Two (2) lights, one (1) each side on the bumper extension - red Super LED/red lens each side.</p> <p style="padding-left: 40px;">Two (2) lights, On sides of crew cab rear of crew cab doors. - red Super LED/red lens each side.</p> <p style="padding-left: 40px;">Two (2) lights, Centered over rear wheels. - red Super LED/red lens each side.</p> <p>The lights shall be controlled by a lighted switch on the cab instrument panel.</p> <p>These lights shall be installed with three (3) pairs of flange kits.</p> <p><b><u>REAR ZONE LOWER LIGHTING</u></b></p> <p>Two (2) Whelen model 60*02F*R flashing "Super" LED warning lights shall be located at the rear of the apparatus, required to meet or exceed the lower level optical warning and optical power requirements of NFPA.</p> <p>The color of these lights shall be red Super LED/red lens.</p> <p>One (1) switch in the cab on the switch panel shall control these lights.</p> <p>These lights shall be installed with a flange.</p> <p><b><u>LIGHT, REAR UPPER ZONE, BLOCKING</u></b></p> <p>Two (2) Whelen Model 60*02F*R, super LED lights shall be provided at the rear of apparatus at a level of 62.00" or higher, Rear compt. bulkheads as high as possible. lights.</p> <p>The color of these lights shall be blue Super LED/blue lens.</p> <p>The lights shall be activated by a separate switch in the cab and when the parking break is applied.</p> <p>These lights shall be installed with a flange.</p> <p><b><u>WARNING LIGHTS (Rear of Hose Bed)</u></b></p> <p>Two (2) Whelen L31H*F LED warning beacons shall be provided at the rear of the truck, located one (1) each side. These lights shall be activated by a lighted switch on the instrument panel.</p>		

Specification	Bidder Complies	
	Yes	No
<p>The color of the driver side LED light shall be red and the passenger side LED light shall be amber. The dome colors shall be driver side dome red and passenger side dome amber.</p> <p>The rear warning lights shall be mounted on top of the compartmentation with all wiring totally enclosed. The rear deck lights shall be mounted on the beavertails high as possible.</p> <p><b><u>TRAFFIC DIRECTING LIGHT</u></b></p> <p>There shall be one (1) Whelen Model TA637A 33.00" long x 2.46" high x 4.41" deep, halogen traffic directing light installed at the rear of the apparatus.</p> <p>The Whelen model TACTRL1A control head shall be included with this installation.</p> <p>The auxiliary warning mode shall be activated with the control head only.</p> <p>This traffic directing light shall be recessed with a stainless steel trim plate at the rear of the apparatus as high as practical.</p> <p>The traffic directing light control head shall be located in the driver side overhead switch panel in the right panel position.</p> <p><b><u>ELECTRICAL SYSTEM GENERAL DESIGN for ALTERNATING CURRENT</u></b></p> <p>The following guidelines shall apply to the 120/240 VAC system installation:</p> <p><u>General</u></p> <p>Any fixed line voltage power source producing alternating current (ac) line voltage shall produce electric power at 60 cycles plus or minus 5 cycles.</p> <p>Except where superseded by the requirements of NFPA 1901, all components, equipment and installation procedures shall conform to NFPA 70, National Electrical Code (herein referred to as the NEC).</p> <p>Line voltage electrical system equipment and materials included on the apparatus shall be listed and installed in accordance with the manufacturer's instructions. All products shall be used only in the manner for which they have been listed.</p> <p><u>Grounding</u></p> <p>Grounding shall be in accordance with Section 250-6 "Portable and Vehicle Mounted Generators" of the NEC. Ungrounded systems shall not be used. Only stranded or braided copper conductors shall be used for grounding and bonding.</p> <p>An equipment grounding means shall be provided in accordance with Section 250-91 (Grounding Conductor Material) of the NEC.</p>		



Specification	Bidder Complies	
	Yes	No
<p>The grounded current carrying conductor (neutral) shall be insulated from the equipment grounding conductors and from the equipment enclosures and other grounded parts. The neutral conductor shall be colored white or gray in accordance with Section 200-6 (Means of Identifying Grounding Conductors) of the NEC.</p> <p>In addition to the bonding required for the low voltage return current, each body and driving or crew compartment enclosure shall be bonded to the vehicle frame by a copper conductor. This conductor shall have a minimum amperage rating of 115 percent of the nameplate current rating of the power source specification label as defined in Section 310-15 (amp capacities) of the NEC. A single conductor properly sized to meet the low voltage and line voltage requirements shall be permitted to be used.</p> <p>All power source system mechanical and electrical components shall be sized to support the continuous duty nameplate rating of the power source.</p> <p><u>Operation</u></p> <p>Instructions that provide the operator with the essential power source operating instructions, including the power-up and power-down sequence, shall be permanently attached to the apparatus at any point where such operations can take place.</p> <p>Provisions shall be made for quickly and easily placing the power source into operation. The control shall be marked to indicate when it is correctly positioned for power source operation. Any control device used in the drive train shall be equipped with a means to prevent the unintentional movement of the control device from its set position.</p> <p>A power source specification label shall be permanently attached to the apparatus near the operator's control station. The label shall provide the operator with the information detailed in Figure 19-4.10.</p> <p>Direct drive (PTO) and portable generator installations shall comply with Article 445 (Generators) of the NEC.</p> <p><u>Overcurrent protection</u></p> <p>The conductors used in the power supply assembly between the output terminals of the power source and the main over current protection device shall not exceed 144 inches. (3658 mm) in length.</p> <p>For fixed power supplies, all conductors in the power supply assembly shall be type THHW, THW, or use stranded conductors enclosed in nonmetallic liquid tight flexible conduit rated for a minimum of 194 degree Fahrenheit (90 degrees Celsius).</p> <p>For portable power supplies, conductors located between the power source and the line side of the main overcurrent protection device shall be type SO or type SEO with suffix WA flexible cord rated for 600-volts at 194 degrees Fahrenheit (90 degrees Celsius).</p>		

Specification	Bidder Complies	
	Yes	No
<p><u>Wiring Methods</u></p> <p>Fixed wiring systems shall be limited to the following:</p> <ul style="list-style-type: none"> <li>- Metallic or nonmetallic liquid tight flexible conduit rated at not less than 194 degrees Fahrenheit (90 degrees Celsius)</li> </ul> <p style="text-align: center;">or</p> <ul style="list-style-type: none"> <li>- Type SO or Type SEO cord with a WA suffix, rated at 600 volts at not less than 194 degrees Fahrenheit (90 degrees Celsius)</li> </ul> <p>Electrical cord or conduit shall not be attached to chassis suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components, or low voltage wiring. In addition the wiring shall be run as follows.</p> <ul style="list-style-type: none"> <li>- Separated by a minimum of 12 inches (305 mm), or properly shielded, from exhaust piping</li> <li>- Separated from fuel lines by a minimum of six (6) inches (152 mm) distance.</li> </ul> <p>Electrical cord or conduit shall be supported within six (6) inches (152 mm) of any junction box and at a minimum of every 24 inches (610 mm) of continuous run. Supports shall be made of nonmetallic materials or corrosion protected metal. All supports shall be of a design that does not cut or abrade the conduit or cable and shall be mechanically fastened to the vehicle.</p> <p><u>Wiring Identification</u></p> <p>All line voltage conductors located in the main panel board shall be individually and permanently identified. The identification shall reference the wiring schematic or indicate the final termination point. When prewiring for future power sources or devices, the unterminated ends shall be labeled showing function and wire size.</p> <p><u>Wet Locations</u></p> <p>All wet location receptacle outlets and inlet devices, including those on hardwired remote power distribution boxes, shall be of the grounding type provided with a wet location cover and installed in accordance with Section 210-7 "Receptacles and Cord Connections" of the NEC.</p> <p>All receptacles located in a wet location shall be not less than 24 inches (610 mm) from the ground. Receptacles on off-road vehicles shall be a minimum of 30 inches (762 mm) from the ground.</p> <p>The face of any wet location receptacle shall be installed in a plane from vertical to not more than 45 degrees off vertical. No receptacle shall be installed in a face up position.</p> <p><u>Dry Locations</u></p>		

Specification	Bidder Complies	
	Yes	No
<p>All receptacles located in a dry location shall be of the grounding type. Receptacles shall be not less than 30 inches (762 mm) above the interior floor height.</p> <p>All receptacles shall be marked with the type of line voltage (120-volts or 240-volts) and the current rating in amps. If the receptacles are direct current, or other than single phase, they shall be so marked.</p> <p><u>Listing</u></p> <p>All receptacles and electrical inlet devices shall be listed to UL 498, Standard for Safety Attachment Plugs and Receptacles, or other appropriate performance standards. Receptacles used for direct current voltages shall be rated for the appropriate service.</p> <p><u>Electrical System Testing</u></p> <p>The wiring and associated equipment shall be tested by the apparatus manufacturer or the installer of the line voltage system.</p> <p>The wiring and permanently connected devices and equipment shall be subjected to a dielectric voltage withstand test of 900-volts for one (1) minute. The test shall be conducted between live parts and the neutral conductor, and between live parts and the vehicle frame with any switches in the circuit(s) closed. This test shall be conducted after all body work has been completed.</p> <p>Electrical polarity verification shall be made of all permanently wired equipment and receptacles to determine that connections have been properly made.</p> <p><u>Operational Test per Current NFPA 1901 Standard</u></p> <p>The apparatus manufacturer shall perform the following operation test and ensure that the power source and any devices that are attached to the line voltage electrical system are properly connected and in working order. The test shall be witnessed and the results certified by Underwriters Laboratories.</p> <p>The prime mover shall be started from a cold start condition and the line voltage electrical system loaded to 100 percent of the nameplate rating.</p> <p>The power source shall be operated at 100 percent of its nameplate voltage for a minimum of two (2) hours unless the system meets category certification as defined in the current NFPA 1901 standard.</p> <p>Where the line voltage power is derived from the vehicle's low voltage system, the minimum continuous electrical load as defined in the current NFPA 1901 standard shall be applied to the low voltage electrical system during the operational test.</p>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>GENERATOR</u></b>  There shall be one (1) Honda Model EM5000 or equivalent series gas powered portable generator with a continuous rating of 4,500 watts, provided.</p> <p>This generator shall include the electric start capabilities.</p> <p><b><u>GENERATOR</u></b>  The generator shall be mounted in the R-1. on a sliding tray. The slides, used for the tray, shall be ball bearing type with a capacity rating matched to the weight of the generator. Locking mechanisms shall be provided for holding the generator in the extended and stored positions.</p> <p><b><u>ELECTRIC START PROVISION</u></b>  Electric start provisions shall be furnished for the generator from the chassis battery system.</p> <p><b><u>CIRCUIT BREAKER PANEL</u></b>  A circuit breaker panel shall be installed in the D - 3 front bulkhead wall.. A directory for each breaker shall be provided adjacent to the circuit breaker panel. Identification of circuits shall be done in a durable manner that provides years of service.</p> <p><b><u>CUP HOLDER</u></b>  A cup holder shall be provided for the Two (2) to securely hold the push-up pole in place while in the lower position.</p> <p><b><u>120 VOLT LIGHTING</u></b>  The apparatus shall be equipped with a side mounting, telescoping bottom raise Fire Research Model FC530-S50 quartz tube floodlight. The telescoping pole shall be as long as is practical to fit in the location it is mounted.</p> <p>The light fixture shall be a single 500 watt, 120 volt Focus light that draws 4.2 amps.</p> <p>The lamp head shall swivel 360 degrees left or right and tilt up and down. All wiring used up to the junction box shall be a minimum of 14 gauge 3 wire cable that is properly supported and protected from damage.</p> <p>A total of Two (2) shall be provided One (1) on rear of cab each side. - Please add rubber bumpers on back of cab to protect from rubbing light head to cab wall nad wire to inside to prevent wires from becoming torn off by trees..</p> <p><b><u>LIGHT POLE GUARD</u></b>  A polished stainless steel guard shall be provided at the rear of the cab to cover the light pole for a telescoping floodlight. This guard shall provide protection for the pole from any damage that may be caused by the hose couplings during removal of hose from the crosslay hose beds.</p>		

Specification	Bidder Complies	
	Yes	No
<p>There shall be a total of two (2) guards provided.</p> <p><b><u>20 AMP RECEPTACLE</u></b>  Wired to the power supply shall be two (2) receptacles that are a 120 volt 20 amp three wire twist-lock NEMA L5-20 type with weather resisting cover located Driver and officer side wheel well forward areas..</p> <p><b><u>LOOSE EQUIPMENT</u></b>  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>  The following loose equipment as outlined in NFPA 1901, 2009 edition, section 5.8.2 and 5.8.3 shall be provided by the fire department. All loose equipment shall be installed on the apparatus before placed in emergency service, unless the fire department waives NFPA section 4.21.</p> <ul style="list-style-type: none"> <li>- 800 ft (60 m) of 2½" (65 mm) or larger fire hose.</li> <li>- 400 ft (120 m) of 1½" (38 mm), 1¾" (45 mm), or 2" (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) playpipe with shutoff and 1" (25 mm), 1 1/8" (29 mm), and 1¼" (32 mm) tips.</li> <li>- One (6) SCBA complying with NFPA 1981, <i>Standard on Open-Circuit Self-Contained Breathing Apparatus for Fire and Emergency Services</i>, 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 mounted in bracket(s) fastened to the apparatus.</li> <li>- Two (2) hydrant wrenches mounted in brackets fastened to the apparatus.</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> </ul>		

Specification	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <li>- One (1) double female 2½" (65 mm) adapter with National Hose threads, mounted in a bracket fastened to the apparatus.</li> <li>- One (1) double male 2½" (65 mm) adapter with National Hose threads, mounted in a bracket fastened to the apparatus.</li> <li>- One (1) rubber mallet, for use on suction hose connections, mounted in a bracket fastened to the apparatus.</li> <li>- Two (2) salvage covers each a minimum size of 12 ft × 14 ft (3.7 m × 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 at the shoulders, two at the sides, and one at the front.</li> <li>- Five (5) fluorescent orange traffic cones not less than 28" (711 mm) in height, each equipped with a 6" (152 mm) retro-reflective white band no more than 4" (152 mm) from the top of the cone, and an additional 4" (102 mm) retro-reflective white band 2" (51 mm) below the 6" (152 mm) band.</li> <li>- Five (5) illuminated warning devices such as highway flares, unless the five (5) fluorescent orange traffic cones have illuminating capabilities.</li> <li>- One automatic external defibrillator (AED).</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 in. (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 2½" National Hose (NH) intake, an adapter from 2½" 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 2½" National Hose (NH) threads, adapters shall be carried to allow feeding the supply hose from a 2½" NH thread male discharge and to allow the hose to connect to a 2½" 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>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>STRAINER, PROVIDED BY FIRE DEPARTMENT</u></b>  NFPA 1901, 2009 edition, section 5.7.2.1.1 requires a suction strainer when suction hose is provided.</p> <p>The strainer is not on the apparatus as manufactured. The fire department shall provide the suction strainer.</p>		
<p><b><u>DRY CHEMICAL EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u></b>  NFPA 1901, 2009 edition, section 5.8.3 requires one (1) approved dry chemical portable fire extinguisher with a minimum 80-B:C rating mounted in a bracket fastened to the apparatus.</p> <p>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, 2009 edition, section 5.8.3 requires one (1) 2.5 gallon or larger water extinguisher mounted in a bracket fastened to the apparatus.</p> <p>The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.</p>		
<p><b><u>AXE, FLATHEAD, PROVIDED BY FIRE DEPARTMENT</u></b>  NFPA 1901, 2009 edition, Section 5.8.3 requires one (1) flathead 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>AXE, PICKHEAD, PROVIDED BY FIRE DEPARTMENT</u></b>  NFPA 1901, 2009 edition, Section 5.8.3 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>  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. Surfaces that shall not be painted include all chrome plated, polished stainless steel, anodized aluminum and bright aluminum treadplate. Each imperfection on the exterior metal surface shall be removed or filled and then sanded smooth for a smooth appearance. All seams shall be sealed before painting.</li> </ol>		

Specification	Bidder Complies	
	Yes	No
<p>2. <u>Chemical Cleaning and Treatment</u> - The metal surfaces shall be properly cleaned using a high pressure and high temperature cleaning system. Surfaces are chemically cleaned to remove all dirt, oil, grease and metal oxides to ensure the subsequent coatings bond well. An ultra pure water final rinse shall be applied to all metal surfaces at the conclusion of the metal treatment process.</p> <p>3. <u>Primer/Surfacer Coats</u> - A two (2) component urethane primer/surfacer shall be hand applied to the chemically treated metal surfaces to provide a strong corrosion protective base coat and to smooth out the surface.</p> <p>4. <u>Hand Sanding</u> - The primer/surfacer coat shall be lightly sanded to an ultra smooth finish.</p> <p>5. <u>Sealer Primer Coat</u> - A two (2) component sealer primer coat shall be applied over the sanded primer.</p> <p>6. <u>Topcoat Paint</u> - Urethane base coat shall be applied to opacity for correct color matching.</p> <p>7. <u>Clearcoat</u> - Two (2) coats of an automotive grade two (2) component urethane shall be applied. Lap style doors shall be clear coated to match the body. Roll-up doors shall not be clear coated and the standard roll-up door warranty shall apply.</p> <p>All removable items such as brackets, compartment doors, door hinges, trim, etc. shall be removed and painted separately to insure paint behind all mounted items. Body assemblies that can not be finish painted after assembly shall be finish painted before assembly.</p> <p>The cab shall be two-tone, with the upper section and a special shield design painted White # 20 upper with special shield to match previous units 19606,18400,22324, 22911, &amp; 24737., with lower section of the cab and body painted Red # 100 lower cab and body to match previous units 19606, 18400, 20881, 22324, 22911, &amp; 24737.. Paint break and shield design to be clarified on the lettering and striping print.</p> <p><b><u>PAINT - ENVIRONMENTAL IMPACT</u></b></p> <p>Contractor shall meet or exceed all current State (his) 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 means is used, it shall have</li> </ul>		



Specification	Bidder Complies	
	Yes	No
<p>an efficiency rating of 98.00%. Water wash systems shall be 99.97% efficient.</p> <ul style="list-style-type: none"> <li>- Water from water wash booths shall be reused. Solids shall be removed mechanically on a continual basis to keep the water clean.</li> <li>- Paint wastes are disposed of in an environmentally safe manner. They are used as fuel in kilns used in the cement manufacturing process - thereby extracting energy from a waste material.</li> <li>- Empty metal paint containers shall be cleaned, crushed and recycled to recover the metal.</li> <li>- Solvents used in cleanup operations shall be collected, recycled on-site, or sent off-site for distillation and returned for reuse. Residue from the distillation operation shall be used as fuel in off-site cement kilns.</li> </ul> <p>Additionally, the finished apparatus shall not be manufactured with or contain products that have ozone depleting substances. Contractor shall, upon demand, present evidence that his manufacturing facility meets the above conditions and that it is in compliance with his State EPA rules and regulations.</p> <p><b><u>PAINT CHASSIS FRAME ASSEMBLY</u></b></p> <p>The chassis frame assembly shall be painted black 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 black are frame rails, cross members, axles, suspension, steering gear, fuel tank, body substructure supports, miscellaneous mounting brackets, etc.</p> <p><b><u>PAINTED AIR CONDITIONING COVER</u></b></p> <p>The cover of the air conditioning condenser shall be painted to match the color of the cab roof.</p> <p><b><u>PAINT, COMPARTMENT INTERIOR</u></b></p> <p>Interior of compartmentation shall be painted with a gray spatter type paint.</p> <p><b><u>REFLECTIVE STRIPES</u></b></p> <p>Three (3) reflective stripes shall be provided along the sides of the cab and body. The reflective band shall consist of a 1.00"-6.00"-1.00" ruby red stripe on the cab and body, with a 1.00"-6.00"-1.00" white stripe on the roll-up doors. All striping shall include a 1.00" gap between stripes.</p> <p>The reflective band provided on the cab face shall be at the headlight level.</p>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>CHEVRON STRIPING, REAR</u></b>  There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus. The rear surface, excluding the rear compartment door, shall be covered.</p> <p><b><u>The colors shall be red and fluorescent yellow green diamond grade.</u></b></p> <p>Each stripe shall be 6.00" in width.</p> <p>This shall meet the requirements of NFPA 1901, 2009 edition, which states that 50% of the rear surface shall be covered with chevron striping.</p> <p><b><u>JOG(S) IN REFLECTIVE BAND</u></b>  The reflective band located on each side of the apparatus body shall contain one (1) jog(s) and shall be angled at approximately a 45 degrees when installed.</p> <p><b><u>OUTLINE, REFLECTIVE STRIPE</u></b>  A Gold Metallic outline shall be applied on the top and the bottom of the reflective band. There shall be one (1) set of outline stripes required.</p> <p><b><u>4" ADDITIONAL REFLECTIVE STRIPE</u></b>  An additional 4.00" yellow diamond grade and red diamond grade reflective striping shall be provided on the front bumper corners.</p> <p><b><u>STOP SIGN, REFLECTIVE, CAB DOORS</u></b>  A 12.00" x 12.00" reflective stop sign shall be provided on the interior of each cab door. The stop sign shall be located on the stainless steel door panel.</p> <p>This sign shall meet the NFPA 1901 requirement.</p> <p><b><u>CAB FACE STRIPE</u></b>  There shall be a Sign Gold stripe across the face of the cab.</p> <p><b><u>LETTERING</u></b>  The lettering shall be 22 karat gold vinyl.</p> <p><b><u>LETTERING</u></b>  There shall be sign gold lettering, 3.00" high, with outline and shade provided. There shall be nine (9) letters provided.</p> <p><b><u>LETTERING</u></b>  There shall be reflective lettering, 12.00" high, with outline and shade provided. There shall be three (3) letters provided.</p> <p><b><u>LETTERING</u></b>  There shall be sign gold lettering, 2.00" high, with outline and shade provided. There shall be six (6) letters provided.</p>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>LETTERING</u></b> There shall be reflective lettering, 3.00" high, with outline and shade provided. There shall be six (6) letters provided.</p> <p><b><u>LETTERING</u></b> There shall be sign gold lettering, 6.00" high, with outline and shade provided. There shall be four (4) letters provided.</p> <p><b><u>LETTERING</u></b> There shall be sign gold lettering, 5.00" high, with outline provided. There shall be three (3) letters provided.</p> <p><b><u>LETTERING</u></b> Twenty-one (21) to forty (40) Sign Gold lettering, 6.00" high, with outline and shade shall be provided.</p> <p><b><u>LETTERING</u></b> There shall be reflective lettering, 5.00" high, with outline and shade provided. There shall be nine (9) letters provided.</p> <p><b><u>LETTERING</u></b> One (1) to twenty (20) Sign Gold lettering, 4.00" high, with outline and shade shall be provided.</p> <p><b><u>REFLECTIVE LETTERING ON PLATE</u></b> There shall be one (1) set(s) of reflective lettering, "KEEP BACK 500 FEET", supplied and installed on the DS to read "Keep Back" / PS to read "500 Feet" on white reflective plate on angled beavertail rear of truck. plate on the rear bulkhead . The lettering shall be ruby red in color. The outline shall be black in color.</p> <p><b><u>EMBLEM SEAL</u></b> There shall be one (1) pair of reflective emblem seals furnished and installed Cab doors..</p> <p><b><u>EMBLEM</u></b> There shall be one (1) pair of emblems with a Helmet logo, 343 in the band, and "M" in shield (see media attached). The emblem shall be located D-2 / P-2..</p> <p><b><u>MANUAL, FIRE APPARATUS PARTS</u></b> Two (2) custom parts manuals for the complete fire apparatus shall be provided in hard copy with the completed unit.  The manual shall contain the following:  - Job number</p>		

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	Yes	No
<ul style="list-style-type: none"> <li>- Part numbers with full descriptions</li> <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 a part</li> </ul> <p>The manual 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 this manual is 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>MANUALS, CHASSIS SERVICE</u></b></p> <p>Two (2) chassis service manuals containing parts and service information on major components shall be provided with the completed unit.</p> <p>The manuals 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>		

Specification	Bidder Complies	
	Yes	No
<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>MANUALS, CHASSIS OPERATION</u></b> Two (2) chassis operation manuals shall be provided.</p> <p><b><u>ONE (1) YEAR MATERIAL AND WORKMANSHIP</u></b> Each new piece of apparatus shall be provided with a minimum one (1) year basic apparatus material and workmanship limited warranty. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.</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> A Detroit or Cummins Diesel five (5) year 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> A TRW one (1) year 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> The chassis frame shall be provided with a fifty (50) year 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> A Meritor™ Axle 2 year limited warranty shall be provided.</p> <p><b><u>REAR AXLE TWO (2) YEAR MATERIAL AND WORKMANSHIP WARRANTY</u></b> A Meritor™ Axle 2 year limited warranty shall be provided.</p>		

Specification	Bidder Complies	
	Yes	No
<p><b><u>TEN (10) YEAR STRUCTURAL INTEGRITY</u></b>  The new cab shall be provided with a ten (10) year 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>  Each new piece of apparatus shall be provided with a ten (10) year 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> <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>LIFETIME MATERIAL AND WORKMANSHIP</u></b>  The UPF poly water tank shall be provided with a lifetime material and workmanship limited warranty.</p> <p>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 ten (10) year material and workmanship limited warranty on the apparatus body. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.</p> <p>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>  A Gortite roll-up door limited warranty shall be provided. The mechanical components of the roll-up door shall be warranted against defects in material and workmanship for the lifetime of the vehicle. A six (6) year limited warranty shall be provided on painted and satin roll up doors.</p> <p>A copy of the warranty certificate shall be submitted with the bid package.</p>		

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	Yes	No
<p><b><u>PUMP WARRANTY</u></b> A Waterous five (5) year warranty shall be provided for the pump.</p> <p><b><u>PUMP PLUMBING WARRANTY</u></b> 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. A copy of the warranty shall be submitted with the bid. (no exception)</p> <p><b><u>TEN (10) YEAR PRO-RATED PAINT AND CORROSION</u></b> Each new piece of apparatus shall be provided with a ten (10) year pro-rated paint and corrosion limited warranty on the apparatus body. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.  A copy of the warranty certificate shall be submitted with the bid package (No Exception).</p> <p><b><u>ONE (1) YEAR MATERIAL AND WORKMANSHIP</u></b> The graphic lamination shall be provided with a one (1) year material and workmanship limited warranty. The warranty shall cover the graphic lamination as being free from defects in material, workmanship, fading, and deterioration 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>VEHICLE STABILITY CERTIFICATION</u></b> 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> 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 bid.</p> <p><b><u>POWER STEERING CERTIFICATION</u></b> 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>		

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	Yes	No
<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 states that the cab must 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> <li>- Roof Crush</li> </ul> <p>The cab shall be subjected to a roof crush force of 100,000 lb. This value shall be 450 percent of the ECE 29 criteria, which must be equivalent to the front axle rating up to a maximum of ten (10) metric tons.</p> <ul style="list-style-type: none"> <li>- Side Impact</li> </ul> <p>The cab shall be subjected to dynamic preload with 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 energy. This test shall closely represent the forces a cab shall see in a rollover incident.</p> <ul style="list-style-type: none"> <li>- Frontal Impact</li> </ul> <p>The cab shall withstand a frontal force produced from 65,200 ft-lb of energy using a swing-bob type platen.</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 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.</p> <p><b><u>WINDSHIELD WIPER DURABILITY CERTIFICATION</u></b></p> <p>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 <i>Windshield Wiper Systems - Trucks, Buses and Multipurpose Vehicles</i>. The bidder shall certify that the wiper system design has been tested and that the wiper system has met these criteria.</p>		



Specification	Bidder Complies	
	Yes	No
<p><b><u>SEAT BELT ANCHOR STRENGTH</u></b>            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.</p> <p><b><u>SEAT MOUNTING STRENGTH</u></b>            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 that each seat mount and cab structure design was pull tested to the required force and met the appropriate criteria.</p> <p><b><u>CAB DEFROSTER CERTIFICATION</u></b>            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 Multipurpose Vehicles. The bidder shall certify that the defrost system design has been tested in a cold chamber and passes the SAE J381 criteria.</p> <p><b><u>CAB HEATER CERTIFICATION</u></b>            Good cab heat performance and regulation provides a more effective working environment for personnel, whether in-transit, or at a scene. The cab heaters shall warm the cab 77 F from a cold-soak, within 30 minutes when tested using the coolant supply methods found in SAE J381. The bidder shall certify that a substantially similar cab has been tested and has met these criteria.</p> <p><b><u>AMP DRAW REPORT</u></b>            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.</p> <p>The manufacturer of the apparatus shall provide the following:</p> <ol style="list-style-type: none"> <li>1) Documentation of the electrical system performance tests.</li> <li>2) A written load analysis, which shall include the following:               <ol style="list-style-type: none"> <li>A) The nameplate rating of the alternator.</li> <li>B) The alternator rating under the conditions specified per:                    Applicable NFPA 1901 or 1906 (Current Edition).</li> <li>C) The minimum continuous load of each component that is specified per:</li> </ol> </li> </ol>		

Specification	Bidder Complies	
	Yes	No
<p>Applicable NFPA 1901 or 1906 (Current Edition).</p> <p>D) Additional loads that, when added to the minimum continuous load, determine the total connected load.</p> <p>E) Each individual intermittent load.</p> <p>All of the above listed items shall be provided by the bidder per the applicable NFPA 1901 or 1906 (Current Edition).</p>		