

	Bidder Complies	
	Yes	No
<p style="text-align: center;"><u>SPECIFICATIONS FOR A MULTI PURPOSE RESPONSE VEHICLE</u></p> <p>Sealed bids will be received by city of negaunee fire for the furnishing of all necessary labor, equipment and material for the Fire Apparatus and other equipment as outlined in the following specifications.</p> <p><u>INTENT OF SPECIFICATIONS</u></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, finish, equipment and tests to which the fire apparatus shall conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor.</p> <p>Images and illustrative material in this specification are as accurate as known at the time of publication, but are subject to change without notice. Images and illustrative material is for reference only, and may include optional equipment and accessories and may not include all standard equipment.</p> <p><u>INSTRUCTIONS TO BIDDERS</u></p> <p>The purchaser's standards for bidding automotive fire apparatus must be strictly adhered to, and all bid forms and questions must be complete and submitted with the bid. Omissions and variations shall result in immediate rejection of the bid.</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. Furthermore, in order to insure fair, ethical, and legal competition, neither the original equipment manufacturer (O.E.M.) nor parent company of the O.E.M. shall have ever been fined or convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market (no exception).</p> <p>If a bidder represents more than one fire apparatus company or brands of apparatus, they must only bid the top of the line that meets specification.</p> <p>Each bidder shall furnish satisfactory evidence of their ability to construct the apparatus specified.</p> <p>Any apparatus manufacturer or their parent company who has had a performance bond called in the last 10 years, shall not be eligible to bid. Any bids from these manufactures shall be immediately rejected (no exception).</p> <p>Each bid shall be accompanied by a set of manufacturer's set of specifications consisting of a detailed description of the apparatus, construction methods, and equipment proposed to which the apparatus furnished under contract shall conform. These specifications shall indicate size, type, model and make of all components parts and equipment, providing proof of compliance</p>		

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

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<p>Proposals that are found to have deviations without listing them or bids taking total exceptions to these advertised specifications will be rejected (no exception).</p> <p>Bids not including all exceptions is a material breach and shall result in the bid being immediately rejected (no exception).</p> <p><u>GENERAL DESIGN AND CONSTRUCTION</u></p> <p>The cab, chassis, pump module, and body are to be entirely designed, assembled and painted by the prime vehicle manufacturer, which minimizes third party involvement on engineering, design, service and warranty issues.</p> <p>All bidders shall provide a list of the company, manufacturing location, and engineering source for each individual major component, including but not limited to the welded cab assembly, the pumphouse module assembly, the chassis assembly, body and electrical system. Apparatus using any subcontracted cab, chassis, pump module, electrical system or body will not be acceptable.</p> <p>The apparatus shall be designed with due consideration to distribution of load between the front and rear axles. Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Association.</p> <p>The bidder shall make accurate statements as to the apparatus weight and dimensions.</p> <p><u>QUALITY AND WORKMANSHIP</u></p> <p>All steel welding shall follow American welding Society D1.1-2004 recommendations for structural steel welding. All aluminum welding shall follow American welding Society and ANSI D1.2-2003 requirements for structural welding of aluminum. All sheet metal welding shall follow American Welding Society B2.1-2000 requirements for structural welding of sheet metal. Flux core arc welding to use alloy rods, type 7000, American welding Society standards A5.20-E70T1. Employees classified as welders are tested and certified to meet the American Welding Society codes upon hire and every three (3) years thereafter. The manufacturer shall be required to have an American welding Society certified welding inspector in plant during working hours to monitor weld quality.</p> <p>The manufacturer shall also be certified to operate a Quality Management System under the requirements of ISO 9001. These standards sponsored by the International organization for Standardization (ISO) specify the quality systems that shall be established by the manufacturer for design, manufacture, installation and service. A copy of the certificate of compliance shall be included with the bid.</p> <p>To demonstrate the quality of the product and service, each bidder shall provide a list of at least two (2) fire departments/municipalities in the region that have bought a second time from the representing dealer. An exception to this requirement shall not be acceptable.</p>		

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<p><u>DELIVERY</u></p> <p>Apparatus, to insure proper break in of all components while still under warranty, shall be delivered under its own power - rail or truck freight shall not be acceptable. A qualified delivery representative shall deliver the apparatus and remain for a sufficient length of time to instruct personnel in proper operation, care and maintenance of the equipment delivered.</p> <p><u>MANUALS AND SERVICE INFORMATION</u></p> <p>The manufacturer shall supply at time of delivery, complete operation and maintenance manuals covering the complete apparatus as delivered. A permanent plate shall be mounted in the drivers compartment which specifies the quantity and type of fluid required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.</p> <p><u>SAFETY VIDEO</u></p> <p>Since video is much more effective than written documentation and can be replayed for new personnel and as a refresher for existing personnel, an apparatus safety video, in DVD format shall be provided at time of delivery. This video shall address key safety considerations for personnel to follow when they are driving, operating, and maintaining the apparatus. Safety procedures for the following shall be included on the video: vehicle pre trip inspection, chassis operation, pump operation and maintenance.</p> <p><u>PERFORMANCE TESTS AND REQUIREMENTS</u></p> <p>A road test shall be conducted with the apparatus fully loaded and a continuous run of ten (10) miles or more shall be made under all driving conditions, during which time the apparatus shall show no loss of power or overheating. The transmission drive shaft or shafts, and rear axle shall run quietly and be free from abnormal vibration or noise throughout the operating range of the apparatus. Vehicle shall adhere to the following parameters:</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> <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 the governed rpm (full load).</p> <p><u>FAILURE TO MEET TEST</u></p> <p>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</p>		

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<p>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><u>SERVICE AND WARRANTY SUPPORT (DEALERSHIP)</u> TO INSURE FULL SERVICE AFTER DELIVERY, THE SELLING BIDDER/DEALERSHIP MUST BE CAPABLE OF PROVIDING SERVICE WHEN REQUIRED.</p> <p>The bidder/dealership shall show that the company is in position to render prompt service and to furnish replacement parts.</p> <p>Each bidder/dealership must be able to display that they are actively in the fire apparatus service business by operating a factory authorized service center and parts repository capable of satisfying the warranty service requirements and parts requirements of the vehicle(s) being purchased.</p> <p>The bidder/dealership must state the location of this authorized service center. This service center must have a staff of factory-trained mechanics, well versed in all aspects of service for all major components of the apparatus. The service center must be within two hundred fifty (250) miles of the Fire Department.</p> <p><u>SERVICE AND WARRANTY SUPPORT (MANUFACTURER)</u> To provide an additional layer of service support, the successful manufacturer must also own a least two separate service facilities, one located in the northern portion of the US to service both Canada and the northern US states and one in the south to service the southern states.</p> <p>The manufacturer shall stock 1 million parts equating to \$5,000,000 of inventory dedicated to service and replacement parts to ensure quick response and minimize down time. Furthermore, the manufacturer shall house the inventory in a dedicated facility, with a dedicated shipping area that ensures service parts are given priority. The bidder shall provide detailed documentation of service and replacement part resources.</p> <p>Parts identification shall be provided to both the dealer and the Fire Department through an on line web based application for the specific truck reflected in this specification. Access will be granted using the specific VIN number of the vehicle. The online web application will provide the ability to view complete bills of materials, digital photographs, parts drawings, assembly drawings, and access to all current operation, maintenance and service publications.</p> <p>The manufacturer must also maintain a 24 hour/ 7 day a week, toll free emergency hot line.</p>		

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<p>The manufacturer shall employ a staff of adequate size (a minimum of 30 personnel) specifically dedicated to providing customer support and parts for the fielded fleet of vehicles it has produced.</p> <p>The manufacturer must be capable of providing both in-house and on-site service for the apparatus.</p> <p>The manufacturer shall offer regional factory hands-on repair and maintenance training classes.</p> <p>The manufacturer shall employ a minimum of four certified EVT technicians on staff, not only providing technical expertise in the repair of fire apparatus, but also demonstrating the commitment to service after the sale.</p> <p><u>LIABILITY</u></p> <p>The successful bidder shall defend any and all suits and assume all liability for the use of any patented process including any device or article forming a part of the apparatus or any appliance furnished under the contract.</p> <p><u>INSURANCE PROVIDED BY BIDDER</u></p> <p><u>COMMERCIAL GENERAL LIABILITY INSURANCE</u></p> <p>The successful bidder shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of commercial general liability insurance:</p> <p>Each Occurrence\$1,000,000</p> <p>Products/Completed Operations Aggregate\$1,000,000</p> <p>Personal and Advertising Injury\$1,000,000</p> <p>General Aggregate\$2,000,000</p> <p>Coverage shall be written on a Commercial General Liability form. The policy shall be written on an occurrence form and shall include Contractual Liability coverage for bodily injury and property damage subject to the terms and conditions of the policy. The policy shall include Owner as an additional insured when required by written contract.</p> <p><u>COMMERCIAL AUTOMOBILE LIABILITY INSURANCE</u></p> <p>The successful bidder shall, during the performance of the contract, keep in force at least the following minimum limits of commercial automobile liability insurance and coverage shall be written on a Commercial Automobile liability form:</p> <p>Each Accident Combined Single Limit:\$1,000,000</p>		

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<p><u>UMBRELLA/EXCESS LIABILITY INSURANCE</u></p> <p>The successful bidder shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of umbrella liability insurance:</p> <p>Aggregate:\$3,000,000</p> <p>Each Occurrence:\$3,000,000</p> <p>The umbrella policy shall be written on an occurrence basis and at a minimum provide excess to the bidder's General Liability and Automobile Liability policies.</p> <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. Best.</p> <p>All policies shall provide a 30-day notice of cancellation to the named insured. The Certificate of Insurance shall provide the following cancellation clause: Should any of the above described policies be cancelled before the expiration date thereof, notice shall be delivered in accordance with the policy provisions.</p> <p>Bidder agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with the bid. The certificate shall show the purchaser as certificate holder.</p> <p><u>INSURANCE PROVIDED BY MANUFACTURER</u></p> <p><u>PRODUCT LIABILITY INSURANCE</u></p> <p>The manufacturer shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of Product Liability insurance:</p> <p>Each Occurrence\$1,000,000</p> <p>Products/Completed Operations Aggregate\$1,000,000</p> <p>Coverage shall be written on a Commercial General Liability form. The policy shall be written on an occurrence form. The manufacturer's policy shall include the owner as additional insured when required by written contract between the Owner and a Pierce authorized dealer.</p> <p><u>UMBRELLA/EXCESS LIABILITY INSURANCE</u></p> <p>The manufacturer shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of umbrella liability insurance:</p>		

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	Yes	No
<p>Each Occurrence:\$25,000,000</p> <p>Aggregate:\$25,000,000</p> <p>The umbrella policy shall be written on an occurrence basis and provide excess to the manufacturer's General Liability/Products 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. Best.</p> <p>All policies shall provide a 30-day notice of cancellation to the named insured. The Certificate of Insurance shall provide the following cancellation clause: Should any of the above described policies be cancelled before the expiration date thereof, notice shall be delivered in accordance with the policy provisions.</p> <p>Manufacturer agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with the bid. The certificate shall show the purchaser as the certificate holder.</p> <p><u>SINGLE SOURCE MANUFACTURER</u></p> <p>Bids shall only be accepted from a single source apparatus manufacturer (no exception). The definition of single source is a manufacturer that designs and manufactures their products using an integrated approach, including the chassis, cab weldment, cab, pumphouse (including the sheet metal enclosure, valve controls, piping and operators panel) and body being designed, fabricated and assembled on the bidder's premises. The electrical system (hardwire or multiplex) shall be both designed and integrated by the same apparatus manufacturer. The warranties relative to these major components (excluding component warranties such as engine, transmission, axles, pump, etc.) must be from a single source manufacturer and not split between manufacturers (i.e. body, pumphouse, cab weldment and chassis). The bidder shall provide evidence that they comply with this requirement.</p> <p>The bidder shall state the location of the factory where the apparatus is to be built.</p> <p><u>NFPA 2016 STANDARDS</u></p> <p>This unit shall comply with the NFPA standards effective January 1, 2016, except for fire department specifications that differ from NFPA specifications. These exceptions shall be set forth in the Statement of Exceptions.</p> <p>Certification of slip resistance of all stepping, standing and walking surfaces shall be supplied with delivery of the apparatus.</p> <p>All horizontal surfaces designated as a standing or walking surface that are greater than 48.00" above the ground must be defined by a 1.00" wide line along its outside perimeter. Perimeter markings and designated access paths to destination points shall be identified on the customer</p>		

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<p>approval print and are shown as approximate. Actual location(s) shall be determined based on materials used and actual conditions at final build. Access paths may pass through hose storage areas and opening or removal of covers or restraints may be required. Access paths may require the operation of devices and equipment such as the aerial device or ladder rack.</p> <p>A plate that is highly visible to the driver while seated shall be provided. This plate shall show the overall height, length, and gross vehicle weight rating.</p> <p>The manufacturer shall have programs in place for training, proficiency testing and performance for any staff involved with certifications.</p> <p>An official of the company shall designate, in writing, who is qualified to witness and certify test results.</p> <p><u>NFPA COMPLIANCY</u></p> <p>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><u>PUMP TEST</u></p> <p>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><u>GENERATOR TEST</u></p> <p>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><u>BREATHING AIR TEST</u></p> <p>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><u>VEHICLE INSPECTION PROGRAM CERTIFICATION</u></p> <p>To assure the vehicle is built to current NFPA 1901 standards, the apparatus, in its entirety, shall be third-party, independent, audit-certified through Underwriters Laboratory (UL) that it is built and complies to all applicable standards in the current edition. The certification includes: all design, production, operational, and performance testing of not only the apparatus, but those components that are installed on the apparatus (no exception).</p> <p>A placard shall be affixed in the driver's side area stating the third party agency, the date, the standard and the certificate number of the whole vehicle audit.</p>		

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	Yes	No
<p><u>BID BOND</u></p> <p>All bidders shall provide a bid bond as security for the bid in the form of a 10% bid bond to accompany their bid. This bid bond shall be issued by a Surety Company who is listed on the U.S. Treasury Departments list of acceptable sureties as published in Department Circular 570. The bid bond shall be issued by an authorized representative of the Surety Company and shall be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond shall include language, which assures that the bidder/principal shall give a bond or bonds as may be specified in the bidding or contract documents, with good and sufficient surety for the faithful performance of the contract, including the Basic One (1) Year Limited Warranty, and for the prompt payment of labor and material furnished in the prosecution of the contract.</p> <p>Proposals received from bidders who do not manufacture the chassis shall provide a warranty that shall be issued jointly and severally by, and signed by, both the bidder and the chassis manufacturer.</p> <p>If the successful bidder does not manufacture the chassis, the bidder shall supply a warranty bond, in addition to their performance bond, along with their signed contract. This warranty bond shall guarantee all terms and conditions of the Basic One (1) Year Limited Warranty and names both the bidder and chassis manufacturer as co-principals. This warranty bond shall be issued for the contract amount and shall remain in force for a term which is consistent with the term of the Basic One (1) Year Limited Warranty.</p> <p>Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle shall apply only to the Basic One (1) Year Limited Warranty for such vehicle. Any surety bond related to the sale of a vehicle shall not apply to any other warranties that are included within this bid (OEM or otherwise) or to the warranties (if any) of any third party of any part, component, attachment or accessory that is incorporated into or attached to the vehicle. In the event of any contradiction or inconsistency between this provision and any other document or assertion, this provision shall prevail.</p> <p><u>PERFORMANCE BOND NOT REQUESTED</u></p> <p>A performance bond shall not be included. If requested at a later date, one shall be provided to you for an additional cost and the following shall apply:</p> <p>The successful bidder shall furnish a Performance and Payment bond (Bond) equal to 100 percent of the total contract amount within 30 days of the notice of award. Such Bond shall be in a form acceptable to the Owner and issued by a surety company included within the Department of Treasury's Listing of Approved Sureties (Department Circular 570) with a minimum A.M. Best Financial Strength Rating of A and Size Category of XV. In the event of a bond issued by a surety of a lesser Size Category, a minimum Financial Strength rating of A+ is required.</p> <p>Bidder and Bidder's surety agree that the Bond issued hereunder, whether expressly stated or not, also includes the surety's guarantee of the vehicle manufacturer's Bumper to Bumper</p>		

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<p>warranty period included within this proposal. Owner agrees that the penal amount of this bond shall be simultaneously amended to 25 percent of the total contract amount upon satisfactory acceptance and delivery of the vehicle(s) included herein. Notwithstanding anything contained within this contract to the contrary, the surety's liability for any warranties of any type shall not exceed three (3) years from the date of such satisfactory acceptance and delivery, or the actual Bumper to Bumper warranty period, whichever is shorter.</p> <p><u>APPROVAL DRAWING</u></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><u>ELECTRICAL WIRING DIAGRAMS</u></p> <p>Two (2) electrical wiring diagrams, prepared for the model of chassis and body, shall be provided.</p> <p><u>CHASSIS</u></p> <p>Chassis provided shall be a new, tilt-type custom fire apparatus. The chassis shall be manufactured in the apparatus body builder's facility eliminating any split responsibility. The chassis shall be designed and manufactured for heavy-duty service, with adequate strength, capacity for the intended load to be sustained, and the type of service required.</p> <p><u>WHEELBASE</u></p> <p>The wheelbase of the vehicle shall be no greater than 191.50.</p> <p><u>GVW RATING</u></p> <p>The gross vehicle weight rating shall be a minimum of 53800.</p> <p><u>FRAME</u></p> <p>The chassis frame shall be built with two (2) steel channels bolted to five (5) cross members or more, depending on other options of the apparatus. The side rails shall be heat-treated steel measuring 10.25" x 3.50" x 0.375".</p> <p>Each rail shall have a section modulus of 16.00 cubic inches, yield strength of 120,000 psi, and a resisting bending moment (rbm) of 1,921,069 inch-pounds.</p> <p><u>FRAME REINFORCEMENT</u></p> <p>A full-length mainframe "C" liner shall be provided.</p>		

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<p>The liner shall be an internal "C" design, heat-treated steel measuring 9.38" x 3.13" x .25". Each reinforcement member shall have a section modulus of 3.90 cubic inches, yield strength of 120,000 psi and resisting bending moment (rbm) of 938,762 in-lb.</p> <p>In addition, a L-shaped steel channel reinforcement shall be located under each mainframe rail.</p> <p><u>FRONT NON DRIVE AXLE</u></p> <p>The front axle shall be of the independent suspension design with a ground rating of 22,800 lb. (no exception)</p> <p>Upper and lower control arms shall be used on each side of the axle. Upper control arm castings shall be made of 100,000-psi yield strength 8630 steel and the lower control arm casting shall be made of 55,000-psi yield ductile iron.</p> <p>The center cross members and side plates shall be constructed out of 80,000-psi yield strength steel.</p> <p>Each control arm shall be mounted to the center section using elastomer bushings. These rubber bushings shall rotate on low friction plain bearings and be lubricated for life. Each bushing shall also have a flange end to absorb longitudinal impact loads, reducing noise and vibrations.</p> <p>There shall be nine (9) grease fittings supplied, one (1) on each control arm pivot and one (1) on the steering gear extension.</p> <p>The upper control arm shall be shorter than the lower arm so that wheel end geometry provides positive camber when deflected below rated load and negative camber above rated load.</p> <p>Camber at load shall be zero degrees for optimum tire life.</p> <p>The ball joint bearing shall be of low friction design and be maintenance free.</p> <p>Toe links that are adjustable for alignment of the wheel to the center of the chassis shall be provided.</p> <p>The wheel ends must have little to no bump steer when the chassis encounters a hole or obstacle.</p> <p>The steering linkage shall provide proper steering angles for the inside and outside wheel, based on the vehicle wheelbase.</p> <p>The axle shall have a turning angle of up to 45 degrees.</p> <p><u>FRONT SUSPENSION</u></p> <p>Front independent suspension shall be provided with a minimum ground rating of 22,800 lb.</p>		

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<p>The independent suspension system shall be designed to provide maximum ride comfort. The design shall allow the vehicle to travel at highway speeds over improved road surfaces and at moderate speeds over rough terrain with minimal transfer of road shock and vibration to the vehicle's crew compartment.</p> <p>Each wheel shall have torsion bar type spring. In addition, each front wheel end shall also have energy absorbing jounce bumpers to prevent bottoming of the suspension.</p> <p>The suspension design shall be such that there is at least 10.00" of total wheel travel and a minimum of 3.75" before suspension bottoms. (no exception)</p> <p>The torsion bar anchor lock system allows for simple lean adjustments, without the use of shims. One can adjust for a lean within 15 minutes per side. Anchor adjustment design is such that it allows for ride height adjustment on each side.</p> <p>The independent suspension shall be put through a durability test that has simulated a minimum of 140,000 miles of inner city driving.</p> <p><u>FRONT SHOCK ABSORBERS</u></p> <p>KONI heavy-duty telescoping shock absorbers shall be provided on the front suspension.</p> <p><u>FRONT OIL SEALS</u></p> <p>Oil seals with viewing window shall be provided on the front axle.</p> <p><u>FRONT TIRES</u></p> <p>Front tires shall be Goodyear 425/65R22.50 radials, 20 ply Armor Max MSA, rated for 22,800 lb maximum axle load and 68 mph maximum speed.</p> <p>The tires shall be mounted on 22.50" x 12.25" steel disc type wheels with a ten (10)-stud, 11.25" bolt circle.</p> <p><u>REAR AXLE</u></p> <p>The rear axle shall be a Dana, Model S30-190, single axle assembly with a capacity of 31,000 lb.</p> <p><u>TOP SPEED OF VEHICLE</u></p> <p>NFPA 1901, 2016 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</p>		

	Bidder Complies	
	Yes	No
<p>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 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 68 MPH.</p> <p><u>REAR SUSPENSION</u></p> <p>The rear suspension shall be Standens, semi-elliptical, 3.00" wide x 53.00" long, 12-leaf pack with a ground rating of 31,000 lbs. The spring hangers shall be castings.</p> <p>The two (2) top leaves shall wrap the forward spring hanger pin, and the rear of the spring shall be a slipper style end that shall ride in a rear slipper hanger. To reduce bending stress due to acceleration and braking, the front eye shall be a berlin eye that shall place the front spring pin in the horizontal plane within the main leaf.</p> <p>A steel encased rubber bushing shall be used in the spring eye. The steel encased rubber bushing shall be maintenance free and require no lubrication.</p> <p><u>REAR OIL SEALS</u></p> <p>Oil seals shall be provided on the rear axle(s).</p> <p><u>AUXILIARY SPRING</u></p> <p>The rear suspension shall be furnished with a Timbren auxiliary spring package.</p> <p><u>REAR TIRES</u></p> <p>Rear tires shall be four (4) Michelin 315/80R22.50 radials, load range L, X@WORKS™XDY, rated for 35,396 lb maximum axle load and 65 mph maximum speed.</p> <p>The tires shall be mounted on Accuride® 22.50" x 9.00" steel disc type wheels with a ten (10) stud, 11.25" bolt circle.</p> <p><u>TIRE BALANCE</u></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><u>TIRE PRESSURE MANAGEMENT</u></p> <p>There shall be a RealWheels LED AirSecure™ tire alert pressure management system provided, that shall monitor each tire's pressure. A sensor shall be provided on the valve stem of each tire for a total of six (6) tires.</p>		

	Bidder Complies	
	Yes	No
<p>The sensor shall calibrate to the tire pressure when installed on the valve stem for pressures between 10 and 200 psi. The sensor shall activate an integral battery operated LED when the pressure of that tire drops 5 to 8 psi.</p> <p>Removing the cap from the sensor shall indicate the functionality of the sensor and battery. If the sensor and battery are in working condition, the LED shall immediately start to flash.</p> <p><u>MUD FLAPS</u></p> <p>Mud flaps shall be installed behind the front and rear wheels of the apparatus.</p> <p><u>WHEEL CHOCKS</u></p> <p>There shall be one (1) pair of Worden Safety Products, Model HWG-SB, wheel chocks provided.</p> <p>Heavy Duty, large molded aluminum wheel chock with solid bottom, natural cast aluminum finish.</p> <p><u>WHEEL CHOCK BRACKETS</u></p> <p>There shall be one (1) pair of Worden Safety model U815T mounting wheel chock brackets provided . The brackets shall be mounted driver side behind rear wheels.</p> <p><u>ANTI-LOCK BRAKE SYSTEM</u></p> <p>The vehicle shall be equipped with a Meritor WABCO 4S4M, anti-lock braking system. The ABS shall provide a 4-channel anti-lock braking control on both the front and rear wheels. A digitally controlled system that utilizes microprocessor technology shall control the anti-lock braking system. Each wheel shall be monitored by the system. When any particular wheel begins to lockup, a signal shall be sent to the control unit. This control unit shall then reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.</p> <p><u>BRAKES</u></p> <p>The service brake system shall be full air type.</p> <p>The front brakes shall be Knorr/Bendix disc type with a 17.00" ventilated rotor for improved stopping distance.</p> <p>The brake system shall be certified, third party inspected, for improved stopping distance.</p> <p>The rear brakes shall be Bendix®, Model ES1657D, 16.50" x 7.00" cam operated with automatic slack adjusters.</p> <p><u>BRAKE SYSTEM AIR COMPRESSOR</u></p> <p>The air compressor shall be a Cummins/WABCO with 18.7 cubic feet per minute output.</p>		

		Bidder Complies					
		Yes	No				
<p><u>BRAKE SYSTEM</u></p> <p>The brake system shall include:</p> <ul style="list-style-type: none">• Brake treadle valve• Heated automatic moisture ejector on air dryer• Total air system capacity of 6,408 cubic inches• Two (2) air pressure gauges with a red warning light and an audible alarm, that activates when air pressure falls below 60 psi• Spring set parking brake system• Parking brake operated by a push-pull style control valve• A parking "brake on" indicator light on instrument panel• Park brake relay/inversion and anti-compounding valve, in conjunction with a double check valve system, shall be provided with an automatic spring brake application at 40 psi• A pressure protection valve to prevent all air operated accessories from drawing air from the air system when the system pressure drops below 80 psi (550 kPa)• 1/4 turn drain valves on each air tank <p>The air tank shall be primed and painted to meet a minimum 750 hour salt spray test.</p> <p>To reduce the effects of corrosion, the air tank shall be mounted with stainless steel brackets (no exception).</p> <p><u>BRAKE SYSTEM AIR DRYER</u></p> <p>The air dryer shall be WABCO System Saver 1200 with spin-on coalescing filter cartridge and 100 watt heater.</p> <p><u>BRAKE LINES</u></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><u>AIR INLET WITH AUTOMATIC EJECT</u></p> <p>One (1) air inlet with Kussmaul Air Eject shall be provided. It shall allow station air to be supplied to the apparatus brake system through a shoreline hose. The inlet shall automatically disconnect the air line when the truck is started. It shall be equipped with a male coupling and be located in the driver side lower step well of cab. A check valve shall be provided to prevent reverse flow of air. The inlet shall discharge into the "wet" tank of the brake system. A mating female coupling shall also be provided with the loose equipment.</p> <p><u>ENGINE</u></p> <p>The chassis shall be powered by an electronically controlled engine as described below:</p> <table><tr><td>Make:</td><td>Cummins</td></tr><tr><td>Model:</td><td>L9</td></tr></table>		Make:	Cummins	Model:	L9		
Make:	Cummins						
Model:	L9						

		Bidder Complies	
		Yes	No
Power:	400 hp at 2100 rpm		
Torque:	1250 lb-ft at 1400 rpm		
Governed Speed:	2200 rpm		
Emissions Level:	EPA 2021		
Fuel:	Diesel		
Cylinders:	Six (6)		
Displacement:	543 cubic inches (8.9L)		
Starter:	Delco Remy 39MT™		
Fuel Filters:	Spin-on style primary filter with water separator and water-in-fuel sensor. Secondary spin-on style filter.		
<p>The engine shall include On-board diagnostics (OBD), which provides self diagnostic and reporting. The system shall give the owner or repair technician access to state of health information for various vehicle sub systems. The system shall monitor vehicle systems, engine and after treatment. The system shall illuminate a malfunction indicator light on the dash console if a problem is detected.</p> <p><u>HIGH IDLE</u></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><u>ENGINE BRAKE</u></p> <p>The variable geometry turbo (VGT) provided on the Cummins ISC8.3 or ISL9 engine shall be programmed to function as an engine brake. The brake shall be controlled by a switch on the instrument panel located within easy reach of the driver. The brake shall activate when the switch is on and the accelerator pedal has been released.</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><u>CLUTCH FAN</u></p> <p>A fan clutch shall be provided. The fan clutch shall be automatic when the pump transmission is in "Road" position, and constantly engaged when in "Pump" position.</p>			

	Bidder Complies	
	Yes	No
<p><u>FAN CLUTCH CONTROL SWITCH</u></p> <p>A manual control switch for the fan clutch shall be provided. The switch shall allow manual engagement any time the pump transmission is in "road". The fan clutch shall be in constant engagement when the pump transmission is in "pump" position.</p> <p><u>ENGINE AIR INTAKE</u></p> <p>The engine air intake shall be located above the engine cooling package. It shall draw fresh air from the front of the apparatus through the radiator grille.</p> <p>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 by tilting the cab.</p> <p><u>EXHAUST SYSTEM</u></p> <p>The exhaust system shall be stainless steel from the turbo to the engine's aftertreatment device, and shall be 4.00" in diameter. The exhaust system shall include a single module aftertreatment device to meet current EPA standards. An insulation wrap shall be provided on all exhaust pipes between the turbo and aftertreatment device to minimize the heat loss to the aftertreatment device. The exhaust shall terminate horizontally ahead of the right side rear wheels. A tailpipe diffuser shall be provided to reduce the temperature of the exhaust as it exits. Heat deflector shields shall be provided to isolate chassis and body components from the heat of the tailpipe diffuser.</p> <p><u>RADIATOR</u></p> <p>The radiator and the complete cooling system shall meet or exceed NFPA and engine manufacturer cooling system standards.</p> <p>For maximum corrosion resistance and cooling performance, the entire radiator core shall be constructed using long life aluminum alloy. The radiator core shall consist of aluminum fins, having a serpentine design, brazed to aluminum tubes. No solder joints or leaded material of any kind shall be acceptable in the core assembly.</p> <p>The radiator core shall have a minimum front area of 1060 square inches.</p> <p>Supply tank shall be made of heavy duty glass-reinforced nylon and the return tank shall be made of aluminum. Both tanks shall be crimped onto the core assembly using header tabs and a compression gasket to complete the radiator core assembly. There shall be a full steel frame around the inserts to enhance cooling system durability and reliability.</p> <p>The radiator shall be compatible with commercial antifreeze solutions.</p> <p>The radiator assembly shall be isolated from the chassis frame rails with rubber isolators to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven terrain.</p>		

	Bidder Complies	
	Yes	No
<p>The radiator shall include a de-aeration/expansion tank. For visual coolant level inspection, the radiator shall have a built-in sight glass. The radiator shall be equipped with a 15 psi pressure relief cap.</p> <p>A drain port shall be located at the lowest point of the cooling system and/or the bottom of the radiator to permit complete flushing of the coolant from the system.</p> <p>Shields or baffles shall be provided to prevent recirculation of hot air to the inlet side of the radiator.</p> <p><u>COOLANT LINES</u></p> <p>Gates, or Goodyear, rubber hose shall be used for all engine 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><u>FUEL TANK</u></p> <p>A 65 gallon fuel tank shall be provided and mounted at the rear of the chassis. The tank shall be constructed of 12-gauge, hot rolled steel. It shall be equipped with swash partitions and a vent. To eliminate the effects of corrosion, the fuel tank shall be mounted with stainless steel straps (no exception).</p> <p>A 0.75" drain plug shall be provided in a low point of the tank for drainage.</p> <p>A fill inlet shall be located on the left hand side of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Ultra Low Sulfur - Diesel Fuel Only."</p> <p>A 0.50" diameter vent shall be provided running from top of tank to just below fuel fill inlet.</p> <p>The tank shall meet all FHWA 393.67 requirements including a fill capacity of 95 percent of tank volume.</p> <p>All fuel lines shall be provided as recommended by the engine manufacturer.</p> <p><u>DIESEL EXHAUST FLUID TANK</u></p> <p>A 4.5 gallon diesel exhaust fluid (DEF) tank shall be provided and mounted in the driver's side body rearward of the rear axle.</p> <p>A 0.50" drain plug shall be provided in a low point of the tank for drainage.</p> <p>A fill inlet shall be provided and marked "Diesel Exhaust Fluid Only". The fill inlet shall be located adjacent to the air bottle storage behind a common door on the driver side of the vehicle.</p>		

	Bidder Complies													
	Yes	No												
<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><u>FUEL PRIMING PUMP</u></p> <p>A Cummins automatic electronic fuel priming pump shall be integrated as part of the engine.</p> <p><u>TRANSMISSION</u></p> <p>An Allison 6th generation, Model EVS 3000P, electronic torque converting automatic transmission shall be provided.</p> <p>The transmission shall be equipped with prognostics to monitor oil life, filter life, and transmission health. A wrench icon on the shift selector's digital display shall indicate when service is due.</p> <p>Two (2) PTO openings shall be located on both sides of converter housing (positions 4 o'clock and 8 o'clock) as viewed from the rear.</p> <p>A transmission temperature gauge with amber light and audible alarm shall be installed on the cab dash.</p> <p><u>TRANSMISSION SHIFTER</u></p> <p>A five (5)-speed push button shift module shall be mounted to right of driver on console. Shift position indicator shall be indirectly lit for after dark operation.</p> <p>The transmission ratio shall be:</p> <table><tr><td>1st</td><td>3.49 to 1.00</td></tr><tr><td>2nd</td><td>1.86 to 1.00</td></tr><tr><td>3rd</td><td>1.41 to 1.00</td></tr><tr><td>4th</td><td>1.00 to 1.00</td></tr><tr><td>5th</td><td>0.75 to 1.00</td></tr><tr><td>R</td><td>5.03 to 1.00</td></tr></table> <p><u>TRANSMISSION PROGRAMMING</u></p> <p>The transmission shall be programmed to automatically shift the transmission to neutral when the parking brake is set to simplify operation and increase operational safety (no exception).</p> <p><u>TRANSMISSION COOLER</u></p> <p>A Modine plate and fin transmission oil cooler shall be provided using engine coolant to control the transmission oil temperature.</p>	1st	3.49 to 1.00	2nd	1.86 to 1.00	3rd	1.41 to 1.00	4th	1.00 to 1.00	5th	0.75 to 1.00	R	5.03 to 1.00		
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R	5.03 to 1.00													

	Bidder Complies	
	Yes	No
<p><u>DRIVELINE</u></p> <p>Drivelines shall be a heavy-duty metal tube and be equipped with Spicer® 1710 universal joints.</p> <p>The shafts shall be dynamically balanced before installation.</p> <p>A splined slip joint shall be provided in each driveshaft where the driveline design requires it. The slip joint shall be coated with Glidecoat® or equivalent.</p> <p><u>STEERING</u></p> <p>Dual Sheppard, Model M110, steering gears, with integral heavy-duty power steering, shall be provided. For reduced system temperatures, the power steering shall incorporate an air to oil cooler and an Eaton, Model VN20, 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><u>STEERING WHEEL</u></p> <p>The steering wheel shall be 18.00" in diameter, have tilting and telescoping capabilities, and a 4-spoke design.</p> <p><u>LOGO AND CUSTOMER DESIGNATION ON DASH</u></p> <p>The dash panel 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: City of</p> <p>The second row of text shall be: Negaunee</p> <p>The third row of text shall be: Fire Department</p> <p><u>BUMPER</u></p> <p>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.</p> <p><u>Gravel Pan</u></p> <p>A gravel pan, constructed of bright aluminum treadplate, shall be furnished between the bumper and cab face. The gravel pan shall be properly supported from the underside to prevent flexing and vibration of the aluminum treadplate.</p>		

	Bidder Complies	
	Yes	No
<p><u>CENTER HOSE TRAY</u></p> <p>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><u>Center Hose Tray Cover</u></p> <p>A bright aluminum treadplate cover shall be provided over the center hose tray.</p> <p>The cover shall be "notched" allowing the hose to be pre connected 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. The arm shall be center.</p> <p><u>TOW HOOKS</u></p> <p>Two (2) chromed steel tow hooks shall be installed under the bumper and attached to the front frame members. The tow hooks shall be designed and positioned to allow up to a 6,000 lb straight horizontal pull in line with the centerline of the vehicle. The tow hooks shall not be used for lifting of the apparatus.</p> <p><u>CAB</u></p> <p>The cab shall be designed specifically for the fire service and manufactured by the chassis builder.</p> <p>The cab shall be built by the apparatus manufacturer in a facility located on the manufacturer's premises (no exception).</p> <p>For reasons of structural integrity and enhanced occupant protection, the cab shall be a heavy duty design, constructed to the following minimal standards.</p> <p>The cab shall have 12 main vertical structural members located in the A-pillar (front cab corner posts), B-pillar (side center posts), C-pillar (rear corner posts), and rear wall areas. The A-pillar shall be constructed of solid A356-T5 aluminum castings. The B-pillar and C-pillar shall be constructed from 0.13" wall extrusions. The rear wall shall be constructed of two (2) 2.00" x 2.00" outer aluminum extrusions and two (2) 2.00" x 1.00" inner aluminum extrusions. All main vertical structural members shall run from the floor to 4.625" x 3.864" x 0.090" thick roof extrusions to provide a cage-like structure with the A-pillar and roof extrusions being welded into a 0.25" thick corner casting at each of the front corners of the roof assembly.</p> <p>The front of the cab shall be constructed of a 0.13" firewall plate, covered with a 0.090" front skin (for a total thickness of 0.22"), and reinforced with a full width x 0.50" thick cross-cab support located just below the windshield and fully welded to the engine tunnel. The cross-cab</p>		

	Bidder Complies	
	Yes	No
<p>support shall run the full width of the cab and weld to each A-pillar, the 0.13" firewall plate, and the front skin.</p> <p>The cab floors shall be constructed of 0.125" thick aluminum plate and reinforced at the firewall with an additional 0.25" thick cross-floor support providing a total thickness of 0.375" of structural material at the front floor area. The front floor area shall also be supported with two (2) triangular 0.30" wall extrusions that also provides the mounting point for the cab lift. This tubing shall run from the floor wireway of the cab to the engine tunnel side plates, creating the structure to support the forces created when lifting the cab.</p> <p>The cab shall be 96.00" wide (outside door skin to outside door skin) to maintain maximum maneuverability (no exception).</p> <p>The forward cab section shall have an overall height (from the cab roof to the ground) of approximately 99.00". The crew cab section shall have a 10.00" raised roof, with an overall cab height of approximately 109.00". The overall height listed shall be calculated based on a truck configuration with the lowest suspension weight rating, the smallest diameter tires for the suspension, no water weight, no loose equipment weight, and no personnel weight. Larger tires, wheels, and suspension shall increase the overall height listed.</p> <p>The floor to ceiling height inside the crew cab shall be 63.50" in the forward facing outboard positions and 54.50" in the forward facing center position.</p> <p>The crew cab floor shall measure 46.00" from the rear wall to the back side of the rear facing seat risers.</p> <p>The medium block engine tunnel, at the rearward highest point (knee level), shall measure 61.50" to the rear wall. The big block engine tunnel shall measure 51.50" to the rear wall.</p> <p>The crew cab shall be a totally enclosed design with the interior area completely open to improve visibility and verbal communication between the occupants.</p> <p>The cab shall be a full tilt cab style.</p> <p>A 3-point cab mount system with rubber isolators shall improve ride quality by isolating chassis vibrations from the cab.</p> <p><u>CAB ROOF DRIP RAIL</u></p> <p>For enhanced protection from inclement weather, a drip rail shall be furnished on the sides of the cab. The drip rail shall be painted to match the cab roof, and bonded to the sides of the cab. The drip rail shall extend the full length of the cab roof.</p> <p><u>CAB PUMP ENCLOSURE</u></p> <p>The rear of the cab shall be made to house the fire pump below the forward facing crew cab seats. The cab side panels shall be notched to accommodate the pump panel.</p>		

	Bidder Complies	
	Yes	No
<p><u>INTERIOR CAB INSULATION</u></p> <p>The cab shall include 1.00" insulation in the ceiling, 1.50" insulation in the side walls, and 2.00" insulation in the rear wall to maximize acoustic absorption and thermal insulation.</p> <p><u>FENDER LINERS</u></p> <p>Full circular inner fender liners in the wheel wells shall be provided.</p> <p><u>PANORAMIC WINDSHIELD</u></p> <p>A one (1)-piece safety glass windshield shall be provided with over 2,775 square inches of clear viewing area. The windshield shall be full width and shall provide the occupants with a panoramic view. The windshield shall consist of three (3) layers: outer light, middle safety laminate, and inner light. The outer light layer shall provide superior chip resistance. The middle safety laminate layer shall prevent the windshield glass pieces from detaching in the event of breakage. The inner light shall provide yet another chip resistant layer. The cab windshield shall be bonded to the aluminum windshield frame using a urethane adhesive. A custom frit pattern shall be applied on the outside perimeter of the windshield for a finished automotive appearance.(no exception)</p> <p><u>WINDSHIELD WIPERS</u></p> <p>Three (3) electric windshield wipers with washer shall be provided that meet FMVSS and SAE requirements.</p> <p>The washer reservoir shall be able to be filled without raising the cab.</p> <p><u>ENGINE TUNNEL</u></p> <p>Engine hood side walls shall be constructed of 0.375" aluminum. The top shall be constructed of 0.125" aluminum and shall be tapered at the top to allow for more driver and passenger elbow room.</p> <p>The engine hood shall be insulated for protection from heat and sound. The noise insulation keeps the dBA level within the limits stated in the current NFPA 1901 standards.</p> <p>The engine tunnel shall be no higher than 17.00" off the crew cab floor (no exception).</p> <p><u>CAB REAR WALL EXTERIOR COVERING</u></p> <p>The exterior surface of the rear wall of the cab shall be overlaid with bright aluminum treadplate except for areas that are not typically visible when the cab is lowered.</p> <p><u>CAB LIFT</u></p> <p>A hydraulic cab lift system shall be provided consisting of an electric powered hydraulic pump, dual lift cylinders, and necessary hoses and valves.</p> <p>Lift controls shall be located on the right side pump panel or front area of the body in a convenient location.</p>		

	Bidder Complies	
	Yes	No
<p>The cab shall be capable of tilting 43 degrees to accommodate engine maintenance and removal.</p> <p>The cab shall be locked down by a 2-point normally closed spring loaded hook type latch that fully engages after the cab has been lowered. The system shall be hydraulically actuated to release the normally closed locks when the cab lift control is in the raised position and cab lift system is under pressure. When the cab is completely lowered and system pressure has been relieved, the spring loaded latch mechanisms shall return to the normally closed and locked position.</p> <p>The hydraulic cylinders shall be equipped with a velocity fuse that protects the cab from accidentally descending when the control is located in the tilt position.</p> <p>For increased safety, a redundant mechanical stay arm shall be provided that must be manually put in place on the left side between the chassis and cab frame when the cab is in the raised position. This device shall be manually stowed to its original position before the cab can be lowered.</p> <p><u>Cab Lift Interlock</u></p> <p>The cab lift system shall be interlocked to the parking brake. The cab tilt mechanism shall be active only when the parking brake is set and the ignition switch is in the on position. If the parking brake is released, the cab tilt mechanism shall be disabled.</p> <p><u>GRILLE</u></p> <p>A bright finished aluminum mesh grille screen, inserted behind a bright finished grille surround, shall be provided on the front center of the cab.</p> <p><u>DOOR JAMB SCUFFPLATES</u></p> <p>All cab door jambs shall be furnished with a polished stainless steel scuffplate, mounted on the striker side of the jamb.</p> <p><u>SIDE OF CAB MOLDING</u></p> <p>Chrome molding shall be provided on both sides of cab.</p> <p><u>MIRRORS</u></p> <p>A Retraco, Model 613423, dual vision, motorized, west coast style mirror, with chrome finish, shall be mounted on each side of the front cab door with spring loaded retractable arms. The flat glass and convex glass shall be heated and adjustable with remote control within reach of the driver.</p> <p><u>DOORS</u></p> <p>To enhance entry and egress to the cab, the forward cab door openings shall be a minimum of 37.50" wide x 63.37" high. The crew cab doors shall be located on the sides of the cab and shall be constructed in the same manner as the forward cab doors. The crew cab door openings shall be a minimum of 34.30" wide x 73.25" high.</p>		

	Bidder Complies	
	Yes	No
<p>The forward cab and crew cab doors shall be constructed of extruded aluminum with a nominal material thickness of 0.093". The exterior door skins shall be constructed from 0.090" aluminum.</p> <p>A customized, vertical, pull-down type door handle shall be provided on the exterior of each cab door. The finish of the door handle shall be chrome/black. The exterior handle shall be designed specifically for the fire service to prevent accidental activation, and shall provide 4.00" wide x 2.00" deep hand clearance for ease of use with heavy gloved hands.</p> <p>Each door shall also be provided with an interior flush, open style paddle handle that shall be readily operable from fore and aft positions, and be designed to prevent accidental activation. The interior handles shall provide 4.00" wide x 1.25" deep hand clearance for ease of use with heavy gloved hands.</p> <p>The cab doors shall be provided with both interior (rotary knob) and exterior (keyed) locks exceeding FMVSS standards. The keys shall be Model 751. The locks shall be capable of activating when the doors are open or closed. The doors shall remain locked if locks are activated when the doors are opened, then closed.</p> <p>A full length, heavy duty, stainless steel, piano-type hinge with a 0.38" pin and 11 gauge leaf shall be provided on all cab doors. There shall be double automotive-type rubber seals around the perimeter of the door framing and door edges to ensure a weather-tight fit.</p> <p>A chrome grab handle shall be provided on the inside of each cab door for ease of entry.</p> <p>A red webbed grab handle shall be installed on the crew cab door stop strap. The grab handles shall be securely mounted.</p> <p>The bottom cab step at each cab door location shall be located below the cab doors and shall be exposed to the exterior of the cab.</p> <p><u>Door Panels</u></p> <p>The inner cab door panels shall be constructed out of brushed stainless steel.</p> <p><u>MANUAL CAB DOOR WINDOWS</u></p> <p>All cab entry doors shall contain a conventional roll down window.</p> <p><u>CAB STEPS</u></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 25.00" wide, and the crew cab steps shall be 21.65" wide with a 10.00" minimum depth. The inside cab steps shall not exceed 16.50" in height.</p>		

	Bidder Complies	
	Yes	No
<p>The vertical surfaces of the step well shall be aluminum treadplate.</p> <p><u>CAB EXTERIOR HANDRAILS</u> A 1.25" diameter slip-resistant, knurled aluminum handrail shall be provided adjacent to each cab and crew cab door opening to assist during cab ingress and egress.</p> <p><u>STEP LIGHTS</u> There shall be six (6) white LED step lights with chrome housing installed for cab and crew cab access steps.</p> <ul style="list-style-type: none"> • One (1) light for the left access steps. • Two (2) lights for the left side crew cab access steps. • Two (2) lights for the right side crew cab access steps. • One (1) light for the right side access step. <p>In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.</p> <p>The lights shall be activated when the battery switch is on and the adjacent door is opened.</p> <p><u>FENDER CROWNS</u> Stainless steel fender crowns shall be installed at the cab wheel openings.</p> <p><u>CREW CAB WINDOWS</u> One (1) fixed window with tinted glass shall be provided on each side of the cab, to the rear of the front cab door. The windows shall be sized to enhance light penetration into the cab interior. The windows shall measure 18.70" wide x 23.75" high.</p> <p><u>CAB DASH</u> The driver side dash, switch panel located to the right of the driver, and center console shall be an easily removable high impact resistant polymer cover.</p> <p>The instrument gauge cluster shall be surrounded with a high impact ABS plastic contoured to the same shape of the instrument gauge cluster.</p> <p>The officer side dash shall be a flat top design with an upper beveled edge to provide easy maintenance and shall be constructed out of aluminum and painted to match the cab interior.</p> <p><u>MOUNTING PLATE ON ENGINE TUNNEL</u> Equipment installation provisions shall be installed on the engine tunnel.</p> <p>A 0.188" smooth aluminum plate shall be bolted to the top surface of the engine tunnel. The plate shall follow the contour of the engine tunnel and shall run the entire length of the engine</p>		

	Bidder Complies	
	Yes	No
<p>tunnel. The plate shall be spaced off the engine tunnel .75" to allow for wire routing below the plate.</p> <p>The mounting surface shall be painted to match the cab interior.</p> <p><u>COMPUTER MOUNTING</u></p> <p>There shall be one (1) computer installation provision(s) installed officer side front dash .</p> <p>The tray shall be constructed of stainless steel. The tray shall be supplied with two (2) straps over the top connected to footman loops. These straps shall secure the computer in place during travel.</p> <p>The slides are non-locking in the extended position and shall be mounted horizontally.</p> <p><u>CAB INTERIOR</u></p> <p>The cab interior shall be constructed of primarily metal (painted aluminum) to withstand the severe duty cycles of the fire service.</p> <p>The engine tunnel shall be painted aluminum to match the cab interior.</p> <p>For durability and ease of maintenance, the cab interior side walls shall be painted aluminum. The rear wall shall be painted aluminum.</p> <p>Headliner shall be installed in both forward and rear cab sections. Headliner material shall be vinyl. A sound barrier shall be part of its composition. Material shall be installed on aluminum sheet and securely fastened to interior cab ceiling.</p> <p>Forward portion of cab headliner shall permit easy access for service of electrical wiring or other maintenance needs.</p> <p>All wiring shall be placed in metal raceways. Routing through holes in tubing shall not be accepted due to chaffing that installation shall cause.</p> <p><u>CAB INTERIOR UPHOLSTERY</u></p> <p>The cab interior upholstery shall be 36 oz dark silver gray vinyl.</p> <p><u>CAB INTERIOR PAINT</u></p> <p>The cab interior metal surfaces, excluding the rear heater panels, shall be painted fire smoke gray, vinyl texture paint.</p> <p>The rear heater panels shall be painted black, vinyl textured paint.</p> <p><u>CAB FLOOR</u></p> <p>A small blister shall be provided at the rear of the engine tunnel for chassis components. The blister shall be coated with black UL-LX® polyurethane/polyurea elastomer abrasive resistant material.</p>		

	Bidder Complies	
	Yes	No
<p>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 0.25" thick closed cell foam (no water absorption) which offers a sound dampening material for reducing sound levels.</p> <p><u>DEFROST/AIR CONDITIONING SYSTEM</u></p> <p>A ceiling mounted combination heater, defroster and air conditioning system shall be installed in the cab above the engine tunnel area.</p> <p><u>Cab Defroster</u></p> <p>A 54,000 BTU heater-defroster unit with 690 SCFM of air flow shall be provided inside the cab. The heater-defrost shall be installed in the forward portion of the cab ceiling. Air outlets shall be strategically located in the cab header extrusion per the following:</p> <ul style="list-style-type: none"> • One (1) adjustable shall be directed towards the left side cab window • One (1) adjustable shall be directed towards the right side cab window • Six (6) fixed outlets shall be directed at the windshield <p>The defroster shall be capable of clearing 98 percent of the windshield and side glass when tested under conditions where the cab has been cold soaked at 0 degrees Fahrenheit for 10 hours, and a 2 ounce per square inch layer of frost/ice has been able to build up on the exterior windshield. The defroster system shall meet or exceed SAE J382 requirements.</p> <p><u>Cab/Crew Auxiliary Heater</u></p> <p>There shall be one (1) 31,000 BTU auxiliary heater with 560 SCFM of air flow provided in each outboard rear facing seat risers with a dual scroll blower. An aluminum plenum incorporated into the cab structure used to transfer heat to the forward positions.</p> <p><u>Air Conditioning</u></p> <p>A condenser shall be a 59,644 BTU output that meets and exceeds the performance specification shall be mounted on the radiator. Mounting the condenser below the cab or body would reduce the performance of the system and shall not be acceptable.</p> <p>The air conditioning system shall be capable of cooling the average cab temperature from 100 degrees Fahrenheit to 75 degrees Fahrenheit at 50 percent relative humidity within 30 minutes. The cooling performance test shall be run only after the cab has been heat soaked at 100 degrees Fahrenheit for a minimum of 4 hours.</p> <p>The evaporator unit shall be installed in the rear portion of the cab ceiling over the engine tunnel. The evaporator shall include one (1) high performance heating core, one (1) high performance cooling core with (1) plenum directed to the front and one (1) plenum directed to the rear of the cab. The rear plenum shall be covered with a formed plastic cover.</p>		

	Bidder Complies	
	Yes	No
<p>The evaporator unit shall have a 52,000 BTU at 690 SCFM rating that meets and exceeds the performance specifications.</p> <p>Adjustable air outlets shall be strategically located on the forward plenum cover per the following:</p> <ul style="list-style-type: none"> • Four (4) shall be directed towards the seating position on the left side of the cab • Four (4) shall be directed towards the seating position on the right side of the cab <p>Adjustable air outlets shall be strategically located on the rear plenum cover per the following:</p> <ul style="list-style-type: none"> • Minimum of five (5) shall be directed towards crew cab area <p>A high efficiency particulate air (HEPA) filter shall be included for the system. Access to the filter cover shall be secured with four (4) screws.</p> <p>The air conditioner refrigerant shall be R-134A and shall be installed by a certified technician.</p> <p><u>Climate Control</u></p> <p>An automotive style controller shall be provided to control the heat and air conditioning system within the cab. The controller shall have three (3) functional knobs for fan speed, temperature, and air flow distribution (front to rear) control.</p> <p>The system shall control the temperature of the cab and crew cab automatically by pushing the center of the fan speed control knob. Rotate the center temperature control knob to set the cab and crew cab temperature.</p> <p>The AC system shall be manually activated by pushing the center of the temperature control knob. Pushing the center of the air flow distribution knob shall engage the AC for max defrost, setting the fan speeds to 100 percent and directing all air flow to the overhead forward position.</p> <p>The system controller shall be located within panel position #12.</p> <p><u>Gravity Drain Tubes</u></p> <p>Two (2) condensate drain tubes shall be provided for the air conditioning evaporator. The drip pan shall have two (2) drain tubes plumbed separately to allow for the condensate to exit the drip pan. No pumps shall be provided.</p> <p><u>WINDOW DEFROST FANS</u></p> <p>Two (2) window defrost fans shall be mounted on the ceiling of the cab, located 1 officer side 1 driver side .</p> <p><u>SUN VISORS</u></p> <p>Two (2) smoked Lexan™ sun visors shall be provided. The sun visors shall be located above the windshield with one (1) mounted on each side of the cab.</p>		

	Bidder Complies	
	Yes	No
<p>There shall be a polished stainless steel bracket provided to help secure each sun visor in the stowed position.</p> <p><u>GRAB HANDLES</u></p> <p>A black rubber covered grab handle shall be mounted on the door post of the driver and officer's side cab door to assist in entering the cab. The grab handles shall be securely mounted to the post area between the door and windshield.</p> <p><u>ENGINE COMPARTMENT LIGHTS</u></p> <p>There shall be one (1) Whelen, Model 3SC0CDCR, 12 volt DC, 3.00" white LED light(s) with Whelen, Model 3FLANGEC, chrome flange kit(s) installed under the cab to be used as engine compartment illumination.</p> <p>These light(s) shall be activated automatically when the cab is raised.</p> <p><u>ACCESS TO ENGINE DIPSTICKS</u></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.</p> <p>The engine oil dipstick shall allow for checking only. The transmission dipstick shall allow for both checking and filling.</p> <p>The door shall have a rubber seal for thermal and acoustic insulation. One (1) lift and turn latch shall be provided on the access door.</p> <p><u>MAP BOX</u></p> <p>There shall be one (1) map box(es) with three (3) bins, open at top. The map box(es) shall be installed at final inspection. The map box(es) shall be divided into three (3) bins, each being 12.50" wide x 3.00" high x 12.00" deep. Each bin shall slant 30 degrees from horizontal. The map box(es) shall be constructed of 0.125" aluminum and shall be painted to match the cab interior.</p> <p><u>SEATING CAPACITY</u></p> <p>The seating capacity in the cab shall be six (6).</p> <p><u>DRIVER SEAT</u></p> <p>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>		

	Bidder Complies	
	Yes	No
<p>The seat shall be furnished with a 3-point, shoulder type seat belt.</p> <p><u>OFFICER SEAT</u></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).</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 3-point, shoulder type seat belt.</p> <p><u>RADIO COMPARTMENT</u></p> <p>A radio compartment shall be provided under the officer's seat.</p> <p>The inside compartment dimensions shall be 16.00" wide x 7.50" high x 15.00" deep, with the back of the compartment angled up to match the cab structure.</p> <p>A drop-down door with one (1) 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><u>REAR FACING DRIVER SIDE OUTBOARD SEAT</u></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).</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 3-point, shoulder type seat belt.</p> <p><u>REAR FACING PASSENGER SIDE OUTBOARD SEAT</u></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).</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>		

	Bidder Complies	
	Yes	No
<p>The seat shall be furnished with a 3-point, shoulder type seat belt.</p> <p><u>FORWARD FACING DRIVER SIDE OUTBOARD SEAT</u></p> <p>There shall be one (1) forward facing flip-up seat provided at the driver side outboard position in the crew cab. The seat back shall have a plywood backing, covered with foam padded upholstery. The seat bottom shall be constructed of a piece of plywood covered with foam rubber and upholstery. The bottom cushion shall have its bottom covered with brushed stainless steel, for a pleasant appearance when the seat bottom is in the up position.</p> <p>The seat shall be furnished with a 3-point, shoulder type seat belt.</p> <p><u>FORWARD FACING CENTER SEATS</u></p> <p>There shall be two (2) forward facing seats provided at the center position in the crew cab. For optimal comfort, the seats shall be provided with 15.00" deep foam cushions designed with EVC (elastomeric vibration control).</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 seats shall be furnished with a 3-point, shoulder type seat belt.</p> <p><u>SEAT UPHOLSTERY</u></p> <p>All seat upholstery shall be black Turnout Tuff material.</p> <p><u>AIR BOTTLE HOLDERS</u></p> <p>All SCBA type seats in the cab shall have a "Hands-Free" auto clamp style bracket in its backrest. For efficiency and convenience, the bracket shall include an automatic spring clamp that allows the occupant to store the SCBA bottle by simply pushing it into the seat back. For protection of all occupants in the cab, in the event of an accident, the inertial components within the clamp shall constrain the SCBA bottle in the seat and shall exceed the NFPA standard of 9G. Bracket designs with manual restraints (belts, straps, buckles) that could be inadvertently left unlocked and allow the SCBA to move freely within the cab during an accident, shall not be acceptable.</p> <p>There shall be a quantity of five (5) SCBA brackets.</p> <p><u>SEAT BELTS</u></p> <p>All cab and tiller cab (if applicable) seating positions shall have red seat belts. To provide quick, easy use for occupants wearing bunker gear, the female buckle and seat belt webbing length shall meet or exceed the current edition of NFPA 1901 and CAN/ULC - S515 standards.</p> <p>The 3-point shoulder type seat belts shall include height adjustment. This adjustment shall optimize the belts effectiveness and comfort for the seated firefighter. The 3-point shoulder type</p>		

	Bidder Complies	
	Yes	No
<p>seat belts shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p>The 3-point shoulder type belts shall also include the ReadyReach D-loop assembly to the shoulder belt system. The ReadyReach feature adds an extender arm to the D-loop location placing the D-loop in a closer, easier to reach location.</p> <p>Any flip up seats shall include a 3-point shoulder type belts only.</p> <p>To ensure safe operation, the seats 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><u>HELMET STORAGE PROVIDED BY FIRE DEPARTMENT</u></p> <p>NFPA 1901, 2016 edition, section 14.1.7.4.1 requires a location for helmet storage be provided.</p> <p>There is no helmet storage on the apparatus as manufactured. The fire department shall provide a location for storage of helmets.</p> <p><u>CAB DOME LIGHTS</u></p> <p>There shall be four (4) dual LED dome lights with black bezels provided. Two (2) lights shall be mounted above the inside shoulder of the driver and officer and two (2) lights shall be installed and located, one (1) on each side of the crew cab.</p> <p>The color of the LED's shall be red and white.</p> <p>The white LED's shall be controlled by the door switches and the lens switch.</p> <p>The color LED's shall be controlled by the lens switch.</p> <p>In order to ensure exceptional illumination, each white LED dome light shall provide a minimum of 10.1 foot-candles (fc) covering an entire 20.00" x 20.00" square seating position when mounted 40.00" above the seat.</p> <p><u>HAND HELD SPOTLIGHT</u></p> <p>There shall be four (4) Streamlight, Model Survivor 90503, LED flashlights with chargers and AC/DC cords provided and installed on engine tunnel at rear.</p> <p><u>CAB INSTRUMENTATION</u></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>		

	Bidder Complies	
	Yes	No
<p><u>Gauges</u></p> <p>The gauge panel shall include the following ten (10) black faced gauges with black bezels to monitor vehicle performance:</p> <ul style="list-style-type: none"> • Voltmeter gauge (volts): <ul style="list-style-type: none"> ○ Low volts (11.8 VDC) <ul style="list-style-type: none"> ▪ Amber telltale light on indicator light display with steady tone alarm ○ High volts (15.5 VDC) <ul style="list-style-type: none"> ▪ Amber telltale light on indicator light display with steady tone alarm • Engine Tachometer (RPM) • Speedometer MPH (Major Scale), KM/H (Minor Scale) • Fuel level gauge (Empty - Full in fractions): <ul style="list-style-type: none"> ○ Low fuel (1/8 full) <ul style="list-style-type: none"> ▪ Amber indicator light in gauge dial with steady tone alarm • Engine Oil pressure Gauge (PSI): <ul style="list-style-type: none"> ○ Low oil pressure to activate engine warning lights and alarms <ul style="list-style-type: none"> ▪ Red indicator light in gauge dial with steady tone alarm • Front Air Pressure Gauges (PSI): <ul style="list-style-type: none"> ○ Low air pressure to activate warning lights and alarm <ul style="list-style-type: none"> ▪ Red indicator light in gauge dial with steady tone alarm • Rear Air Pressure Gauges (PSI): <ul style="list-style-type: none"> ○ Low air pressure to activate warning lights and alarm <ul style="list-style-type: none"> ▪ Red indicator light in gauge dial with steady tone alarm • Transmission Oil Temperature Gauge (Fahrenheit): <ul style="list-style-type: none"> ○ High transmission oil temperature activates warning lights and alarm <ul style="list-style-type: none"> ▪ Amber indicator light in gauge dial with steady tone alarm • Engine Coolant Temperature Gauge (Fahrenheit): <ul style="list-style-type: none"> ○ High engine temperature activates an engine warning light and alarms <ul style="list-style-type: none"> ▪ Red indicator light in gauge dial with steady tone alarm • Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions): <ul style="list-style-type: none"> ○ Low fluid (1/8 full) <ul style="list-style-type: none"> ▪ Amber indicator light in gauge dial <p><u>Indicator Lamps</u></p> <p>To promote safety, the following telltale indicator lamps shall be located on the instrument panel in clear view of the driver. The indicator lamps shall be "dead-front" design that is only visible when active. The colored indicator lights shall have descriptive text or symbols.</p> <p>The following amber telltale lamps shall be present:</p> <ul style="list-style-type: none"> • Low coolant • Trac cntl (traction control) (where applicable) • Check engine 		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Check trans (check transmission) • Air rest (air restriction) • DPF (engine diesel particulate filter regeneration) • HET (engine high exhaust temperature) (where applicable) • ABS (antilock brake system) • MIL (engine emissions system malfunction indicator lamp) (where applicable) • Regen inhibit (engine emissions regeneration inhibit) (where applicable) • Side roll fault (where applicable) • Front air bag fault (where applicable) • Aux brake overheat (auxiliary brake overheat) (where applicable) • The following red telltale lamps shall be present: • Ladder rack down • Parking brake • Stop engine • The following green telltale lamps shall be present: • Left turn • Right turn • Battery on • Ignition • Aux brake (auxiliary brake engaged) (where applicable) • The following blue telltale lamps shall be present: • High beam <p><u>Alarms</u></p> <p>Audible steady tone warning alarm: A steady audible tone alarm shall be provided whenever a warning condition is active.</p> <p><u>Indicator Lamp and Alarm Prove-Out</u></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 for 3 to 5 seconds when the ignition switch is moved to the on position with the battery switch on.</p> <p><u>Control Switches</u></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 back lighting intensity control switch: A three (3)-position momentary rocker switch shall be provided. Pressing the top half of the switch, "Panel Up" increases the panel back lighting</p>		

	Bidder Complies	
	Yes	No
<p>intensity and pressing the bottom half of the switch, "Panel Down" decreases the panel back lighting intensity. Pressing the half or bottom half of the switch several times shall allow back lighting intensity to be gradually varied from minimum to maximum intensity level for ease of use.</p> <p>Ignition switch: A three (3)-position maintained/momentary rocker switch shall be provided. The first switch position shall turn off and deactivate vehicle ignition. The second switch position shall activate vehicle ignition and shall perform prove-out on the telltale indicators and alarms for 3 to 5 seconds after the switch is turned on. A green indicator lamp is activated with vehicle ignition. The third momentary position shall temporarily silence all active cab alarms. An alarm "chirp" may continue as long as alarm condition exists. Switching ignition to off position shall terminate the alarm silence feature and reset function of cab alarm system.</p> <p>Engine start switch: A two (2)-position momentary rocker switch shall be provided. The first switch position is the default switch position. The second switch position shall activate the vehicle's engine. The switch actuator is designed to prevent accidental activation.</p> <p>Hazard switch shall be provided on the instrument panel or on the steering column.</p> <p>Heater, defrost, and air conditioning control panel.</p> <p>Turn signal arm: A self-canceling turn signal with high beam headlight controls.</p> <p>Windshield wiper control shall have high, low, and intermittent modes.</p> <p>Parking brake control: An air actuated push/pull park brake control.</p> <p>Chassis horn control: Activation of the chassis horn control shall be provided through the center of the steering wheel.</p> <p>High idle engagement switch: A maintained rocker switch with integral indicator lamp shall be provided. The switch shall activate and deactivate the high idle function. The "OK To Engage High Idle" indicator lamp must be active for the high idle function to engage. A green indicator lamp integral to the high idle engagement switch shall indicate when the high idle function is engaged.</p> <p>"OK To Engage High Idle" indicator lamp: A green indicator light shall be provided next to the high idle activation switch to indicate that the interlocks have been met to allow high idle engagement.</p> <p>Emergency switching shall be controlled by multiple individual warning light switches for various groups or areas of emergency warning lights. An Emergency Master switch provided on the instrument panel that enables or disables all individual warning light switches is included.</p>		

	Bidder Complies	
	Yes	No
<p>An additional "Emergency Master" button shall be provided on the lower left hand corner of the gauge panel to allow convenient control of the "Emergency Master" system from inside the driver's door when standing on the ground.</p> <p><u>Custom Switch Panels</u></p> <p>The design of cab instrumentation shall allow for emergency lighting and other switches to be placed within easy reach of the operator thus improving safety. There shall be positions for up to four (4) switch panels in the lower instrument console and up to six (6) switch panels in the overhead visor console. All switches have backlit labels for low light conditions.</p> <p><u>Diagnostic Panel</u></p> <p>A diagnostic panel shall be provided and accessible while standing on the ground. The panel shall be located inside the driver's side door left of the steering column. The diagnostic panel shall allow diagnostic tools such as computers to connect to various vehicle systems for improved troubleshooting providing a lower cost of ownership. Diagnostic switches shall allow ABS systems to provide blink codes should a problem exist.</p> <p>The diagnostic panel shall include the following:</p> <ul style="list-style-type: none"> • ENGINE/TRANSMISSION/ABS J1939 Diagnostic Port • ABS Diagnostic Switch and Indicator - The switch and amber indicator shall allow access to diagnostic mode and display of standard ABS system fault blink codes that may be generated by the ABS system • DPF REGEN (Diesel Particulate Filter Regeneration Switch) (where applicable) shall be provided to request regeneration of the engine emission system. An amber indicator shall be provided on top of the switch that shall illuminate in a "CHECK ENGINE" condition • REGEN INHIBIT (Diesel Particulate Filter Regeneration Inhibit Switch) (where applicable) shall be provided that shall request that regeneration be temporarily prevented. A green indicator shall be provided on top of the Regen Inhibit switch that shall illuminate when the Regen Inhibit feature is active. Regen Inhibit shall be disabled upon cycling of the ignition switch to the off state. <p><u>AIR RESTRICTION INDICATOR</u></p> <p>A high air restriction warning indicator light (electronic) shall be provided.</p> <p><u>"DO NOT MOVE APPARATUS" INDICATOR</u></p> <p>A flashing red indicator light, located in the driving compartment, shall be illuminated automatically per the current NFPA requirements. The light shall be labeled "Do Not Move Apparatus If Light Is On."</p> <p>The same circuit that activates the Do Not Move Apparatus indicator shall activate a pulsing alarm when the parking brake is released.</p>		

	Bidder Complies	
	Yes	No
<p><u>SWITCH PANELS</u></p> <p>The built-in switch panels shall be located in the lower console or overhead console of the cab. Switches shall be rocker type with an indicator light, of which is an integral part of the switch.</p> <p><u>WIPER CONTROL</u></p> <p>Wiper control shall consist of a two (2)-speed windshield wiper control with intermittent feature and windshield washer controls. The control shall be located on the left side of the center instrument panel.</p> <p><u>SPARE CIRCUIT</u></p> <p>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"> • The positive wire shall be connected directly to the battery power • The negative wire shall be connected to ground • Wires shall be protected to 15 amps at 12 volts DC • Power and ground shall terminate on the officer's side of the engine tunnel and on the driver's side of the engine tunnel • Termination shall be a 15 amp power point plug with a rubber cover • Wires shall be sized to 125 percent of the protection <p>There shall be a 48W 2-Port USB-C 3.0 Fast Charger Adapter provided.</p> <p>The circuit(s) may be load managed when the parking brake is set.</p> <p><u>SPARE CIRCUIT</u></p> <p>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"> • The positive wire shall be connected directly to the battery power • The negative wire shall be connected to ground • Wires shall be protected to 15 amps at 12 volts DC • Power and ground shall terminate officer side dash area • Termination shall be with heat shrinkable butt splicing • Wires shall be sized to 125 percent of the protection <p>The circuit(s) may be load managed when the parking brake is set.</p> <p><u>INFORMATION CENTER</u></p> <p>There shall be a LCD display integral to the cab gauge panel provided that shall display the following information:</p>		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Total distance • Trip distance • Total hours • Trip hours • PTO "A" hours • PTO "B" hours <p><u>COLLISION MITIGATION</u></p> <p>There shall be a HAAS Alert®, Model HA5 Responder-to-Vehicle (R2V) collision avoidance system provided on the apparatus. The HA5 cellular transponder module shall be installed behind the cab windshield, as high and near to the center as practical, to allow clear visibility to the sky. The module dimensions are 5.40" long x 2.70" wide x 1.30" high, and operating temperature range is -40 degree C to 85 degree C.</p> <p>The transponder shall be connected to the vehicle's emergency master circuit and battery direct power and ground.</p> <p>While responding with emergency lights on, the HA5 transponder sends alert messages via cellular network to motorists in the vicinity of the responding truck that are equipped with the WAZE app.</p> <p>While on scene with emergency lights on, the HA5 transponder sends road hazard alerts to motorists in the vicinity of the truck that are equipped with the WAZE app.</p> <p>The HA5 Responder-to-Vehicle (R2V) collision avoidance system shall include the transponder and a 5 year cellular plan subscription.</p> <p>Activation of the HAAS Alert system requires a representative of the customer to accept the End User License Agreement (EULA) via an on-line portal.</p> <p><u>VEHICLE DATA RECORDER</u></p> <p>There shall be a vehicle data recorder (VDR) capable of reading and storing vehicle information provided.</p> <p>The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A USB cable can be used to connect the VDR to a laptop to retrieve required information. The program to download the information from the VDR will be available to download on-line.</p> <p>The vehicle data recorder shall be capable of recording the following data via hardwired and/or CAN inputs:</p> <ul style="list-style-type: none"> • Vehicle Speed - MPH • Acceleration - MPH/sec • Deceleration - MPH/sec 		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Engine Speed - RPM • Engine Throttle Position - % of Full Throttle • ABS Event - On/Off • Seat Occupied Status - Yes/No by Position • Seat Belt Buckled Status - Yes/No by Position • Master Optical Warning Device Switch - On/Off • Time - 24 Hour Time • Date - Year/Month/Day <p><u>Seat Belt Monitoring System</u></p> <p>A seat belt monitoring system (SBMS) shall be provided. The SBMS shall be capable of monitoring up to 10 seating positions indicating the status of each seat position per the following:</p> <ul style="list-style-type: none"> • Seat Occupied & Buckled = Green LED indicator illuminated • Seat Occupied & Unbuckled = Red LED indicator with audible alarm • No Occupant & Buckled = Red LED indicator with audible alarm • No Occupant & Unbuckled = No indicator and no alarm <p>The SBMS shall include an audible alarm that shall warn that an unbuckled occupant condition exists and the parking brake is released, or the transmission is not in park.</p> <p><u>RADIO ANTENNA MOUNT</u></p> <p>There shall be one (1) standard 1.125", 18 thread antenna-mounting base(s) installed on the right side on the cab roof with high efficiency, low loss, coaxial cable(s) routed to the instrument panel area. A weatherproof cap shall be installed on the mount.</p> <p><u>SPECIAL WIFI ANTENNA MOUNT LOCATION</u></p> <p>The Command Zone advanced electronics WiFi-GPS antenna shall be relocated from its standard right crewcab roof location forward on the cab roof on the right side. When relocating this antenna it must be located a minimum of nine (9) inches away from any other metallic object.</p> <p><u>VEHICLE CAMERA SYSTEM</u></p> <p>There shall be a color vehicle camera system provided with the following:</p> <ul style="list-style-type: none"> • One (1) camera located at the rear of the apparatus, pointing rearward, displayed automatically with the vehicle in reverse. • One (1) camera located on the right side of the apparatus, pointing rearward, displayed automatically with the right side turn signal. <p>The camera images shall be displayed on a 7.00" LCD display with sun shield located in view of the driver on the dash. The display shall include manual camera activation capability and audio from the rear camera only.</p>		

	Bidder Complies	
	Yes	No
<p>The following components shall be included:</p> <ul style="list-style-type: none"> • One (1) MO700136DC Display • One (1) SV-CW134639CAI Rear camera • One (1) CS134404CI Side camera • All necessary cables <p><u>RECESS REAR CAMERA</u></p> <p>A rear camera recess shall be provided in the center at the rear .</p> <p><u>ELECTRICAL POWER CONTROL SYSTEM</u></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. When required, automotive type fuses conforming to SAE J554, J1284, J1888 or J2077 shall be utilized to protect electronic equipment.</p> <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><u>Voltage Monitor System</u></p> <p>A voltage monitor system shall be provided to indicate the status of each battery system connected to the vehicle's electrical load. The monitor system shall provide visual and audio warning when the system voltage is above or below optimum levels.</p> <p><u>Power and Ground Studs</u></p> <p>Spare circuits shall be provided in the primary distribution center for two-way radio equipment.</p> <p>The spare circuits shall consist of the following:</p> <ul style="list-style-type: none"> • One (1) 12-volt DC, 30 amp battery direct spare 		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> One (1) 12-volt DC ground and un-fused switched battery stud located in or adjacent to the power distribution center <p><u>EMI/RFI Protection</u></p> <p>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><u>ELECTRICAL</u></p> <p>All 12-volt electrical equipment installed by the apparatus manufacturer shall conform to modern automotive practices. All wiring shall be high temperature crosslink type. Wiring shall be run, in loom or conduit, where exposed and have grommets where wire passes through sheet metal. Automatic reset circuit breakers shall be provided which conform to SAE Standards. Wiring shall be color, function and number coded. Function and number codes shall be continuously imprinted on all wiring harness conductors at 2.00" intervals. Exterior exposed wire connectors shall be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids.</p> <p>Electrical wiring and equipment shall be installed utilizing the following guidelines:</p> <ol style="list-style-type: none"> All holes made in the roof shall be caulked with silicon, rope caulk is not acceptable. Large fender washers, liberally caulked, shall be used when fastening equipment to the underside of the cab roof. 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. Electrical components designed to be removed for maintenance shall not be fastened with nuts and bolts. Metal screws shall be used in mounting these devices. Also a coil of wire shall be provided behind the appliance to allow them to be pulled away from mounting area for inspection and service work. 		

	Bidder Complies	
	Yes	No
<p>4. Corrosion preventative compound shall be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections shall require this compound in the plug to prevent corrosion and for easy separation (of the plug).</p> <p>5. All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.</p> <p>6. All electrical terminals in exposed areas shall have silicon applied completely over the metal portion of the terminal.</p> <p>All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard #108, shall be furnished. Rear identification lights shall be recessed mounted for protection. Lights and wiring mounted in the rear bulkheads shall be protected from damage by installing a false bulkhead inside the rear compartments.</p> <p>An operational test shall be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.</p> <p>The results of the tests shall be recorded and provided to the purchaser at time of delivery.</p> <p><u>BATTERY SYSTEM</u></p> <p>There shall be four (4) 12 volt Exide®, Model 31S950X5W, batteries that include the following features shall be provided:</p> <ul style="list-style-type: none"> • 950 CCA, cold cranking amps • 190 amp reserve capacity • High cycle • Group 31 • Rating of 3800 CCA at 0 degrees Fahrenheit • 760 minutes of reserve capacity • Threaded stainless steel studs <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><u>BATTERY SYSTEM</u></p> <p>There shall be a single starting system with an ignition switch and starter button provided and located on the cab instrument panel.</p> <p><u>MASTER BATTERY SWITCH</u></p> <p>There shall be a master battery switch provided within the cab within easy reach of the driver to activate the battery system.</p>		

	Bidder Complies	
	Yes	No
<p>An indicator light shall be provided on the instrument panel to notify the driver of the status of the battery system.</p> <p><u>BATTERY COMPARTMENTS</u></p> <p>Batteries shall be placed on non-corrosive mats and be stored in well-ventilated, unpainted stainless steel compartments located under the cab. (no exceptions)</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><u>JUMPER STUDS</u></p> <p>One (1) set of battery jumper studs with plastic color-coded covers shall be included on the battery compartments.</p> <p><u>BATTERY CHARGER</u></p> <p>There shall be an IOTA™, Model DSL 75, battery charger with IQ4, controller provided.</p> <p>The battery charger shall be wired to the AC shoreline inlet through an AC receptacle adjacent to this battery charger.</p> <p>There shall be a Kusmaul™, Model #091-94-12, remote indicator included.</p> <p>The battery charger shall be located in the left body compartment mounted on the left wall as high as possible.</p> <p>The battery charger indicator shall be located on the driver's seat riser.</p> <p><u>AUTO EJECT FOR SHORELINE</u></p> <p>There shall be one (1) Kusmaul™, Model 091-55-20-120, 20 amp 120 volt AC shoreline inlet(s) provided to operate the dedicated 120 volt AC circuits on the apparatus.</p> <p>The shoreline inlet(s) shall include red weatherproof flip up cover(s).</p> <p>There shall be a release solenoid wired to the vehicle's starter to eject the AC connector when the engine is starting.</p> <p>The shoreline(s) shall be connected to the battery charger.</p> <p>There shall be a mating connector body supplied with the loose equipment.</p> <p>There shall be a label installed near the inlet(s) that state the following:</p> <ul style="list-style-type: none"> • Line Voltage 		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Current Rating (amps) • Phase • Frequency <p>The shoreline receptacle shall be located on the driver side of cab, above wheel.</p> <p><u>ALTERNATOR</u></p> <p>A Leece-Neville, Model BLP4004H, alternator shall be provided. It shall have a rated output current of 350 amp as measured by SAE method J56. The alternator shall feature an integral, self diagnostic regulator and rectifier. The alternator shall be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.</p> <p><u>ELECTRONIC LOAD MANAGEMENT</u></p> <p>An electronic load management (ELM) system that monitors the vehicles 12-volt electrical system, and automatically reduces the electrical load in the event of a low voltage condition and by doing so, ensures the integrity of the electrical system.</p> <p>The ELM shall monitor the vehicle's voltage while at the scene (parking brake applied). It shall sequentially shut down individual electrical loads when the system voltage drops below a preset value. Two (2) separate electrical loads shall be controlled by the load manager. The ELM shall sequentially re-energize electrical loads as the system voltage recovers.</p> <p><u>HEADLIGHTS</u></p> <p>There shall be four (4) JW Speaker®, Model 8800, 4" x 6" rectangular LED lights with heated lens mounted in the front quad style, chrome housing on each side of the cab grille:</p> <ul style="list-style-type: none"> • the outside light on each side shall contain a part number 055***1 low beam module • the inside light on each side shall contain a part number 055***1 high beam module • the headlights to include chrome bezels <p>The low beam lights shall be activated when the headlight switch is on.</p> <p>The high beam and low beam lights shall be activated when the headlight switch and the high beam switch is activated.</p> <p><u>FRONT DIRECTIONALS</u></p> <p>The front directional's shall be Whelen®, Model M62T, 4.31" high x 6.75" wide x 1.37" deep directional lights with amber LEDs. The lens color(s) to be the same as the LEDs. The directional's shall be housed in the same common bezel as the front warning light and shall be located above the headlights. The housing to be polished and the trim shall be chrome.</p> <p>The flash pattern of the directional lights shall be Steady On (Arrow).</p>		

	Bidder Complies	
	Yes	No
<p><u>INTERMEDIATE LIGHT</u></p> <p>There shall be two (2) Weldon, Model 9186-8580-29, amber LED turn signal marker lights furnished, one (1) each side, in the rear fender panel. The light shall double as a turn signal and marker light.</p> <p><u>CAB CLEARANCE/MARKER/ID LIGHTS</u></p> <p>There shall be seven (7) amber LED lights provided per the following:</p> <ul style="list-style-type: none"> • Three (3) amber LED identification lights shall be installed in the center of the cab above the windshield. • Two (2) amber LED clearance lights shall be installed, one (1) on each outboard side of the cab above the windshield as close to the outside of the apparatus as practical. • Two (2) amber LED clearance lights shall be installed, one (1) on each side of the cab as high and far forward as practical. <p>The lights shall be installed without guards.</p> <p><u>FRONT CAB SIDE DIRECTIONAL/MARKER LIGHTS</u></p> <p>There shall be two (2) Weldon, Model 9186-8580-29, amber LED lights installed front of the cab door, one (1) on each side of the cab.</p> <p>The lights shall activate as marker lights with the headlight switch and directional lights with the corresponding directional circuit.</p> <p><u>REAR CLEARANCE/MARKER/ID LIGHTING</u></p> <p>There shall be three (3) Truck-Lite®, Model 26250R, LED lights used as identification lights located at the rear of the apparatus per the following:</p> <ul style="list-style-type: none"> • As close as practical to the vertical centerline • Centers spaced not less than 6.00" or more than 12.00" apart • Red in color • All at the same height <p>There shall be two (2) Truck-Lite, Model 26250R, LED lights installed at the rear of the apparatus used as clearance lights located at the rear of the apparatus per the following:</p> <ul style="list-style-type: none"> • To indicate the overall width of the vehicle • One (1) each side of the vertical centerline • As near the top as practical • Red in color • To be visible from the rear • All at the same height <p>There shall be two (2) Truck-Lite, Model 26250R, LED lights installed on the side of the apparatus as marker lights as close to the rear as practical per the following:</p>		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • To indicate the overall length of the vehicle • One (1) each side of the vertical centerline • As near the top as practical • Red in color • To be visible from the side • All at the same height <p>There shall be two (2) red reflectors located on the rear of the truck facing to the rear. One (1) each side, as far to the outside as practical, at a minimum of 15.00", but no more than 60.00", above the ground.</p> <p>There shall be two (2) red reflectors located on the side of the truck facing to the side. One (1) each side, as far to the rear as practical, at a minimum of 15.00", but no more than 60.00", above the ground.</p> <p>Per FMVSS 108 and CMVSS 108 requirements.</p> <p><u>REAR FMVSS LIGHTING</u></p> <p>There shall be two (2) wrap around tri-cluster LED modules provided on the face of the rear body compartments.</p> <p>Each tri-cluster shall include the following:</p> <ul style="list-style-type: none"> • One (1) LED stop/tail light • One (1) LED directional light • One (1) LED backup light <p><u>LICENSE PLATE BRACKET</u></p> <p>One (1) license plate bracket constructed of stainless steel shall be provided at the rear of the apparatus.</p> <p>One (1) white LED light with chrome housing shall be provided to illuminate the license plate. A stainless steel light shield shall be provided over the light that shall direct illumination downward, preventing white light to the rear.</p> <p><u>BACK-UP ALARM</u></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>		

	Bidder Complies	
	Yes	No
<p><u>CAB PERIMETER SCENE LIGHTS</u></p> <p>There shall be four (4) TecNiq, Model T10-LC00-1, 15.00" lights with white LEDs and 45 degree stainless steel brackets provided per the following:</p> <ul style="list-style-type: none"> • one (1) under the driver's side cab access step • one (1) under the passenger's side cab access step • one (1) under the passenger's side crew cab access step • one (1) under the driver's side crew cab access step <p>The lights shall be activated when the battery switch is on, when the respective door is open and by the same control selected for the body perimeter lights.</p> <p><u>PUMP HOUSE PERIMETER LIGHTS</u></p> <p>There shall be two (2) TecNiq, Model T10-LC00-1, 15.00" white 12 volt DC LED weatherproof strip lights provided under the pump panel running boards, one (1) each side.</p> <p>The lights shall be controlled by the same means as the body perimeter lights.</p> <p><u>BODY PERIMETER SCENE LIGHTS</u></p> <p>There shall be two (2) TecNiq, Model T10-LC00-1, 15.00" 12 volt DC LED strip lights provided at the rear step area of the body, one (1) each side shining to the rear.</p> <p>The perimeter scene lights shall be activated when the parking brake is applied.</p> <p><u>STEP LIGHTS</u></p> <p>There shall be four (4) white LED step lights provided at the rear to illuminate the tailboard/step area.</p> <p>In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.</p> <p>These step lights shall be actuated with the perimeter scene lights.</p> <p>All other steps on the apparatus shall be illuminated per the current edition of NFPA 1901.</p> <p><u>12 VOLT LIGHTING</u></p> <p>There shall be one (1) Whelen® Model P*H2*, 17,750 lumens 12 volt DC light(s) with a combination of flood and spot optics provided on the front visor, centered.</p> <p>The housing(s) painted parts of this light assembly to be white. The light(s) shall be controlled by a switch at the driver's side switch panel and by a switch at the passenger's side switch panel.</p> <p>These light(s) may be load managed when the parking brake is applied.</p>		

	Bidder Complies	
	Yes	No
<p><u>HOSE BED LIGHTS</u></p> <p>There shall be white 12 volt DC LED light strips with stainless steel protective cover, provided to light the hose bed area. Hose Bed lights shall meet the photometric levels listed in NFPA 1901 for Hose Bed lighting requirements.</p> <ul style="list-style-type: none"> • Light strip(s) shall be installed along the upper edge of the left side of the hose bed. • Light strip(s) shall be installed along the upper edge of the right side of the hose bed. <p>The lights shall be activated by a cup switch at the rear of the apparatus no more than 72.00" from the ground.</p> <p><u>REAR WORK AREA LIGHTS</u></p> <p>There shall be two (2) Whelen®, part number 01-066C520-10, 3.00" x 7.00" white LED scene lights installed at the rear of the vehicle, under the tailboard, facing the rear. The lights shall have 12 white LEDs and have no internal optics. The lights shall be mounted on brackets below the truck so as to not interfere with the angle of departure.</p> <p>The lights shall be controlled by a switch at the driver's side switch panel.</p> <p><u>WALKING SURFACE LIGHT</u></p> <p>There shall be Model FRP, 4" round black 12 volt DC LED floodlight(s) with bolt mount provided to illuminate the entire designated walking surface on top of the body.</p> <p>The light(s) shall be activated when the body step lights are on.</p> <p><u>WATER TANK</u></p> <p>Booster tank shall have a capacity of 1000 gallons and be constructed of UV stabilized ultra high impact polypropylene plastic by a manufacturer with a minimum of 20 years experience building tanks, is ISO 9001:2000 certified in all its manufacturing facilities, and has over 50,000 tanks in service.</p> <p>The booster tank shall be a form-fitting design that serves to keep the tank height as low as possible. The tank shall be no wider than 39.00" at the base to allow for greater compartment depth and no wider than 53.00" at the top.</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>		

	Bidder Complies	
	Yes	No
<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 will be sized dependent on the tank to pump plumbing shall be provided at the bottom of the water tank.</p> <p>Sump shall include a drain plug and the tank outlet.</p> <p>Tank shall be installed in a fabricated cradle assembly constructed of structural steel.</p> <p>Sufficient crossmembers shall be provided to properly support bottom of tank. Crossmembers shall be constructed of steel flat bar or rectangular tubing.</p> <p>Tank shall "float" in cradle to avoid torsional stress caused by chassis frame flexing. Rubber cushions, .50" thick x 3.00" wide, shall be placed on all horizontal surfaces that the tank rests on.</p> <p>Stops or other provision shall be provided to prevent an empty tank from bouncing excessively while moving vehicle.</p> <p>Mounting system shall be approved by the tank manufacturer.</p> <p>Fill tower shall be constructed of .50" polypropylene and shall be a minimum of 8.00" wide x 14.00" long.</p> <p>Fill tower shall be furnished with a .25" thick polypropylene screen and a hinged cover.</p> <p>An overflow pipe, constructed of 4.00" schedule 40 polypropylene, shall be installed approximately halfway down the fill tower and extend through the water tank and exit to the rear of the rear axle.</p> <p><u>TANK CRADLE</u></p> <p>The water tank shall be installed in a fabricated cradle assembly constructed of stainless steel. (no exceptions)</p>		

	Bidder Complies	
	Yes	No
<p>Sufficient crossmembers shall be provided to properly support bottom of tank. Crossmembers shall be constructed of stainless steel bar channel or rectangular tubing.</p> <p><u>SLEEVE, PLUMBING, THROUGH TANK</u></p> <p>One (1) sleeve shall be provided in the water tank for a 3.00" pipe to the rear.</p> <p><u>BODY HEIGHT</u></p> <p>The height of the body shall be 92.00" from the bottom of the body to the top of the body.</p> <p><u>HOSE BED</u></p> <p>The hose bed shall be fabricated of .125"-5052 aluminum with a nominal 38,000 psi tensile strength.</p> <p>Flooring of the hose bed shall be removable aluminum grating with the top surface corrugated to aid in hose aeration. The grating slats shall be a minimum of 0.50" x 4.50" with spacing between slats for hose ventilation.</p> <p>The hose bed walls shall be unpainted and with a brushed finish.</p> <p>Hose bed shall accommodate 4 INCH LDH 1000 FEET 2.5 INCH 250 FEET 2.5 INCH 250 FEET 1.75 INCH 200 FEET 1.75 INCH 200 FEET.</p> <p><u>HOSE BED DIVIDER</u></p> <p>Four (4) hosebed dividers shall be furnished for separating hose.</p> <p>Each divider shall be constructed of a .125" brushed aluminum sheet fitted and fastened into a slotted, 1.50" diameter radiused extrusion along the top, bottom, and rear edge.</p> <p>Divider shall be fully adjustable by sliding in tracks, located at the front and rear of the hose bed.</p> <p>Divider shall be held in place by tightening bolts, at each end.</p> <p>Acorn nuts shall be installed on all bolts in the hose bed which have exposed threads.</p> <p><u>HOSE BED HOSE RESTRAINT</u></p> <p>The hose in the hose bed shall be restrained by a pair of black nylon Velcro® straps at the top of the hose bed. At the rear of the hose bed, 2.00" black nylon webbing with a 1.50" x 4.00" box pattern shall attach at the top rear outside corners with seat belt buckle fasteners. The webbing shall have straps connected with seat belt buckle fasteners located at the rear body sheet below the hose bed.</p> <p><u>RUNNING BOARDS</u></p> <p>A running board shall be provided on each side of the front body to allow access to the backboard/crosslay storage area. The running boards shall be designed with a grip pattern punched into .125" bright aluminum treadplate material providing support, slip resistance, and drainage.</p>		

	Bidder Complies	
	Yes	No
<p><u>TAILBOARD</u></p> <p>The tailboard shall be constructed of .125" bright aluminum treadplate and spaced .50" from the body, as well as supported by a structural steel assembly.</p> <p>The tailboard area shall be 12.00" deep and full width of the body.</p> <p>The exterior side shall be flanged down and in for increased rigidity of tailboard structure.</p> <p><u>REAR WALL, BODY MATERIAL, PUC</u></p> <p>The rear wall shall be smooth and the same material as the body.</p> <p>The rear wall body material shall be painted. Unpainted aluminum overlays shall be provided to allow for chevron application and to provide continuously smooth rear wall panels.</p> <p>The outboard edges of the rear wall shall be trimmed in polished stainless steel.</p> <p><u>TOW BAR</u></p> <p>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><u>COMPARTMENTATION</u></p> <p>The apparatus body shall be built of aluminum construction using a minimum of 0.125" thick, 5052-H32 aluminum.</p> <p>The body panel assembly shall be constructed in a fixture and consist of formed sheet metal for the front and rear bulkheads, door frames, floors, ceilings, and back walls. These parts shall be welded together to ensure greatest longevity with no visible welds in compartment interior.</p> <p>Welded construction shall consist of 1.00" x 0.38" engineered plug weld holes that control the size, location, and the amount of weld required. The bodies shall be assembled and welded from engineered prints that call out the size, location, and type of weld required.</p> <p>In structural areas the sheet metal components shall have flanges for welding. No butt joints shall be allowed. Gussets and support posts shall be provided for additional strength where needed.</p>		

	Bidder Complies	
	Yes	No
<p>The fender panel shall be an integral part of the complete welded body assembly. All light and compartment holes are pre punched prior to construction to provide accuracy and rounded corners to prevent stress risers in the material.</p> <p>Circular fender liners shall be provided. For prevention of paint chips and ease of suspension maintenance the fender liners shall be formed from brush finished 304L stainless steel, be unpainted, and removable for suspension maintenance (no exception).</p> <p>Side compartment flooring shall be of the sweep out design with the floor minimum of 1.00" higher than the compartment door lip.</p> <p>Drip protection shall be provided above the doors by means of aluminum extrusion, or formed bright aluminum treadplate.</p> <p>The top of the compartment shall be sheet metal and covered with bright aluminum treadplate rolled over the edges on the front, and rear. These covers shall have the corners welded.</p> <p>The aluminum treadplate covers shall not make up the ceiling of the compartment (no exception).</p> <p>All screws and bolts, which are not Grade 8, shall be stainless steel and where they protrude into a compartment shall have acorn nuts on the ends to prevent injury.</p> <p><u>UNDERBODY SUPPORT SYSTEM</u></p> <p>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> <p>The backbone of the body support system shall begin with the chassis frame rails which is the strongest component of the chassis and is designed for sustaining maximum loads. The support system shall include lateral frame rail extensions that are formed from 0.375" 80k high strength steel and bolted to the chassis frame rails with 0.625" diameter Grade 8 bolts.</p> <p>The vertical and horizontal members of the frame rail extensions are to be reinforced with welded gussets and extend to the outside edge of the body. The lateral frame extensions shall be electro-coated for superior corrosion resistance.</p> <p>The floating substructure shall be separated from the lateral frame extensions with neoprene elastomer isolators. These isolators shall reduce the natural flex stress of the chassis from being transmitted to the body, and absorb road shock and vibration.</p> <p>The isolators shall have a broad load range, proven viability in vehicular applications, be of a fail safe design and allow for all necessary movement in three (3) transitional and rotational modes.</p> <p>The neoprene isolators shall be installed in a modified V three (3)-point mounting pattern to reduce the natural flex of the chassis being transmitted to the body. Two (2) 3.50" diameter isolators are provided at the front of the body near the centerline of the vehicle above the</p>		

	Bidder Complies	
	Yes	No
<p>chassis frame. A minimum of eight (8) - 2.55" diameter isolators shall be provided, two (2) under each front compartment and two (2) under each rear side compartment. A minimum of four (4) 3.50" diameter isolators shall be provided under the rear compartment.</p> <p>A design with body compartments simply hanging/sitting on the chassis in an unsupported (cantilever) fashion shall not be acceptable.</p> <p><u>AGGRESSIVE WALKING SURFACE</u></p> <p>All exterior surfaces designated as stepping, standing, and walking areas shall comply with the required average slip resistance of the current NFPA standards. Documentation of the material meeting the standard shall be provided at time of delivery.</p> <p><u>LOUVERS</u></p> <p>All body compartments shall have a minimum of one (1) set of automotive style, dust resistant louvers pressed into a wall. The louvers shall incorporate a one (1)-way rubber valve that provides airflow out of the compartment and prevents water and dirt from gaining access to the compartment. Compartments over the wheel shall not have louvers.</p> <p><u>TESTING OF BODY DESIGN</u></p> <p>Body structural analysis shall be fully tested. Proven engineering and test techniques such as finite element analysis and strain gauging have been performed with special attention given to fatigue life and structural integrity of the body and substructure.</p> <p>The body shall be tested while loaded to its greatest in-service weight.</p> <p>The criteria used during the testing procedure shall include:</p> <ul style="list-style-type: none"> • Raising opposite corners of the vehicle tires 9.00" to simulate the twisting a truck may experience when driving over a curb. • Making a 90 degree turn, while driving at 20 mph to simulate aggressive driving conditions. • Driving the vehicle on at 35 mph on a washboard road. • Driving the vehicle at 55 mph on a smooth road. • Accelerating the vehicle fully, until reaching the approximate speed of 45 mph on rough pavement. <p>Evidence of the actual testing techniques shall be made available upon request.</p> <p>FEA shall have been performed on all substructure components.</p> <p><u>LEFT SIDE COMPARTMENTATION</u></p> <p>The left side compartmentation shall consist of three rollup door compartments.</p> <p>A full height, rollup door compartment ahead of the rear wheels shall be provided. The pump operator's panel shall be located in this compartment. The partition to the right of the pump</p>		

	Bidder Complies	
	Yes	No
<p>operator's panel shall be 2.50" in width. The interior dimensions of the remaining space in this compartment shall be 25.25" wide x 53.63" high x 26.00" deep. The clear door opening shall be a minimum of 59.25" wide x 53.63" high.</p> <p>A rollup door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 60.00" wide x 22.88" high x 26.00" deep. The clear door opening shall be a minimum of 57.25" wide x 22.88" high.</p> <p>A full height, rollup door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 51.75" wide x 54.63" high x 26.00" deep. The clear door opening shall be a minimum of 49.25" wide x 54.63" high.</p> <p>The roll up door spool shall be installed in a recess above the compartment ceiling. All compartments shall include a drip pan below the roll of the door. The drip pan shall be installed level with the compartment ceiling. The interior height of the compartments shall be measured from the compartment floor to the ceiling. The depth of the compartments shall be measured from the back wall to the inside of the door frame.</p> <p>Closing of the doors shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p><u>RIGHT SIDE COMPARTMENTATION</u></p> <p>A full height, jump off compartment with a roll-up door ahead of the rear wheels shall be provided, as convenient large storage compartment for often used items for the crew. The interior dimensions of this compartment shall be 62.00" wide x 54.50" high x 25.88" deep. The area behind the roll up door spool shall be notched for exterior storage or larger capacity water tank tee. 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 59.00" wide x 54.50 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 60.00" wide x 23.00" high x 25.88" deep. The area behind the roll up door spool shall be notched for exterior storage or larger capacity water tank tee. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 57.00" wide x 23.00" 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>A full height, roll-up door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 52.00" wide x 54.50" high x 25.88" deep. The area</p>		

	Bidder Complies	
	Yes	No
<p>behind the roll up door spool shall be notched for exterior storage or larger capacity water tank tee. 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 49.00" wide x 54.50" 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>All compartments shall include a drip pan below the roll of the door.</p> <p><u>SIDE COMPARTMENT ROLLUP DOOR(S)</u></p> <p>There shall be six (6) compartment doors installed on the side compartments. The doors shall be double faced aluminum construction, painted one (1) color to match the lower portion of the body and manufactured by Gortite®.</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 180 to -40 degrees Fahrenheit. Side, top and bottom seals shall be provided to resist ingress of dirt and weather and be made of Santoprene.</p> <p>All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from 300 to -40 degrees Fahrenheit. Hardened plastic shall not be acceptable.</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 rollup door assembly shall not exceed 4.00".</p> <p>A heavy-duty magnetic switch shall be used for control of open compartment door warning lights.</p> <p><u>REAR COMPARTMENTATION</u></p> <p>A roll-up door compartment above the rear tailboard shall be provided.</p>		

	Bidder Complies	
	Yes	No
<p>the interior dimensions of this compartment shall be 37.00" wide x 36.50" high x 25.88" deep in the lower 27.00" of the compartment and 15.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 33.88" wide x 26.63" high.</p> <p>A removable access panel shall be furnished on the back wall of the compartment.</p> <p>The rear compartment shall be open into the rear side compartments. The transverse opening shall be a minimum of 22.00" wide x 27.50" high.</p> <p>A drip pan shall be installed below the roll of the door. A guard shall be installed behind the roll of the door. The interior height of the compartment shall be measured from the floor to the ceiling. The depth of the compartment shall be measured from the back wall to the inside of the door frame.</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><u>ROLLUP REAR COMPARTMENT DOOR</u></p> <p>The rear compartment shall have a rollup door. The door shall be double faced aluminum construction, an anodized satin finish and manufactured by 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 180 to -40 degrees Fahrenheit. Side, top and bottom seals shall be provided to resist ingress of dirt and weather and be made of Santoprene.</p> <p>All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from 300 to -40 degrees Fahrenheit. Hardened plastic shall not be acceptable.</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 rollup door assembly shall not exceed 4.00".</p>		

	Bidder Complies	
	Yes	No
<p>A heavy-duty magnetic switch shall be used for control of open compartment door warning lights.</p> <p><u>SCUFFPLATE</u></p> <p>A bright aluminum treadplate scuffplate shall be provided on the bottom opening of the ladder storage compartment access to protect the chevron striping. One (1) scuffplate shall be provided.</p> <p><u>SCUFF PROTECTION</u></p> <p>Clear 3M outdoor grade scuff tape shall be furnished to protect around four (4) door openings on the body. The tape shall be installed on the SCBA COMPARTMENTS FUEL DEF COMPARTMENT .</p> <p><u>COMPARTMENT LIGHTING</u></p> <p>There shall be seven (7) compartment(s) with two (2) white 12 volt DC LED compartment light strips. The dual light strips shall be centered vertically along each side of the door framing. There shall be two (2) light strips per compartment. The dual light strips shall be in all body compartment(s).</p> <p>Any remaining compartments without light strips shall have a 6.00" diameter Truck-Lite, Model: 79384 light. Each light shall have a number 1076 one filament, two wire bulb.</p> <p>Opening the compartment door shall automatically turn the compartment lighting on.</p> <p><u>MOUNTING TRACKS</u></p> <p>There shall be recessed tracks installed vertically to support the adjustable shelf(s).</p> <p>Tracks shall not protrude into any compartment in order to provide the greatest compartment space and widest shelves possible.</p> <p>The tracks shall be provided in each compartment except for the one that contains the pump operator's panel.</p> <p><u>ADJUSTABLE SHELVES</u></p> <p>There shall be 11 shelves with a capacity of 500 lb provided.</p> <p>The shelf construction shall consist of .188" aluminum painted spatter gray with 2.00" sides.</p> <p>Each shelf shall be infinitely adjustable by means of a threaded fastener, which slides in a track.</p> <p>The shelves shall be held in place by .12" thick stamped plated brackets and bolts.</p> <p>The location(s) shall be determined at a later date.</p> <p><u>SLIDE-OUT ADJUSTABLE HEIGHT TRAY</u></p> <p>There shall be one (1) slide-out tray provided.</p>		

	Bidder Complies	
	Yes	No
<p>Each tray shall have 2.00" high sides and a minimum capacity rating of 250 lb in the extended position.</p> <p>Each tray shall be designed to be as wide and as deep as the compartment space shall allow.</p> <p>painted spatter gray</p> <p>Each tray shall be mounted on a pair of side mounted slides. The slide mechanisms shall have ball bearings for ease of operation and years of dependable service. The slides shall be mounted to shelf tracks to allow the tray to be adjustable up and down within the designated mounting location.</p> <p>An automatic lock shall be provided for both the in and out tray positions. The lock trip mechanism shall be located at the front of the tray and shall be easily operated with a gloved hand.</p> <p>The tray(s) shall be located d 3.</p> <p><u>SLIDE-OUT FLOOR MOUNTED TRAY</u></p> <p>There shall be one (1) floor mounted slide-out tray(s) provided.</p> <p>Each tray shall have 2.00" high sides and a minimum capacity rating of 500 lb in the extended position.</p> <p>Each tray shall be constructed of aluminum painted spatter gray</p> <p>There shall be two undermount-roller bearing type slides rated at 250lb each provided. The pair of slides shall have a safety factor rating of 2.</p> <p>To ensure years of dependable service, the slides shall be coated with a finish that is tested to withstand a minimum of 1,000 hours of salt spray per ASTM B117.</p> <p>To ensure years of easy operation, the slides shall require no more than a 50lb force for push-in or pull-out movement when fully loaded after having been subjected to a 40 hour vibration (shaker) test under full load. The vibration drive file shall have been generated from accelerometer data collected from a heavy truck chassis driven over rough gravel roads in an unloaded condition. Proof of compliance shall be provided upon request.</p> <p>Automatic locks shall be provided for both the "in" and "out" positions. The trip mechanism for the locks shall be located at the front of the tray for ease of use with a gloved hand.</p> <p>The location(s) shall be B1.</p> <p><u>TOOL BOARD</u></p> <p>An aluminum tool board shall be provided.</p> <p>It shall be a minimum of .188" thick.</p>		

	Bidder Complies	
	Yes	No
<p>A 1.00" x 1.00" aluminum tube frame shall be welded to the edge of the board. A handhold shall be provided.</p> <p>The board shall be installed on adjustable tracks on a slide out tray. The tracks shall allow side to side adjustment. The board shall be as high as space permits and full length of the tray. The tray is not included in this option.</p> <p>There shall be Three (3) toolboard(s) provided, spatter gray painted , and installed d2p2.</p> <p>One (1) partition, vertically mounted in adjustable tracks, shall be installed in [Location TBD].</p> <p><u>RUB RAIL</u></p> <p>Bottom edge of the side compartments shall be trimmed with a bright aluminum extruded rub rail.</p> <p>Trim shall be 3.12" high with 1.50" flanges turned outward for rigidity.</p> <p>The rub rails shall not be an integral part of the body construction, which allows replacement in the event of damage.</p> <p>Rub rails shall be attached with bolts and spaced from the body with isolators that shall help to absorb any moderate impact without damaging the body.</p> <p><u>BODY FENDER CROWNS</u></p> <p>Polished stainless steel fender crowns shall be provided around the rear wheel openings.</p> <p>A fender liner constructed of unpainted brushed stainless shall be provided to avoid paint chipping. The liners shall be removable to aid in the maintenance of rear suspension components.</p> <p>A dielectric barrier shall be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.</p> <p>The fender crowns shall be held in place with stainless steel screws that thread directly into a composite nut and not directly into the parent body sheet metal to eliminate dissimilar metals contact and greatly reduce the chance for corrosion.</p> <p><u>HARD SUCTION HOSE</u></p> <p>Hard suction hose shall not be required.</p> <p><u>HARD SUCTION HOSE STORAGE</u></p> <p>A total of two (2) fully enclosed hard suction hose compartment(s) shall be provided on the left side and on the right side in the upper area of the body compartments and capable of storing one (1) hard suction hose each.</p> <p>The trough shall be constructed of aluminum.</p>		

	Bidder Complies	
	Yes	No
<p>One (1) smooth aluminum door with a flush lift and turn latch hinged along the inboard edge, shall be provided at the rear of each compartment.</p> <p><u>HANDRAILS</u></p> <p>The handrails shall be 1.25" diameter knurled aluminum to provide a positive gripping surface.</p> <p>Chrome plated end stanchions shall support the handrail. Plastic gaskets shall be used between end stanchions and any painted surfaces.</p> <p>Drain holes shall be provided in the bottom of all vertically mounted handrails..</p> <p>Handrails shall be located on the front of the body in positions needed to meet NFPA requirements.</p> <ul style="list-style-type: none"> Two (2) vertical handrails shall be located at the rear, one on each side of the rear compartment . <p><u>AIR BOTTLE STORAGE (TRIPLE)</u></p> <p>A quantity of two (2) air bottle compartments designed to hold (3) air bottles up to 7.25" in diameter x 26.00" deep shall be provided on the right side forward of the rear wheels and on the right side rearward of the rear wheels. A brushed stainless steel door with a chrome plated flush lift & turn latch shall be provided to contain the air bottle. A dielectric barrier shall be provided between the door hinge, hinge fasteners and the body sheet metal.</p> <p>Inside the compartment, black rubber matting shall be provided.</p> <p><u>AIR BOTTLE COMPARTMENT STRAP</u></p> <p>A strap shall be provided in the air bottle compartment(s) to help contain the air bottles when the vehicle is parked on an incline. The strap shall wrap around the neck and attach to the wall of the compartment.</p> <p><u>AIR BOTTLE STORAGE (SINGLE)</u></p> <p>A quantity of one air bottle compartment, approximately 7.50" wide x 7.50" tall x 26.00" deep, shall be provided on the driver side rearward of the rear wheels. The triangular door shall cover the air bottle opening, the DEF tank access, and fuel fill. The compartment will be square with angled corners. A brushed stainless steel door with a chrome plated flush lift & turn latch shall be provided to contain the air bottle. A dielectric barrier shall be provided between the door hinge, hinge fasteners and the body sheet metal.</p> <p>Inside the compartment, black rubber matting shall be provided.</p>		

	Bidder Complies	
	Yes	No
<p><u>AIR BOTTLE COMPARTMENT STRAP</u></p> <p>A strap shall be provided in the air bottle compartment to help contain the air bottle when the vehicle is parked on an incline. The strap shall wrap around the neck and attach to the wall of the compartment.</p> <p><u>AIR PACK STORAGE</u></p> <p>A total of one (1) air pack compartment(s) shall be provided and located LS Fender. The air pack compartment(s) shall be tapered to match the profile of the space available in the fender. The compartment(s) shall be approximately 15.50" wide at the top and 5.00" wide at the bottom for the wheel cutout. The compartment(s) shall be 15.50" tall at the body side compartment and 6.00" tall at the wheel cutout. The compartment(s) shall be 26.00" deep and have a drain hole.</p> <p>Inside the compartment, black rubber matting shall be provided.</p> <p>A brushed stainless steel hinged door with a chrome plated flush lift & turn latch shall be provided to contain the air pack. A dielectric barrier shall be provided between the door hinge, hinge fasteners and the body sheet metal.</p> <p><u>EXTENSION LADDER</u></p> <p>There shall be a 24' two-section aluminum Duo-Safety Series 900-A extension ladder provided.</p> <p><u>ROOF LADDER</u></p> <p>There shall be a 14' aluminum Duo-Safety Series 775-A roof ladder provided.</p> <p><u>LADDER STORAGE</u></p> <p>The ladders shall be stored inside the upper section of the left side compartments. This ladder rack shall reduce the depth of the upper section in the side compartments.</p> <p>A partition shall be installed inside the compartment on the side of the rack to allow for equipment storage and to conceal the ladders.</p> <p>The ladders shall be banked in separate storage troughs.</p> <p>The ladder storage assembly shall be fabricated of stainless steel track channels to aid in loading and removal of ladders.</p> <p>Rear of the ladder storage area shall have a vertically hinged smooth aluminum door with a D-handle latch to contain the ladders. The door shall be hinged along the inboard edge.</p> <p><u>FOLDING LADDER</u></p> <p>One (1) 10.00' aluminum, Series 585-A, Duo-Safety folding ladder shall be installed.</p> <p><u>FOLDING LADDER/LONG TOOL COMPARTMENT</u></p> <p>A compartment shall be provided, recessed in the upper, inside part of body compartment on the left side. The compartment shall be equipped with a stainless steel trough for the folding ladder and storage for long handle tools.</p>		

	Bidder Complies	
	Yes	No
<p>A door constructed of smooth aluminum and hinged along the outboard edge shall be provided at the rear with a Southco C2 chrome flush latch.</p> <p><u>PIKE POLE PROVIDED BY FIRE DEPARTMENT</u></p> <p>NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) 8 ft or longer pike pole mounted in a bracket fastened to the apparatus.</p> <p>The pike pole is not on the apparatus as manufactured. The fire department shall provide and mount the pike pole.</p> <p>The pike pole(s) shall be a Duo-Safety 10' pike pole.</p> <p><u>PIKE POLE STORAGE</u></p> <p>A aluminum tube with a no notch for an 8' or longer pike pole shall be provided in the upper body compartment on the left side. One (1) pike pole shall require a tube provided in this location.</p> <p><u>6' PIKE POLE PROVIDED BY FIRE DEPARTMENT</u></p> <p>NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) 6' pike pole or plaster hook mounted in a bracket fastened to the apparatus.</p> <p>The pike pole is not on the apparatus as manufactured. The fire department shall provide and mount the pike pole.</p> <p>The pike pole(s) shall be a Duo-Safety 6' pike pole.</p> <p><u>PIKE POLE STORAGE</u></p> <p>A aluminum tube for a 6' pike pole with no notch shall be provided in the upper body compartment on the left side. One (1) pike pole shall require a tube provided in this location.</p> <p><u>LONG TOOL STORAGE</u></p> <p>One (1) compartment shall be provided recessed in the upper section of the right side compartments. The compartment shall be roughly TBD in size. A door shall be provided at the rear of the compartment for access. The door shall be made of smooth aluminum with a flush lift and turn latch. The door shall be hinged along the inboard edge.</p> <p><u>REAR FOLDING STEPS</u></p> <p>Bright finished, non-skid folding steps with a luminescent tread coating, that is rechargeable from any light source and can hold a charge for up to 24 hours, on the stepping surface shall be provided at the rear. The steps can be used as a hand hold with two openings wide enough for a gloved hand.</p> <p><u>PUMP CONTROL PANELS (LEFT SIDE CONTROL)</u></p> <p>Pump controls and gauges shall be located midship at the left side of the apparatus and properly identified.</p>		

	Bidder Complies	
	Yes	No
<p>The main pump operator's control panel shall be completely enclosed and located in the forward section of the body compartment, to protect against road debris and weather elements. The pump operator's panels shall be no more than 31.00" wide, and made in four (4) sections with the center section easily removable with simple hand tools. For the safety of the pump operator, there shall be no discharge outlets or pump inlets located on the main pump operators panel.</p> <p>Layout of the pump control panel shall be ergonomically efficient and systematically organized. The upper section shall contain the master gauges. This section shall be angled down for easy visibility. The center section shall contain the pump controls aligned in two horizontal rows. The pressure control device, engine monitoring gauges, electrical switches, and foam controls (if applicable) shall be located on or adjacent to the center panel, on the side walls for easy operation and visibility. The lower section shall contain the outlet drains.</p> <p>Manual controls shall be easy moving 8" long lever style controls that operate in a vertical, up and down swing motion. These handles shall have a 2.25" diameter knob and be able to lock in place to prevent valve creep under any pressure. Bright finish bezels shall encompass the opening, be securely mounted to the pump operator's panel, and shall incorporate the discharge gauge bezel. Bezel shall be bolted to the panel for easy removal and gauge service. The left side discharges shall be controlled directly at the valve. There shall be no push-pull style control handles. (no exception)</p> <p>Identification tags for the discharge controls shall be recessed within the same bezel. The discharge identification tags shall be color coded, with each discharge having its own unique color.</p> <p>All remaining identification tags shall be mounted on the pump panel in chrome-plated bezels.</p> <p>All discharge outlets shall be color coded and labeled to correspond with the discharge identification tag.</p> <p>The pump panels for the midship discharge and intake ports shall be located ahead of the body compartments with no side discharge or intake higher than the frame rail. The pump panels shall be easily removable with simple hand tools.</p> <p>A recessed cargo area shall be provided at the front of the body, ahead of the water tank above the plumbing.</p> <p><u>PUMP</u></p> <p>Pump shall be a low profile, 1500 gpm single stage midship mounted centrifugal type, mounted below the cab. The pump shall have a 15 percent reserve capacity to allow for extended time between pump rebuild. To ensure efficient pump/vehicle design the capacity to weight ratio shall not be less than 1.5:1. (no exceptions)</p>		

	Bidder Complies	
	Yes	No
<p>The pump casing shall consist of three (3) discharge outlets, one (1) to each side in line with the impeller and one (1) to the rear. The pump casing shall incorporate two (2) water strippers to maintain radial balance.</p> <p>Pump shall be the Class A type.</p> <p>Pump shall be certified to deliver the percentage of rated discharge from draft at pressure indicated below:</p> <ul style="list-style-type: none"> • 100 percent of rated capacity at 150 psi net pump pressure • 70 percent of rated capacity at 200 psi net pump pressure • 50 percent of rated capacity at 250 psi net pump pressure <p>The pump shall have the capacity to deliver the percentage of rated discharge from a pressurized source as indicated below:</p> <ul style="list-style-type: none"> • 135 percent of rated capacity at 100 psi net pump pressure from a 5 psi source <p>Pump body shall be fine-grained gray iron. Pump shall incorporate a heater/cooling jacket integral to the pump housing.</p> <p>The impeller shall be high strength vacuum cast bronze alloy accurately machine balanced and splined to a ten (10) spline stainless steel pump shaft for precision fit, exceptional durability, and efficiency. Double replaceable reverse flow labyrinth type bronze wear ring design shall help to minimize end thrust. The impeller shall be a twisted vane design to create higher lift. No keyed shafts shall be acceptable.</p> <p>The pump shall include o-ring gaskets throughout the pump.</p> <p>Deep groove radial type oversize ball bearings shall be provided. The bearings shall be protected at the openings from road dirt and water with an oil seal and water slinger.</p> <p>The pump shall have a flat, patterned area on the top of the pump intake wye to allow standing for plumbing maintenance. The main inlet manifold shall be 6.00" in diameter and shall have a low profile design to facilitate low crosslays and high flows.</p> <p>For ease of service, the pump housing, intake wye, impeller, mechanical seal, and gear case shall be accessible from above the chassis frame by tilting the cab. Removal of the main inlet wyes shall provide access to the impeller, mechanical seal, and wear ring (no exception).</p> <p>The tank to pump line and the primary discharge line shall be the only piping required to be removed for overhaul.</p> <p>For ease of service and overhaul there shall be no piping or manifolding located directly over the pump (no exception).</p>		

	Bidder Complies	
	Yes	No
<p><u>PUMP MOUNTING</u></p> <p>Pump shall be mounted to the chassis frame rails directly below the crew cab, to minimize wheelbase and facilitate service, using rubber isolators in a modified V pattern that include one (1) central mounted isolators located between the frame rails and one (1) on each side outside the frame rails. The mounting shall allow chassis frame rails to flex independently without damage to the fire pump. Each isolator shall be 2.55" in total outside diameter and shall be rated at 490 lb. The pump shall be completely accessible by tilting the cab with no piping located directly above the pump. (no exceptions)</p> <p><u>MECHANICAL SEALS</u></p> <p>Silicon carbide mechanical seals shall be provided. The seals shall be spring loaded and self-adjusting. The seals shall have a minimum thermal conductivity of 126 W/m*K to run cooler. Seals shall have a minimum hardness of 2800 kg/mm² to be more resistant to wear, and have thermal expansion characteristics of no more than 4.0 X10⁻⁶mm/mm*K to be more resistant to thermal shock.</p> <p><u>PUMP GEAR CASE</u></p> <p>The integrated pump transmission gear case shall use a pressure-lubricated system to cool, lubricate, and filter the oil. The gear case shall be constructed of lightweight aluminum, and impregnated with resin in accordance to MIL Spec MIL-I-17563. A sight glass, accessible by tilting the cab, shall be provided for easy fluid level checks.</p> <p>The gear case shall consist of three (3) gears to drive the pump.(no exceptions)</p> <p><u>CLUTCH</u></p> <p>There shall be a heavy-duty hydraulic clutch mounted directly to the integrated pump transmission to engage and disengage the pump without gear clash. The clutch shall be a multiple disc design for maximum torque. The clutch shall be fully self-adjusting to provide automatic wear compensation, and consistent torque throughout the life of the clutch. Positive engagement and disengagement shall be provided through a high efficient and dependable hydraulic system to assure superior performance. (no exceptions)</p> <p><u>LOW PRESSURE/HIGH TEMPERATURE LIGHTS</u></p> <p>Lights shall be provided to indicate when a high temperature or low pressure situation occurs. Lights shall be provided next to the master gauges at the pump panel as well as on the control panel in the cab. A pair of lights shall be provided in each location. One (1) light shall be provided to indicate high temperature. The second light shall be provided to indicate a low pressure. All lights shall be labeled accordingly.</p> <p><u>PUMPING MODE</u></p> <p>Pump shall provide for both pump and roll mode and stationary pumping mode. (no exceptions)</p> <p>Stationary pumping mode shall be accomplished by stopping the vehicle, setting the parking brake and engaging the water pump switch on the cab switch panel. The transmission shall</p>		

	Bidder Complies	
	Yes	No
<p>shift to "Neutral" range automatically when the parking brake is set. The "OK to Stationary Pump" indicator shall also illuminate when the parking brake is set.</p> <p>If the vehicle is equipped with a suitable Husky foam system or Hercules CAFS system, these systems shall be engaged from the cab switch panel as well.</p> <p>Pump and roll mode shall be accomplished by the use of the main pump and shall not require the use of a secondary pump. Pump and roll mode shall use the same operation sequence as stationary pumping mode with a few additional steps. After the vehicle is setup for stationary pumping, the operator shall leave the cab and setup the pump panel to discharge at the desired outlet(s). Upon returning to the cab, the operator shall disengage the parking brake. An "OK to Pump & Roll" indicator shall illuminate on the cab switch panel. First gear on the transmission gear selector shall be selected by the operator for pump and roll operations. The operator as needed shall apply the foot throttle. Pump and roll mode shall be maintained unless the transmission shifts out of first gear.</p> <p>Stopping either stationary pumping mode or pump and roll mode shall be accomplished by pressing the "Water Pump" switch down to disengage the pump.</p> <p>A pump pressure gauge shall be supplied in the cab within view of the driver.</p> <p><u>PUMP SHIFT</u></p> <p>Pump shall be engaged in not more than two steps, by simply setting the parking brake, which shall automatically put the transmission into neutral, and activating a rocker switch in the cab. Switches in the cab shall also allow for water, foam, or CAFS if equipped, and activate the appropriate system to preset parameters. The engagement shall provide simple two-step operation, enhance reliability, and completely eliminate gear clash. The shift shall include the indicator lights as mandated by NFPA. A direct override switch shall be located behind a door in the lower pump operator's panel. The switch shall automatically disengage when the door is closed. (no exceptions)</p> <p>As the parking brake is applied, the pump panel throttle shall be activated and deactivate the chassis foot throttle for stationary operation.</p> <p><u>TRANSMISSION LOCK UP</u></p> <p>Transmission lock up is not required as transmission shall automatically shift to neutral as soon as the parking brake is set.</p> <p><u>AUXILIARY COOLING SYSTEM</u></p> <p>A supplementary heat exchange cooling system shall be provided to allow the use of water from the discharge side of the pump for cooling the engine water. A water-to-coolant heat exchanger shall be used.</p>		

	Bidder Complies	
	Yes	No
<p><u>INTAKE RELIEF VALVE</u></p> <p>One (1) Trident Air Max intake relief valve(s) shall be installed on the suction side of the pump preset at 125 psig.</p> <p>The relief valve shall have a working range of 50 PSI to 350 PSI.</p> <p>The outlet shall terminate below the frame rails with a 2.50" National Standard hose thread adapter and shall have a "do not cap" warning tag.</p> <p>One (1) adjustable air regulator and pressure indicating gauge shall be located on a common bezel behind the right side pump panel with a stainless steel access door to control the intake valve(s).</p> <p><u>PRESSURE CONTROLLER</u></p> <p>An electronic pressure controller shall be provided.</p> <p>A pressure transducer shall be installed in the discharge side of the water pump. The transducer continuously monitors pump pressure sending a signal to the electronic pressure controller.</p> <p>The pressure controller can be used in two (2) modes of operation, RPM mode and pressure modes. The controller shall be programmed to turn on/default to No Mode/Default Press Setting mode.</p> <p>In the RPM mode, the controller can be activated after vehicle parking brake has been set. When in this mode, the controller shall maintain the set engine speed, regardless of engine load (within engine operation capabilities).</p> <p>In the pressure mode, the controller can be activated after vehicle parking brake has been set. When in this mode, the controller shall automatically maintain the discharge pressure set by the operator (within the discharge capabilities of the pump and water supply) regardless of flow.</p> <p>A 2.00" diameter throttle control knob with no mechanical stops, a serrated grip, and a red idle push button in the center shall be a integrated/part of the pressure controller. The throttle control knob shall be programmed for Clockwise rotation to increase engine speed.</p> <p>Individual LED indicators for ok to pump, throttle ready, pressure mode and rpm mode shall be located on the pressure controller for easy viewing.</p> <p>A pump cavitation protection feature shall also provided which shall return the engine to idle should the pump cavitate. Cavitation is sensed by the combination of pump pressure below 30 psi and engine speed above 2000 rpm for more than five (5) seconds.</p> <p>Other safety features include recognition of low water and no water conditions with an automatic programmed response and a push button to return the engine to idle.</p>		

	Bidder Complies	
	Yes	No
<p>The pressure controller LCD screen shall be 4.20" in size with a minimum brightness of 750 nits. The LCD screen and LED intensity shall be automatically adjust for day and nighttime operation. The LCD screen intensity can also be manually adjusted if needed.</p> <p>The following information shall be provided/displayed on the LCD screen -</p> <ul style="list-style-type: none"> • Engine RPM • Check engine and stop engine warning indicators • Engine oil pressure • Engine coolant temperature • Water pump temperature • Fuel Level • Water tank level • Battery voltage • Operating mode (RPM or pressure) • Pressure or RPM setting <p>On screen messaging show diagnostic and warning messages as they occur. It shall show apparatus information, stored data, and program options when selected by the operator. It shall monitor inputs outputs and support audible and visual warning alarms for the following conditions -</p> <ul style="list-style-type: none"> • High battery voltage • Low battery voltage/engine off • Low battery voltage/engine running • High water pump temperature • Low fuel • Low engine oil pressure • High engine coolant temperature • Water tank out of water (visual alarm only) • No engine response (visual alarm only) <p>The pressure controller shall store the accumulated operating hours for the pump and engine. These items are to be displayed within the pressure controller menu.</p> <p>The pressure controller shall include a USB port on the back of the controller for easy software upgrades if needed.</p> <p><u>PRIMING PUMP</u></p> <p>The priming pump shall be a Trident Emergency Products compressed air powered, high efficiency, multistage venturi based AirPrime System, conforming to standards outlined in the current edition of NFPA 1901.</p>		

	Bidder Complies	
	Yes	No
<p>All wetted metallic parts of the priming system are to be of brass and stainless steel construction.</p> <p>One (1) priming control shall open the priming valve and start the pump primer.</p> <p><u>PUMP MANUALS</u></p> <p>There shall be a total of two (2) pump manuals provided by the pump manufacturer and furnished with the apparatus. The manuals shall be provided by the pump manufacturer in the form of two (2) electronic copies. Each manual shall cover pump operation, maintenance, and parts.</p> <p><u>PLUMBING, STAINLESS STEEL AND HOSE</u></p> <p>All inlet and outlet lines shall be plumbed with either stainless steel pipe, flexible polypropylene tubing or synthetic rubber hose reinforced with hi-tensile polyester braid. All hose's shall be equipped with brass or stainless steel couplings. All stainless steel hard plumbing shall be a minimum of a schedule 10 wall thickness.</p> <p>Where vibration or chassis flexing may damage or loosen piping or where a coupling is required for servicing, the piping shall be equipped with victaulic or rubber couplings.</p> <p>Plumbing manifold bodies shall be ductile cast iron or stainless steel.</p> <p>All piping lines are to be drained through a master drain valve or shall be equipped with individual drain valves. All drain lines shall be extended with a hose to drain below the chassis frame.</p> <p>All water carrying gauge lines shall be of flexible polypropylene tubing.</p> <p>All piping, hose and fittings shall have a minimum of a 500 PSI hydrodynamic pressure rating.</p> <p><u>MAIN PUMP INLETS</u></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>Main pump inlets shall not be located on the main operator's panel and shall maintain a low connection height by terminating below the top of the chassis frame rail.</p> <p><u>SHORT SUCTION TUBE(S)</u></p> <p>The suction tube(s) on the water pump shall have short suction tube(s) installed to allow for installation of adapters, elbows or intake valves without excessive overhang.</p> <p><u>INLET BUTTERFLY VALVE</u></p> <p>There shall be one (1) butterfly valve provided on the left side main pump inlet.</p> <p>The 6.00" inlet valve shall be recessed behind the pump panel.</p>		

	Bidder Complies	
	Yes	No
<p>A built-in, adjustable pressure relief valve and a bleeder valve shall be provided on the inlet side of the valve.</p> <p>There shall be an Akron 9333 electric valve controller provided on the pump operators panel. The electric control must be of a true position feedback design, requiring no clutches in the motor or current limiting. The unit must be completely sealed with momentary open, close as well and an optional one touch full open feature to operate the valve actuator. The controller shall provide position indication on a full color, backlit LCD display. It shall have manual adjustment of the brightness as well as an auto dimming option.</p> <p>The electric actuator shall be furnished with a manual override, extended to the pump panel.</p> <p>A manual override wrench shall be provide to manually open or close the valve.</p> <p><u>INLET BUTTERFLY VALVE</u></p> <p>There shall be one (1) butterfly valve provided on the right side main pump inlet.</p> <p>The 6.00" inlet valve shall be recessed behind the pump panel.</p> <p>A built-in, adjustable pressure relief valve and a bleeder valve shall be provided on the inlet side of the valve. The bleeder valve controls shall be located at the threaded connection and at the pump operator's panel.</p> <p>There shall be an Akron 9333 electric valve controller provided on the pump operators panel. The electric control must be of a true position feedback design, requiring no clutches in the motor or current limiting. The unit must be completely sealed with momentary open, close as well and an optional one touch full open feature to operate the valve actuator. The controller shall provide position indication on a full color, backlit LCD display. It shall have manual adjustment of the brightness as well as an auto dimming option.</p> <p>The electric actuator shall be furnished with a manual override, extended to the pump panel.</p> <p>A manual override wrench shall be provide to manually open or close the valve.</p> <p><u>MAIN PUMP INLET CAP</u></p> <p>The main pump inlets shall have National Standard Threads with a long handle chrome cap.</p> <p>The cap shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>VALVES</u></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>		

	Bidder Complies	
	Yes	No
<p>The location of the valve for the one (1) inlet shall be recessed behind the pump panel.</p> <p><u>INLET CONTROL</u></p> <p>The side auxiliary inlet(s) shall incorporate a quarter-turn ball valve with the control located at the inlet valve. The valve operating mechanism shall indicate the position of the valve.</p> <p><u>LEFT SIDE INLET</u></p> <p>There shall be one (1) auxiliary inlet with a 2.50" valve at the left side pump panel, terminating with a 2.50" (F) National Standard hose thread adapter, with a 3.125 X 7.5 thread adaptor.</p> <p>The auxiliary inlet shall be provided with a strainer, chrome swivel and plug.</p> <p><u>ANODE, INLET</u></p> <p>A pair of sacrificial zinc anodes shall be provided in the water pump inlets to protect the pump from corrosion.</p> <p><u>ANODE, INLET</u></p> <p>A pair of sacrificial zinc anodes shall be provided in the water pump to protect the pump from corrosion. Two (2) shall be placed in the inlet side of the pump and the other in the discharge side of the pump.</p> <p><u>INLET BLEEDER VALVE</u></p> <p>A 0.75" bleeder valve shall be provided for each side gated inlet.</p> <p>The valves shall be located behind the panel with a "T" swing style handle control extended to the outside of the panel.</p> <p>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.</p> <p>The water discharged by the bleeders shall be routed below the chassis frame rails.</p> <p><u>TANK TO PUMP</u></p> <p>The booster tank shall be connected to the intake side of the pump with heavy duty 4.00" piping and a quarter turn 3.00" full flow line valve with the control located at the operator's panel. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing.</p> <p>A check valve shall be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank.</p> <p><u>TANK REFILL</u></p> <p>A 1.50" combination tank refill and pump re-circulation line shall be provided, using a quarter-turn full flow ball valve controlled from the pump operator's panel.</p>		

	Bidder Complies	
	Yes	No
<p><u>DISCHARGE OUTLET CONTROLS</u></p> <p>The right side discharges shall incorporate a quarter-turn ball valve and be controlled by Akron 9335 electric valve controllers provided on the pump operators panel. The electric controls must be of a true position feedback design, requiring no clutches in the motor or current limiting. The units must be completely sealed with momentary open, close as well and an optional one touch full open feature to operate their corresponding valve actuator. The controllers shall provide position indication on a full color, backlit LCD display. They shall have manual adjustment of the brightness as well as an auto dimming option. In addition to the valve controls, the electric valve controllers shall include a pressure display</p> <p>All other outlets shall have manual swing handles that operate in a vertical up and down motion. These handles shall be able to lock in place to prevent valve creep under pressure.</p> <p><u>LEFT SIDE DISCHARGE OUTLETS</u></p> <p>There shall be two (2) discharges with a 2.50" valves on the left side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter, with a 3.125 X 7.5 thread adaptor.. Discharges shall be located below the cab, and shall be no higher than the top of the chassis frame rail. Discharges shall not be located on the pump operator's panel. Lever controls shall be provided at the valve.</p> <p><u>RIGHT SIDE DISCHARGE OUTLETS</u></p> <p>There shall be One (1) discharge outlet with a 2.50" valve on the right side of the apparatus, terminating with a 2.50" MNST adapter, with a 3.125 X 7.5 thread adaptor.. The discharge(s) shall be located below the crew cab and shall be no higher than the top of the chassis frame rail.</p> <p>There shall be Akron 9335 electric valve controller(s) provided on the pump operators panel. The electric control(s) must be of a true position feedback design, requiring no clutches in the motor or current limiting. The unit(s) must be completely sealed with momentary open, close as well and an optional one touch full open feature to operate the valve actuator. The controller(s) shall provide position indication on a full color, backlit LCD display. They shall have manual adjustment of the brightness as well as an auto dimming option.</p> <p>In addition to valve position, each controller shall include a pressure display.</p> <p><u>LARGE DIAMETER DISCHARGE OUTLET</u></p> <p>There shall be a 4.00" discharge outlet with a 4.00" valve installed on the right side of the apparatus, terminating with 4.00" MNST threads. The discharge shall be located below the crew cab and shall be no higher than the top of the chassis frame rail.</p> <p>There shall be an Akron 9335 electric valve controller provided on the pump operators panel. The electric control must be of a true position feedback design, requiring no clutches in the motor or current limiting. The unit must be completely sealed with momentary open, close as</p>		

	Bidder Complies	
	Yes	No
<p>well and an optional one touch full open feature to operate the valve actuator. The controller shall provide position indication on a full color, backlit LCD display. It shall have manual adjustment of the brightness as well as an auto dimming option.</p> <p>In addition to valve position, the controller shall include a pressure display.</p> <p><u>LARGE DIAMETER OUTLET ADAPTER</u></p> <p>The 4.00" outlet shall be furnished with a 4.00" (F) National Standard hose thread x 4.00" Storz straight adapter with Storz cap and cable.</p> <p><u>FRONT DISCHARGE OUTLET</u></p> <p>There shall be one (1) 1.50" discharge outlet piped to the front of the apparatus and located on the top of the left side of the front bumper.</p> <p>Plumbing shall consist of 2.00" piping and flexible hose with a 2.00" ball valve with control at the pump operator's panel. A fabricated weldment made of stainless steel pipe shall be used in the plumbing where appropriate. The piping shall terminate with a 1.50" NST with 90 degree stainless steel swivel.</p> <p>There shall be automatic drains provided at all low points of the piping.</p> <p><u>REAR DISCHARGE OUTLET</u></p> <p>There shall be One (1) discharge outlet piped to the rear of the hose bed, on left side, installed so proper clearance is provided for spanner wrenches or adapters. Plumbing shall consist of 2.50" piping along with a 2.50" full flow ball valve with the control from the pump operator's panel. Discharge shall terminate with 2.50" NST thread. Discharge piping shall be schedule 10 304L welded or formed stainless steel and routed through the water tank.</p> <p><u>REAR OUTLET ELBOWS</u></p> <p>The 2.50" discharge outlets located at the rear of the apparatus 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, with a 3.125 X 7.5 thread adaptor.</p> <p>The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>DISCHARGE CAPS/ INLET PLUGS</u></p> <p>Chrome plated, rocker lug, caps with chain shall be furnished for all discharge outlets 1.00" thru 3.00" in size, besides the pre-connected hose outlets.</p> <p>Chrome plated, rocker lug, plugs with chain shall be furnished for all auxiliary inlets 1.00" thru 3.00" in size.</p> <p>The caps and plugs shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p>		

	Bidder Complies	
	Yes	No
<p><u>OUTLET BLEEDER VALVE</u></p> <p>A 0.75" bleeder valve shall be provided for each outlet 1.50" or larger. Automatic drain valves are acceptable with some outlets if deemed appropriate with the application.</p> <p>The valves shall be located behind the panel with a T swing style handle control extended to the outside of the side pump panel.</p> <p>The handles shall be chrome plated and provide a visual indication of valve position.</p> <p>The T swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage.</p> <p>Bleeders shall be located at the bottom of the pump panel. They shall be properly labeled identifying the discharge they are plumbed in to.</p> <p>The water discharged by the bleeders shall be routed below the chassis frame rails.</p> <p><u>DELUGE RISER</u></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. 3.00" piping shall be installed securely so no movement develops when the line is charged. A 2.50" gated valve shall be installed and controlled at the pump operator's panel. The deluge outlet shall flow a minimum 1000 GPM.</p> <p><u>MONITOR</u></p> <p>A customer/dealer supplied and installed make and model AKRON APOLLO monitor shall be properly installed on the deluge riser.</p> <p>The deluge riser shall have a 3.00" four (4)-bolt flange for mounting the monitor.</p> <p><u>CROSSLAY MODULE</u></p> <p>The crosslay module shall be full width of the rear body.</p> <p>The forward, upper corners of the module shall have full body corners.</p> <p>The crosslay module shall be manufactured for installation of roll up doors on each side.</p> <p><u>ROLLUP DOOR, CROSSLAY ENDS</u></p> <p>The compartment doors shall be rollup style, double faced aluminum construction painted one (1) color to match the lower portion of the body and manufactured by 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 180 to -40 degrees Fahrenheit. Side, top and bottom seals shall be provided to resist ingress of dirt and weather and be made of Santoprene.</p>		

	Bidder Complies	
	Yes	No
<p>All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from 300 to -40 degrees Fahrenheit. Hardened plastic shall not be acceptable.</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 rollup door assembly shall not exceed 4.00".</p> <p>A heavy-duty magnetic switch shall be used for control of open compartment door warning lights.</p> <p>The crosslays shall not have a drip pan below the roll of the door.</p> <p><u>CROSSLAY COMPARTMENT LIGHTING</u></p> <p>There shall be two (2) 12 volt DC light strips with white LEDs and mechanical fasteners, provide behind the front door frame on the crosslay compartments per the following:</p> <ul style="list-style-type: none"> • One (1) strip light for the left side crosslay compartment door • One (1) strip light for the right side crosslay compartment door <p>The lights shall be activated when the battery switch is on and the respective door is opened.</p> <p><u>CROSSLAY(S), LOWER</u></p> <p>There shall be two (2) lower crosslays provided.</p> <p><u>1.50" Crosslays</u></p> <p>There shall be two (2) 1.50" crosslays plumbed with 2.00" welded or formed schedule 10 304L stainless steel pipe.</p> <p>The crosslays shall be low mounted with the bottom of both crosslay trays no more than 11.00" above the frame rails for simple, safe reloading and deployment (no exception).</p> <p>There shall be a 1.50" National Standard hose thread 90-degree swivel provided in each hose bed, so that the hose may be removed from either side of apparatus. The swivel shall be as far outbound as possible for ease of changing hose.</p> <p>Each crosslay shall be gated with a 2.00" quarter turn ball valve with the controls located at the pump operator's panel.</p>		

	Bidder Complies	
	Yes	No
<p>Each hose bed shall be capable of carrying 200' of 1.75" double jacket hose .</p> <p><u>Crosslay Hose Trays</u> A removable tray shall be provided for each crosslay hose bed. The crosslay tray shall be constructed of black poly to provide a lightweight sturdy tray. Two (2) hand holes shall be in the floor and additional hand holes shall be provided in the sides for easy removal and installation from the compartment. The floor of the trays shall be perforated to allow for drainage and hose drying.</p> <p>Trays shall be held in place by a mechanical spring-loaded stainless-steel latch that automatically deploys upon loading the trays to hold the trays in place during transit.</p> <p><u>CROSSLAY(S), UPPER</u> There shall be one (1) upper crosslay provided.</p> <p><u>2.50" Crosslay</u> There shall be one (1) 2.50" crosslay plumbed with 2.50" welded or formed schedule 10 304L stainless steel pipe.</p> <p>There shall be a 2.50" National Standard hose thread 90-degree swivel provided in each hose bed, so that hose may be removed from either side of apparatus. The swivel shall be as far outbound as possible for ease of changing hose.</p> <p>Each crosslay shall be gated with a 2.50" quarter turn ball valve with the controls located at the pump operator's panel.</p> <p>Each hose bed shall be capable of carrying 200' of 2.50" double jacket hose .</p> <p><u>Crosslay Hose Trays</u> A removable tray shall be provided for each crosslay hose bed. The crosslay tray shall be constructed of black poly to provide a lightweight sturdy tray. Two (2) hand holes shall be in the floor and additional hand holes shall be provided in the sides for easy removal and installation from the compartment. The floor of the trays shall be perforated to allow for drainage and hose drying.</p> <p>Trays shall be held in place by a mechanical spring-loaded stainless-steel latch that automatically deploys upon loading the trays to hold the trays in place during transit.</p> <p><u>PIKE POLE STORAGE</u> A quantity of one (1) pike pole aluminum tubes shall be provided and located TBD in the upper crosslay module. Each tube shall have a .75" standard notch. If the head of a pike pole can come in contact with a painted surface, a stainless steel scuffplate shall be provided.</p>		

	Bidder Complies	
	Yes	No
<p><u>PIKE POLE STORAGE</u></p> <p>A quantity of three (3) pike poles aluminum tubes shall be provided and located TBD in the upper crosslay module. The pike pole tube(s) shall be notched to allow a New York style pike pole to fit in the tube.</p> <p>If the head of a pike pole can come in contact with a painted surface, a stainless steel scuffplate shall be provided.</p> <p><u>TRAY, CROSSLAY</u></p> <p>There shall be three (3) additional poly tray(s) provided for the crosslays. The trays shall be identical in design and size to fit in 2 x1.5 1 x 2.5 .</p> <p><u>FOAM SYSTEM</u></p> <p>A foam system shall not be required on this apparatus.</p> <p><u>PUMP PANEL CONFIGURATION</u></p> <p>The pump panel configuration shall be arranged and installed in an organized manner that shall provide user-friendly operation.</p> <p><u>PUMP AND GAUGE PANEL</u></p> <p>The pump operator's panel and gauge panels shall be constructed of stainless steel with a brushed finish.</p> <p>The side control panels shall be constructed of stainless steel with a brushed finish for durability and ease of maintenance.</p> <p><u>PUMP AND PLUMBING ACCESS</u></p> <p>Simple access to the plumbing shall be provided through the front of the body area by raising the cab for complete plumbing service and valve maintenance. Access to valves shall not require removal of operator panels or pump panels. Access for rebuilding of the pump shall not require removal of more than the tank to pump line and a single discharge line. This access shall allow for fast, easy valve or pump rebuilding, making for reduced out of service times. Steps shall be provided for access to the top of the pump.</p> <p>Access to the pump shall be provided by raising the cab. The pump shall be positioned such that all maintenance and overhaul work can be performed above the frame and under the tilted cab. The service and overhaul work on the pump shall not require the removal of operator panels or pump panels. Complete pump casing and gear case removal shall require no more than removal of the intake and discharge manifolds, driveline, coolers and a single discharge line. The pump case and gear case shall be able to be removed by lifting upward without interference from piping and be removable in less than 3 hours.</p> <p><u>PUMP COMPARTMENT LIGHT</u></p> <p>There shall be one (1) Whelen®, Model 3SC0CDCR, 3.00" white 12 volt DC LED light(s) with Whelen, Model 3FLANGEC, flange(s) installed in the plumbing area.</p>		

	Bidder Complies	
	Yes	No
<p>The light(s) shall be activated by a toggle switch located in the pump compartment area.</p> <p>Engine monitoring graduated LED indicators shall be incorporated with the pressure controller.</p> <p><u>THROTTLE READY GREEN INDICATOR LIGHT</u></p> <p>There shall be a green indicator light integrated with the pressure governor and/or engine throttle installed on the pump operators panel that is activated when the pump is in throttle ready mode.</p> <p><u>AIR HORN BUTTON</u></p> <p>An air horn control button shall be provided at the pump operator's control panel. This button shall be red in color and properly labeled "Evacuation".</p> <p><u>ALUMINUM HEAT ENCLOSURE</u></p> <p>A heat enclosure shall be installed. The forward section of the enclosure shall consist of an aluminum understructure, with easily removable aluminum panels.</p> <p>The rearward section shall consist of a pan above the exhaust and a covering above the plumbing so warm air cannot escape freely.</p> <p><u>ELECTRIC GAUGE HEATER</u></p> <p>A 12v electric gauge heater shall be provided for all water carrying gauges.</p> <p><u>HEATER, PUMP COMPARTMENT</u></p> <p>A hot water heater shall be installed in the plumbing compartment.</p> <p>Controls for the heater shall be located at the pump operator's panel.</p> <p><u>VACUUM AND PRESSURE GAUGES</u></p> <p>The pump vacuum and pressure gauges shall be liquid filled and manufactured by Class 1 Incorporated ©.</p> <p>The gauges shall be a minimum of 4.00" in diameter and shall have white faces with black lettering, with a pressure range of 30.00"-0-600#.</p> <p>Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.</p> <p>The pump pressure and vacuum gauges shall be installed adjacent to each other at the pump operator's control panel.</p> <p>Test port connections shall be provided at the pump operator's panel. One (1) shall be connected to the intake side of the pump, and the other to the discharge manifold of the pump. They shall have 0.25 in. standard pipe thread connections and non-corrosive polished stainless steel or brass plugs. They shall be marked with a label.</p>		

	Bidder Complies	
	Yes	No
<p>This gauge shall include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.</p> <p><u>PRESSURE GAUGES</u></p> <p>The individual "line" pressure gauges for the discharges shall be interlube filled and manufactured by Class 1©.</p> <p>They shall be a minimum of 2.00" in diameter and shall have white faces with black lettering.</p> <p>Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.</p> <p>Gauges shall have a pressure range of 30"-0-400#.</p> <p>The individual pressure gauge shall be installed as close to the outlet control as practical.</p> <p>This gauge shall include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.</p> <p><u>WATER LEVEL GAUGE</u></p> <p>An electric water level gauge shall be incorporated in the pressure controller that registers water level by means of 9 LEDs. They shall be at 1/8 level increments with a tank empty LED. The LEDs shall be a bright type that is readable in sunlight, and have a full 180-degree of clear viewing.</p> <p>To further alert the pump operator, the gauge shall have a warning flash when the tank volume is less than 25%, and shall have "Down Chasing LEDs when the tank is almost empty.</p> <p>The level measurement shall be ascertained by sensing the head pressure of the fluid in the tank or cell.</p> <p><u>SIDE CONTROL PUMP OPERATOR'S/PUMP PANEL LIGHTING</u></p> <p>Illumination shall be provided for controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus and the equipment provided on it. External illumination shall be a minimum of five (5) foot-candles on the face of the device. Internal illumination shall be a minimum of four (4) footlamberts.</p> <p>The pump panels shall be illuminated by two (2) Truck-Lite, Model 60354C, 6.00" x 2.00" oval white LED lights with Model 60700, grommets and chrome covers installed on the back of the cab, one (1) on the driver's side and one (1) on the passenger's side.</p> <p>The pump operator's panel shall utilize the same LED strip lighting at the forward doorframe as all other compartment lighting.</p> <p>There shall be a small white LED pump engaged indicator light installed overhead.</p>		

	Bidder Complies	
	Yes	No
<p><u>AIR HORN SYSTEM</u></p> <p>Two (2) Hadley®, eTone, chrome air horns shall be recessed in the front bumper. The air horn system shall be piped to the air brake system wet tank utilizing 0.38" tubing. A pressure protection valve shall be installed to prevent the loss of air in the brake system.</p> <p><u>Air Horn Location</u></p> <p>The air horns shall be located on each side of the bumper, towards the outside.</p> <p><u>Air Horn Control</u></p> <p>The air horns shall be actuated by a chrome push button located on the officer's side of the engine tunnel 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><u>ELECTRONIC SIREN</u></p> <p>A Whelen®, Model 295SLSA1, electronic siren with noise canceling microphone shall be provided.</p> <p>This siren to be active when the battery switch is on and that emergency master switch is on.</p> <p>Electronic siren head shall be recessed in the driver side center switch panel.</p> <p>The electronic siren shall be controlled on the siren head only. No horn button or foot switches shall be required.</p> <p><u>SPEAKER</u></p> <p>There shall be one (1) Whelen®, Model SA315P, black nylon composite, 100-watt, speaker with through bumper mounting brackets and polished stainless steel grille provided. The speaker shall be connected to the siren amplifier.</p> <p>The speaker(s) shall be recessed in the center of the front bumper.</p> <p><u>FRONT ZONE UPPER WARNING LIGHTS</u></p> <p>There shall be one (1) 72.00" Whelen Freedom IV LED lightbar mounted on the cab roof.</p> <p>The lightbar shall include the following:</p> <ul style="list-style-type: none"> • One (1) red flashing LED module in the driver's side end position. • One (1) red flashing LED module in the driver's side front corner position. • One (1) white flashing LED module in the driver's side first front position. • One (1) red flashing LED module in the driver's side second front position. • One (1) red flashing LED module in the driver's side third front position. • One (1) red flashing LED module in the driver's side fourth front position. 		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Open in the driver's side fifth front position. • Open in the driver's side sixth front position. • Open in the passenger's side sixth front position. • Open in the passenger's side fifth front position. • One (1) red flashing LED module in the passenger's side fourth front position. • One (1) red flashing LED module in the passenger's side third front position. • One (1) red flashing LED module in the passenger's side second front position. • One (1) white flashing LED module in the passenger's side first front position. • One (1) red flashing LED module in the passenger's side front corner position. • One (1) red flashing LED module in the passenger's side end position. <p>There shall be clear lenses included on the lightbar.</p> <p>There shall be a switch in the cab on the switch panel to control this lightbar.</p> <p>The white LEDs shall be disabled when the parking brake is applied.</p> <p>The six (6) red flashing LED modules in the front positions may be load managed when the parking brake is applied.</p> <p><u>LIGHTS, FRONT ZONE LOWER</u></p> <p>Two (2) Whelen model M6*C LED flashing warning lights shall be installed on the cab face above the headlights, in a common bezel with the directional lights.</p> <p>The driver's side front warning light to be red.</p> <p>The passenger's side front warning light to be red.</p> <p>Both lights shall include a clear lens.</p> <p>There shall be a switch located in the cab on the switch panel to control the lights.</p> <p><u>HEADLIGHT FLASHER</u></p> <p>The high beam headlights shall flash alternately between the left and right side.</p> <p>There shall be a switch installed in the cab on the switch panel to control the high beam flash. This switch shall be live when the battery switch and the emergency master switches are on.</p> <p>The flashing shall automatically cancel when the hi-beam headlight switch is activated or when the parking brake is set.</p> <p><u>SIDE ZONE LOWER LIGHTING</u></p> <p>There shall be four (4) Whelen®, Model M6**, 4.31" high x 6.75" long x 1.37" deep flashing LED warning lights with chrome trim installed per the following:</p>		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> Two (2) lights, one (1) each side on the bumper extension. The side front warning LEDs to be red. Two (2) lights, one (1) each side above rear wheels. The side rear LEDs to be red. The warning light lens color(s) to be clear. <p>There shall be a switch in the cab on the switch panel to control the lights.</p> <p><u>REAR ZONE LOWER LIGHTING</u></p> <p>There shall be two (2) Whelen®, Model M6*C LED flashing warning lights with chrome trim located at the rear of the apparatus.</p> <ul style="list-style-type: none"> The driver's side rear light to be red The passenger's side rear light to be red <p>The lenses shall be clear.</p> <p>There shall be a switch located in the cab on the switch panel to control the lights.</p> <p><u>WARNING LIGHTS (REAR AND SIDE UPPER ZONES)</u></p> <p>There shall be four (4) Whelen®, Model M6**, 5.31" high x 6.75" wide x 1.37" deep flashing LED warning lights with chrome trim provided at the rear of the apparatus per the following:</p> <ul style="list-style-type: none"> The side upper rear light on the left side to include red flashing LEDs The rear upper light on the left side to include red flashing LEDs The rear upper light on the right side to include red flashing LEDs The side upper rear light on the right side to include red flashing LEDs The warning light lens color(s) to be clear <p>There shall be a switch in the cab on the switch panel to control the lights.</p> <p><u>TRAFFIC DIRECTING LIGHT</u></p> <p>There shall be one (1) Whelen®, Model TAL65, 36.00" long x 2.87" high x 2.25" deep, amber LED traffic directing light installed at the rear of the apparatus.</p> <p>The Whelen, Model TACTL5, control head shall be included with this installation.</p> <p>The controller shall be energized when the battery switch is on.</p> <p>The auxiliary flash not activated.</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>		

	Bidder Complies	
	Yes	No
<p><u>ELECTRICAL SYSTEM GENERAL DESIGN FOR ALTERNATING CURRENT</u></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 3 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> <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.</p>		

	Bidder Complies	
	Yes	No
<p>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 following information:</p> <ul style="list-style-type: none"> • Rated voltage(s) and type (ac or dc) • Phase • Rated frequency • Rated amperage • Continuous rated watts • Power source engine speed <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 144.00" (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> <p><u>Wiring Methods</u></p> <p>Fixed wiring systems shall be limited to the following:</p> <ul style="list-style-type: none"> • Metallic or nonmetallic liquid tight flexible conduit rated at not less than 194 degrees Fahrenheit (90 degrees Celsius) • or • Type SO or Type SEO cord with a WA suffix, rated at 600 volts at not less than 194 degrees Fahrenheit (90 degrees Celsius) <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"> • Separated by a minimum of 12.00" (305 mm), or properly shielded, from exhaust piping • Separated from fuel lines by a minimum of 6.00" (152 mm) distance 		

	Bidder Complies	
	Yes	No
<p>Electrical cord or conduit shall be supported within 6.00" (152 mm) of any junction box and at a minimum of every 24.00" (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 24.00" (610 mm) from the ground. Receptacles on off-road vehicles shall be a minimum of 30.00" (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> <p>All receptacles located in a dry location shall be of the grounding type. Receptacles shall be not less than 30.00" (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>		

	Bidder Complies	
	Yes	No
<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 an independent third-party certification organization.</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> <p><u>GENERATOR</u></p> <p>There shall be one (1) Honda Model EM7000IS fuel injected, gas powered portable generator with a peak rating of 7,000 watts, with remote start, provided driver's side. (no exceptions)</p> <p>This generator shall include electric start capabilities.</p> <p><u>GENERATOR MOUNTING</u></p> <p>The generator shall be mounted in the left side compartment behind the rear axle on a sliding tray.</p> <p>The generator shall be positioned so that the exhaust pipe from the generator is facing the outside of the apparatus.</p> <p><u>ELECTRIC START PROVISION</u></p> <p>Electric start provisions shall be furnished for the generator from the chassis battery system.</p> <p><u>GENERATOR REMOTE START</u></p> <p>A start switch with green indicator shall be provided to activate the generator. The green indicator shall indicate when the generator is running. A stop switch shall be provided to turn off the generator.</p> <p>These switches shall be provided on the pump panel in addition to the controls on the generator.</p>		

	Bidder Complies	
	Yes	No
<p><u>CIRCUIT BREAKER PANEL</u></p> <p>A circuit breaker panel shall be installed in the D-3. 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><u>SUB FEED CIRCUIT BREAKER PANEL</u></p> <p>There shall be a shoreline to generator transfer switch powered sub feed circuit breaker panel installed in the d 3. 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><u>LIGHT TOWER</u></p> <p>There shall be one (1) Will-Burt, Model NS1.8-300 WHL, light tower provided.</p> <p>There shall be two (2) Whelen, Model PFP2, 150 watt, 120 volt AC light heads included on this tower.</p> <p>The painted parts of the light tower and the light heads to be white.</p> <p>This tower shall be connected to the Do Not Move Truck Indicator in the cab.</p> <p><u>Light Tower Location</u></p> <p>The light tower shall be installed on the cab roof.</p> <p><u>Light Tower Controller</u></p> <p>There shall be one (1) handheld wired controller included.</p> <p><u>Light Tower Controller Location</u></p> <p>The light tower controller shall be installed in the driver's side front body compartment.</p> <p><u>ELECTRIC CORD REEL</u></p> <p>Furnished with the 120 volt AC electrical system shall be a Hannay, Series 1600, cord reel. The reel shall be provided with a 12 volt electric rewind switch that is guarded to prevent accidental operation and labeled for its intended use. The switch shall be protected with a fuse and installed at a height not to exceed 72.00" above the operators standing position.</p> <p>The exterior finish of the reel(s) shall be painted charcoal grey metallic from the reel manufacturer.</p> <p>A Nylatron guide to be provided to aid in the payout and loading of the reel. A ball stop shall be provided to prevent the cord from being wound on the reel.</p> <p>A label shall be provided in a readily visible location adjacent to the reel. The label shall indicate current rating, current type, phase, voltage and total cable length.</p> <p>A total of one (1) cord reel shall be provided one (1) in compartment LS3 hanging from the ceiling in the center position.</p>		

	Bidder Complies	
	Yes	No
<p>The cord reel should be configured with three (3) conductors.</p> <p><u>CORD</u> Provided for electric distribution shall be one (1) length installed on the reel of 200 feet of yellow 10/3 electrical cord, weather resistant 105 degree Celsius to -50 degree Celsius, 600 volt jacketed SOOW cord. No connector shall be installed on the end of the cord.</p> <p><u>PORTABLE JUNCTION BOX</u> There shall be one (1) Akron EJBX electric junction box(es) provided.</p> <p>There shall be a cable strain relief and direct connection, no plug provided for each box.</p> <p>Each box shall be provided with the following:</p> <ul style="list-style-type: none"> • two (2) 15/20 amp 120 volt AC duplex straight blade receptacle with flip up covers • two (2) 20 amp 120 volt AC twist lock single receptacles with flip up covers • a 120 volt AC light inside the box <p><u>POWER OUTLET STRIP</u> There shall be one (1) receptacle strip(s) with six (6) 15 amp 120 volt AC straight blade receptacles provided ON ENGINE COVER.</p> <p>The strip(s) selected shall be powered from the shoreline inlet through a receptacle located adjacent to the strip(s).</p> <p>There shall be a label installed near the strip(s) that state the following:</p> <ul style="list-style-type: none"> • Line Voltage • Current Rating (amps) • Phase • Frequency <p><u>120 VOLT RECEPTACLE</u> There shall be two (2), 15/20 amp 120 volt AC three (3) wire straight blade duplex receptacle(s) with interior stainless steel wall plate(s), installed D 3 COMPARTMENT AND P3 COMPARTMENT . The NEMA configuration for the receptacle(s) shall be 5-20R.</p> <p>The receptacle(s) shall be powered from the shoreline inlet.</p> <p>There shall be a label installed near the receptacle(s) that state the following:</p> <ul style="list-style-type: none"> • Line Voltage • Current Rating (amps) • Phase • Frequency 		

	Bidder Complies	
	Yes	No
<p><u>LOOSE EQUIPMENT</u></p> <p>The following equipment shall be furnished with the completed unit:</p> <ul style="list-style-type: none"> • One (1) bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit <p><u>NFPA REQUIRED LOOSE EQUIPMENT PROVIDED BY FIRE DEPARTMENT</u></p> <p>The following loose equipment as outlined in NFPA 1901, 2016 edition, section 5.9.3 and 5.9.4 shall be provided by the fire department.</p> <ul style="list-style-type: none"> • 800 ft (60 m) of 2.50" (65 mm) or larger fire hose. • 400 ft (120 m) of 1.50" (38 mm), 1.75" (45 mm), or 2.00" (52 mm) fire hose. • One (1) handline nozzle, 200 gpm (750 L/min) minimum. • Two (2) handline nozzles, 95 gpm (360 L/min) minimum. • One (1) smoothbore or combination nozzle with 2.50" shutoff that flows a minimum of 250 gpm. • One (1) SCBA complying with NFPA 1981 for each assigned seating position, but not fewer than four (4), mounted in brackets fastened to the apparatus or stored in containers supplied by the SCBA manufacturer. • 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). • One (1) first aid kit. • Four (4) combination spanner wrenches. • Two (2) hydrant wrenches. • One (1) double female 2.50" (65 mm) adapter with National Hose threads. • One (1) double male 2.50" (65 mm) adapter with National Hose threads. • One (1) rubber mallet, for use on suction hose connections. • Two (2) salvage covers each a minimum size of 12 ft x 14 ft (3.7 m x 4.3 m). • One (1) traffic vest for each seating position, each vest to comply with ANSI/ISEA 207, <i>Standard for High Visibility Public Safety Vests</i>, and have a five-point breakaway feature that includes two (2) at the shoulders, two (2) at the sides, and one (1) at the front. • Five (5) fluorescent orange traffic cones not less than 28.00" (711 mm) in height, each equipped with a 6.00" (152 mm) retro-reflective white band no more than 4.00" (152 mm) from the top of the cone, and an additional 4.00" (102 mm) retro-reflective white band 2.00" (51 mm) below the 6.00" (152 mm) band. • Five (5) illuminated warning devices such as highway flares, unless the five (5) fluorescent orange traffic cones have illuminating capabilities. • One (1) automatic external defibrillator (AED). • 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). 		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • 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. • If none of the pump intakes are valved, a hose appliance that is equipped with one or more gated intakes with female swivel connection(s) compatible with the supply hose used on one side and a swivel connection with pump intake threads on the other side shall be carried. Any intake connection larger than 3.00" (75 mm) shall include a pressure relief device that meets the requirements of 16.6.6. • If the apparatus does not have a 2.50" National Hose (NH) intake, an adapter from 2.50" NH female to a pump intake shall be carried, mounted in a bracket fastened to the apparatus if not already mounted directly to the intake. • If the supply hose carried has other than 2.50" National Hose (NH) threads, adapters shall be carried to allow feeding the supply hose from a 2.50" NH thread male discharge and to allow the hose to connect to a 2.50" NH female intake, mounted in brackets fastened to the apparatus if not already mounted directly to the discharge or intake. <p><u>SOFT SUCTION HOSE PROVIDED BY FIRE DEPARTMENT</u></p> <p>NFPA 1901, 2016 edition, section 5.8.2.1 requires a minimum of 20' of suction hose or 15' of supply hose shall be carried.</p> <p>Hose is not on the apparatus as manufactured. The fire department shall provide suction or supply hose.</p> <p><u>DRY CHEMICAL EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u></p> <p>NFPA 1901, 2016 edition, section 5.9.4 requires one (1) approved dry chemical portable fire extinguisher with a minimum 80-B:C rating mounted in a bracket fastened to the apparatus.</p> <p>The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.</p> <p><u>WATER EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u></p> <p>NFPA 1901, 2016 edition, section 5.9.4 requires one (1) 2.5 gallon or larger water extinguisher mounted in a bracket fastened to the apparatus.</p> <p>The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.</p> <p><u>FLATHEAD AXE PROVIDED BY FIRE DEPARTMENT</u></p> <p>NFPA 1901, 2016 edition, Section 5.9.4 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>		

	Bidder Complies	
	Yes	No
<p><u>PICKHEAD AXE PROVIDED BY FIRE DEPARTMENT</u></p> <p>NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) pickhead axe mounted in a bracket fastened to the apparatus.</p> <p>The axe is not on the apparatus as manufactured. The fire department shall provide and mount the axe.</p> <p><u>PAINT PROCESS</u></p> <p>The exterior custom cab and body painting procedure shall consist of a seven (7) step finishing process as follows:</p> <ol style="list-style-type: none"> 1. <u>Manual Surface Preparation</u> - All exposed metal surfaces on the custom cab and body shall be thoroughly cleaned and prepared for painting. Imperfections on the exterior surfaces shall be removed and sanded to a smooth finish. Exterior seams shall be sealed before painting. Exterior surfaces that shall not be painted include; chrome plating, polished stainless steel, anodized aluminum and bright aluminum treadplate. 2. <u>Chemical Cleaning and Pretreatment</u> - All surfaces shall be chemically cleaned to remove dirt, oil, grease, and metal oxides to ensure the subsequent coatings bond well. The aluminum surfaces shall be properly cleaned and treated using a high pressure, high temperature 4 step Acid Etch process. The steel and stainless surfaces shall be properly cleaned and treated using a high temperature 3 step process specifically designed for steel or stainless. The chemical treatment converts the metal surface to a passive condition to help prevent corrosion. 3. <u>Surfacer Primer</u> - The Surfacer Primer shall be applied to a chemically treated metal surface to provide a strong corrosion protective basecoat. A minimum thickness of 2 mils of Surfacer Primer is applied to surfaces that require a Critical aesthetic finish. The Surfacer Primer is a two-component high solids urethane that has excellent sanding properties and an extra smooth finish when sanded. 4. <u>Finish Sanding</u> - The Surfacer Primer shall be sanded with a fine grit abrasive to achieve an ultra-smooth finish. This sanding process is critical to produce the smooth mirror like finish in the topcoat. 5. <u>Sealer Primer</u> - The Sealer Primer is applied prior to the Basecoat in all areas that have not been previously primed with the Surfacer Primer. The Sealer Primer is a two-component high solids urethane that goes on smooth and provides excellent gloss hold out when topcoated. 6. <u>Basecoat Paint</u> - Two coats of a high performance, two component high solids polyurethane basecoat shall be applied. The Basecoat shall be applied to a thickness that shall achieve the proper color match. The Basecoat shall be used in conjunction with a urethane clear coat to provide protection from the environment. 7. <u>Clear Coat</u> - Two (2) coats of Clear Coat shall be applied over the Basecoat color. The Clear Coat is a two-component high solids urethane that provides superior gloss and durability to the exterior surfaces. Lap style and roll-up doors shall be Clear Coated to 		

	Bidder Complies	
	Yes	No
<p>match the body. Paint warranty for the roll-up doors shall be provided by the roll-up door manufacturer.</p> <p>After the cab and body are painted, the color shall be verified to make sure that it matches the color standard. Electronic color measuring equipment shall be used to compare the color sample to the color standard entered into the computer. Color specifications shall be used to determine the color match. A Delta E reading shall be used to determine a good color match within each family color.</p> <p>All removable items such as brackets, compartment doors, door hinges, and trim shall be removed and painted separately if required, to ensure paint behind all mounted items. Body assemblies that cannot be finish painted after assembly shall be finish painted before assembly.</p> <p>The paint finish quality levels for critical areas of the apparatus (cab front and sides, body sides and doors, and boom lettering panels) are to meet or exceed Cadillac/General Motors GMW15777 global paint requirements. Orange peel levels are to meet or exceed the #6 A.C.T. standard in critical areas. These requirements must be met in order for the exterior paint finish to be considered acceptable. The manufacture's written paint standards shall be available upon request.</p> <p><u>Environmental Impact</u></p> <p>Contractor shall meet or exceed all current state regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water and soil. Controls shall include the following conditions:</p> <ul style="list-style-type: none"> • Topcoats and primers shall be chrome and lead free. • Metal treatment chemicals shall be chrome free. The wastewater generated in the metal treatment process shall be treated on-site to remove any other heavy metals. • Particulate emission collection from sanding operations shall have a 99.99 percent efficiency factor. • Particulate emissions from painting operations shall be collected by a dry filter or water wash process. If the dry filter is used, it shall have an efficiency rating of 98 percent. Water wash systems shall be 99.97 percent efficient • Water from water wash booths shall be reused. Solids shall be removed on a continual basis to keep the water clean. • Paint wastes are disposed of in an environmentally safe manner. • Empty metal paint containers shall be recycled to recover the metal. • Solvents used in clean-up operations shall be recycled on-site or sent off-site for distillation and returned for reuse. <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 the manufacturing facility meets the above conditions and that it is in compliance with his state EPA rules and regulations.</p>		

	Bidder Complies	
	Yes	No
<p><u>CAB PAINT</u> The cab shall be painted #90 red.</p> <p><u>BODY PAINT</u> The body shall be painted to match the lower section of the cab.</p> <p><u>GALVANIZED CHASSIS FRAME ASSEMBLY</u> The chassis frame assembly shall be hot dip galvanized before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, etc.(no exceptions)</p> <p>Components that are included with the chassis frame assembly that shall be hot dip galvanized are:</p> <ul style="list-style-type: none"> • Frame rails • Frame liners • Cross members • Front frame extension <p>All galvanized components are inspected for compliance with ASTM specifications.</p> <p>Battery boxes shall be stainless steel.</p> <p>All components that are not galvanized shall be painted primer and gloss paint to match the lower job color.</p> <p><u>PAINT, FRONT WHEELS</u> All wheel surfaces, inside and outside, shall be provided with powder coat paint #101 black.</p> <p><u>PAINT, REAR WHEELS</u> All wheel surfaces, inside and outside, shall be provided with powder coat paint #101 black.</p> <p><u>AXLE HUB PAINT</u> All axle hubs shall be painted to match lower job color.</p> <p><u>HOT DIP GALVANIZED BODY SUBSTRUCTURE</u> The compartment substructure shall be treated through a hot dip galvanizing process. These components shall be immersed in molten zinc to provide a coating that shall help protect against the effects of corrosion. (no exceptions)</p> <p><u>HOT DIP GALVANIZED BUMPER EXTENSION SUBSTRUCTURE</u> The bumper extension substructure shall be treated through a hot dip galvanizing process. These components shall be immersed in molten zinc to provide a coating that shall help protect against the effects of corrosion. (no exceptions)</p>		

	Bidder Complies	
	Yes	No
<p><u>COMPARTMENT INTERIOR PAINT</u></p> <p>The interior of all compartments shall be painted with a gray spatter type paint.</p> <p><u>REFLECTIVE STRIPES</u></p> <p>Three (3) reflective stripes shall be provided across the front of the vehicle and along the sides of the body. The reflective band shall consist of a 1.00" white stripe at the top with a 1.00" gap then a 6.00" white stripe with a 1.00" gap and a 1.00" white stripe on the bottom.</p> <p>The reflective band provided on the cab face shall be at the headlight level.</p> <p><u>REAR CHEVRON STRIPING</u></p> <p>There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus. The rear surface, excluding the rear roll up door, shall be covered.</p> <p>The colors shall be red and fluorescent yellow green diamond grade.</p> <p>Each stripe shall be 6.00" in width.</p> <p>This shall meet the requirements of the current edition of NFPA 1901, which states that 50% of the rear surface shall be covered with chevron striping.</p> <p><u>CAB DOOR REFLECTIVE STRIPE</u></p> <p>A 6.00" x 16.00" white reflective stripe shall be provided across the interior of each cab door. The stripe shall be located approximately 1.00" up from the bottom, on the door panel.</p> <p>This stripe shall meet the NFPA 1901 requirement.</p> <p><u>LETTERING</u></p> <p>The lettering shall be totally encapsulated between two (2) layers of clear vinyl.</p> <p><u>LETTERING</u></p> <p>Forty-one (41) to sixty (60) genuine gold leaf lettering, 3.00" high, with outline and shade shall be provided.</p> <p><u>E-COAT - TAK-4® FRONT AXLE</u></p> <p>The following front axle components shall be treated with an epoxy E-coat to provide resistance to corrosion and chemicals: (no exceptions)</p> <ul style="list-style-type: none"> • TAK-4 weldments (side plates and side plate interconnecting structure members) • Torsion bar anchor weldments . <p>After being treated with E-coat, components shall be finish painted black.</p> <p><u>UNDERCOATING, CAB & BODY</u></p> <p>The apparatus shall be properly treated by an authorized Ziebart dealer.</p>		

	Bidder Complies	
	Yes	No
<p>The underside of the apparatus shall be undercoated with an asphalt petroleum based material, dark in color.</p> <p>The undercoating material utilized on the apparatus shall be formulated to resist corrosion and deaden unwanted sound or road noise.</p> <p>Coating texture shall appear firm, flexible, and resistant to abrasion. Minimum dry film thickness shall be in the range of 8.00 to 12.00 mils.</p> <p>The material shall be applied to the following areas:</p> <ul style="list-style-type: none"> -Body and cab wheel well fender liners, on the back side only. -Underside of body and cab sheet metal, and structural components. -Underside and vertical sides of all sheet metal compartmentation, including support angles. -Structural support members under running boards, rear platforms, battery boxes, walkways, etc. -Inside surfaces of the pump heat enclosure. (when installed) -Suspension mounts. -Transmission cooler fittings. -Engine mounts. -Bottom and outside of framerails behind the forward edge of the water pump. <p>Exclusions shall be:</p> <ul style="list-style-type: none"> -Engine -Transmission -Drive lines -PTO's -Schroeder valves and tank drains -Intake valves -Air Horns, sirens and back-up alarms 		

	Bidder Complies	
	Yes	No
<p>-Frameraills forward of the forward edge of the water pump.</p> <p><u>UNDERCOATING FUEL TANK</u></p> <p>The apparatus fuel tank shall be fully undercoated by an authorized Ziebart dealer.</p> <p>The fuel tank shall be undercoated with an asphalt petroleum based material, dark in color.</p> <p>The undercoating material utilized on the tank shall be formulated to resist corrosion and deaden unwanted sound or road noise.</p> <p>Coating texture shall appear firm, flexible, and resistant to abrasion. Minimum dry film thickness shall be in the range of 8.00 to 12.00 mils.</p> <p>The material shall be applied to the fuel tank prior to tank installation on the apparatus. (no exceptions)</p> <p><u>FIRE APPARATUS PARTS MANUAL</u></p> <p>There shall be one (1) custom parts manual(s) in USB flash drive format for the complete fire apparatus provided.</p> <p>The manual(s) shall contain the following:</p> <ul style="list-style-type: none"> • Job number • Part numbers with full descriptions • Table of contents • Parts section sorted in functional groups reflecting a major system, component, or assembly • Parts section sorted in alphabetical order • Instructions on how to locate parts <p>Each 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><u>Service Parts Internet Site</u></p> <p>The service parts information included in these manuals are also available on the factory website. The website offers additional functions and features not contained in this manual, such as digital photographs and line drawings of select items. The website also features electronic search tools to assist in locating parts quickly.</p> <p><u>CHASSIS SERVICE MANUALS</u></p> <p>There shall be one (1) chassis service manuals on USB flash drives containing parts and service information on major components provided with the completed unit.</p> <p>The manual shall contain the following sections:</p> <ul style="list-style-type: none"> • Job number 		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Table of contents • Troubleshooting • Front Axle/Suspension • Brakes • Engine • Tires • Wheels • Cab • Electrical, DC • Air Systems • Plumbing • Appendix <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><u>CHASSIS OPERATION MANUAL</u></p> <p>The chassis operation manual shall be provided on one (1) USB flash drive.</p> <p><u>ONE (1) YEAR MATERIAL AND WORKMANSHIP</u></p> <p>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><u>ENGINE WARRANTY</u></p> <p>A Cummins five (5) year limited engine warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>STEERING GEAR WARRANTY</u></p> <p>A Sheppard three (3) year limited steering gear warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>FIFTY (50) YEAR STRUCTURAL INTEGRITY</u></p> <p>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><u>FRONT AXLE THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY</u></p> <p>Independent front suspension shall be provided with a three (3) year material and workmanship limited warranty. The manufacturer's warranty shall provide that the independent front</p>		

	Bidder Complies	
	Yes	No
<p>suspension and steering gears be free from any defect related to material and workmanship on the portion of the apparatus built by the manufacturer 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><u>REAR AXLE WARRANTY</u> A Eaton five (5)-year/100,000 mile parts and labor warranty shall be provided.</p> <p><u>ABS BRAKE SYSTEM THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY</u> A Meritor Wabco™ ABS brake system three (3) year limited warranty shall be provided.</p> <p><u>TEN (10) YEAR STRUCTURAL INTEGRITY</u> 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><u>TEN (10) YEAR PRO-RATED PAINT AND CORROSION</u> 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><u>CAMERA SYSTEM WARRANTY</u> A fifty four (54) month warranty shall be provided for the camera system.</p> <p><u>COMPARTMENT LIGHT WARRANTY</u> A ten (10) year material and workmanship limited warranty shall be provided for the Pierce 12 volt DC LED strip lights. The warranty shall cover the LED strip lights to be free from defects in material and workmanship that would arise under normal use.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>TRANSMISSION WARRANTY</u> The transmission shall have a five (5) year/unlimited mileage warranty covering 100 percent parts and labor. The warranty is to be provided by Allison Transmission and not the apparatus builder.</p> <p><u>TRANSMISSION COOLER WARRANTY</u> The transmission cooler shall carry a five (5) year parts and labor warranty (exclusive to the transmission cooler). In addition, a collateral damage warranty shall also be in effect for the first</p>		

	Bidder Complies	
	Yes	No
<p>three (3) years of the warranty coverage and shall not exceed \$10,000 per occurrence. A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>WATER TANK WARRANTY</u></p> <p>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><u>TEN (10) YEAR STRUCTURAL INTEGRITY</u></p> <p>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><u>ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY</u></p> <p>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> <p><u>SEVEN (7) YEAR PARTS, ONE (1) YEAR LABOR</u></p> <p>The pump and its components shall be provided with a seven (7) year parts and one (1) year labor limited warranty. The manufacturer's warranty shall provide that the pump and its components shall be free from failures caused by defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>TEN (10) YEAR PUMP PLUMBING WARRANTY</u></p> <p>The stainless steel plumbing components and ancillary brass fittings used in the construction of the water/foam plumbing system shall be warranted for a period of ten (10) years or 100,000 miles. This covers structural failures caused by defective design or workmanship, or perforation caused by corrosion, provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original purchaser for a period of ten years from the date of delivery.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>TEN (10) YEAR PRO-RATED PAINT AND CORROSION</u></p> <p>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</p>		

	Bidder Complies	
	Yes	No
<p>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><u>THREE (3) YEAR MATERIAL AND WORKMANSHIP</u></p> <p>The gold leaf lamination shall be provided with a three (3) year material and workmanship limited warranty. The warranty shall cover the gold leaf lamination as being free from defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>VEHICLE STABILITY CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a certification stating the apparatus complies with NFPA 1901, current edition, section 4.13, Vehicle Stability. The certification shall be provided at the time of bid.</p> <p><u>ENGINE INSTALLATION CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a certification, along with a letter from the engine manufacturer stating they approve of the engine installation in the bidder's chassis. The certification shall be provided at the time of delivery.</p> <p><u>POWER STEERING CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a certification stating the power steering system as installed meets the requirements of the component supplier. The certification shall be provided at the time of bid.</p> <p><u>CAB INTEGRITY CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a cab crash test certification with this proposal. The certification shall state that a specimen representing the substantial structural configuration of the cab has been tested and certified by an independent third party test facility. Testing events shall be documented with photographs, real-time and high-speed video, vehicle accelerometers, cart accelerometers, and a laser speed trap. The fire apparatus manufacturer shall provide a state licensed professional engineer to witness and certify all testing events. Testing shall meet or exceed the requirements below:</p> <ul style="list-style-type: none"> • SAE J2422 Cab Roof Strength Evaluation - Quasi-Static Loading Heavy Trucks. • European Occupant Protection Standard ECE Regulation No.29. • SAE J2420 COE Frontal Strength Evaluation - Dynamic Loading Heavy Trucks. <p><u>Side Impact</u></p> <p>The cab shall be subjected to dynamic preload where a 14,320-lb moving barrier is slammed into the side of the cab at 5.50 mph, striking with an impact of 13,000 ft-lb of force. This test is part of the SAE J2422 test procedure and more closely represents the forces a cab shall see in a rollover incident.</p>		

	Bidder Complies	
	Yes	No
<p><u>Frontal Impact</u> The same cab shall withstand a frontal impact of 32,600 ft-lb of force using a moving barrier in accordance with SAE J2420.</p> <p><u>Additional Frontal Impact</u> The same cab shall withstand a frontal impact of 65,098 ft-lb of force using a moving barrier. (Twice the force required by SAE J2420)</p> <p><u>Roof Crush</u> The cab shall be subjected to a roof crush force of 22,500 lb. This value meets the ECE 29 criteria, and is equivalent to the front axle rating up to a maximum of ten (10) metric tons.</p> <p><u>Additional Roof Crush</u> The same cab shall be subjected to a roof crush force of 110,000 lbs. (Four and a half times the load criteria of ECE 29)</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><u>CAB DOOR DURABILITY CERTIFICATION</u> 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><u>WINDSHIELD WIPER DURABILITY CERTIFICATION</u> 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> <p><u>SEAT BELT ANCHOR STRENGTH</u> 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><u>SEAT MOUNTING STRENGTH</u> Seat attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat mounting design shall be tested to withstand 20 G's of force in accordance with FMVSS 571.207 Seating Systems. The bidder shall certify, at time of</p>		

	Bidder Complies	
	Yes	No
<p>delivery, that each seat mount and cab structure design was pull tested to the required force and met the appropriate criteria.</p> <p><u>PERFORMANCE CERTIFICATIONS</u></p> <p><u>Cab Air Conditioning</u> Good cab air conditioning temperature and air flow performance keeps occupants comfortable, reduces humidity, and provides a climate for recuperation while at the scene. The cab air conditioning system shall cool the cab from a heat-soaked condition at 100 degrees Fahrenheit to an average of 78 degrees Fahrenheit in 30 minutes. The bidder shall certify that a substantially similar cab has been tested and has met these criteria.</p> <p><u>Cab Defroster</u> 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><u>Cab Auxiliary Heater</u> Good cab heat performance and regulation provides a more effective working environment for personnel, whether in-transit, or at a scene. An auxiliary cab heater shall warm the cab 77 degrees Fahrenheit from a cold-soak, within 30 minutes when tested using the coolant supply methods found in SAE J381. The bidder shall certify, at time of delivery, that a substantially similar cab has been tested and has met these criteria.</p> <p><u>AMP DRAW REPORT</u> 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> <ul style="list-style-type: none"> • Documentation of the electrical system performance tests. • A written load analysis, which shall include the following: <ul style="list-style-type: none"> ○ The nameplate rating of the alternator. ○ The alternator rating under the conditions specified per: <ul style="list-style-type: none"> ▪ Applicable NFPA 1901 or 1906 (Current Edition). ○ The minimum continuous load of each component that is specified per: <ul style="list-style-type: none"> ▪ Applicable NFPA 1901 or 1906 (Current Edition). ○ Additional loads that, when added to the minimum continuous load, determine the total connected load. ○ Each individual intermittent load. <p>All of the above listed items shall be provided by the bidder per the applicable NFPA 1901 or 1906 (Current Edition).</p>		

	Bidder Complies	
	Yes	No
<p><u>TOOL MOUNTING PROVISION</u> Dealer will provide a \$5,000.00 tool mounting provision to this specification, after delivery to be installed.</p> <p><u>TRAVEL PROVISION</u> Dealer will provide 2 trips, for 6 people. This will include hotel stays and meals.</p>		