

BRYSON CITY FIRE DEPARTMENT

Kenworth T370 2-door Chassis Pumper

Bidder
Complies

Yes No

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

INTENT OF SPECIFICATIONS

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

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

INSTRUCTIONS TO BIDDERS

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

Bids shall only be considered from companies that have an established reputation in the field of fire apparatus construction and have been in business for a minimum of 20 years. Furthermore, in order to insure fair, ethical and legal competition, neither the original equipment manufacturer (O.E.M.) nor parent company of the O.E.M. shall have ever been fined or convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market (no exception).

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

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

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

Each bid shall be accompanied by a set of manufacturer's set of specifications consisting of a detailed description of the apparatus, construction methods and equipment proposed to which the apparatus furnished under contract shall conform. These specifications shall indicate size, type, model and make of all components, parts and equipment, providing proof of compliance with each and every item in the departments advertised specifications. A letter only, even though written on company letterhead, shall not be sufficient. **An exception to this requirement shall not be acceptable.**

In accordance with the current edition of NFPA 1901 standards, the proposal shall specify whether the fire department or apparatus dealership shall provide required loose equipment.

The purchaser will utilize this advertised specification to compare all submitted bid proposals. To facilitate comparison, all bid proposal specifications shall be submitted in the same sequence as the advertised specification. Any bidder who fails to submit a set

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of bid proposal specifications, or who photocopies and submits these specifications as their own construction details will be considered nonresponsive. This shall render such proposal ineligible for award.

The purchaser's specification shall, in all cases, govern the construction of the apparatus, unless a properly documented exception or deviation was approved. Any bid indicating that the manufacturer's proposal shall supersede the purchaser's specification will be considered a complete substitute and immediately rejected.

THE PURCHASER HAS THE RIGHT TO REJECT ANY BIDS WHICH DOES NOT MEET THESE SPECIFICATIONS AND IS THE SOLE DECIDER TO DEEM WHICH BID IS IN THE BEST INTEREST OF THE PURCHASER.

EXCEPTIONS

These specifications are based upon design and performance criteria which have been developed by the fire department as a result of extensive research and careful analysis. Subsequently these specifications reflect the only type of fire apparatus that is acceptable at this time and all specifications herein contained are considered as minimum. Therefore exceptions to the specifications may not be accepted.

Bidders shall indicate in the "yes/no" column if their bid complies on each item (paragraph) specified.

If a product brand name is specified and is commercially available to all bidders, an exception to such items is not acceptable and such bid may be rejected.

Exceptions shall be allowed if they are equal to or superior to that specified and provided they are listed and fully explained on a separate page. All deviations, no matter how slight, shall be clearly explained on a separate sheet, in the bid sequence, citing the page and paragraph number(s) of the specifications, how the proposal deviation is different, how the deviation meets or exceeds the specifications and why it is necessary and entitled "EXCEPTIONS TO SPECIFICATIONS". The buyer reserves the right to require a bidder to provide proof in each case that a substituted item is equal to that specified. The buyer shall be the sole judge in determination of acceptable substitutes.

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

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

GENERAL DESIGN AND CONSTRUCTION

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

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

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<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> <p><u>DELIVERY</u></p> <p>Apparatus, to ensure 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>		

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<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> <ol style="list-style-type: none"> 1. 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. 2. 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. 3. 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. 4. 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><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 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></p> <p>TO ENSURE 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></p> <p>To provide an additional layer of service support, the successful manufacturer must also own a least two separate service facilities, one located in the northern portion of the US to</p>		

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service both Canada and the northern US states and one in the south to service the southern states.

The manufacturer shall stock 1 million parts equating to \$5,000,000 of inventory dedicated to service and replacement parts to ensure quick response and minimize down time. Furthermore, the manufacturer shall house the inventory in a dedicated facility, with a dedicated shipping area that ensures service parts are given priority. The bidder shall provide detailed documentation of service and replacement part resources.

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

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

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

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

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

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

LIABILITY

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

INSURANCE PROVIDED BY BIDDER

COMMERCIAL GENERAL LIABILITY INSURANCE

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

- Each Occurrence \$1,000,000
- Products/Completed Operations Aggregate \$1,000,000
- Personal and Advertising Injury \$1,000,000
- General Aggregate \$2,000,000

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

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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><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> <ul style="list-style-type: none"> - Each Accident Combined Single Limit: \$1,000,000 		
<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> <ul style="list-style-type: none"> - Aggregate: \$3,000,000 - Each Occurrence: \$3,000,000 		
<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>		
<ul style="list-style-type: none"> - Each Occurrence \$1,000,000 - Products/Completed Operations Aggregate \$1,000,000 		
<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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<ul style="list-style-type: none"> - Each Occurrence: \$25,000,000 - Aggregate: \$25,000,000 		
<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>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 apparatus specification includes a commercial chassis that has not been certified to meet the requirements of NFPA 1901 by the chassis manufacturer. Although this chassis may comply with certain aspects of the standard, has not received certification from this chassis manufacturer that all criteria have been met. The body as built by the manufacturer must comply with the NFPA standards effective January of 2016.</p>		
<p>Certification of slip resistance of all stepping, standing and walking surfaces must be supplied with delivery of the apparatus.</p>		
<p>All horizontal surfaces designated as a standing or walking surface that are greater than 48.00" above the ground must be defined by a 1.00" wide line along its outside perimeter. Perimeter markings and designated access paths to destination points shall be identified on the customer approval print and are shown as approximate. Actual location(s) shall be determined based on materials used and actual conditions at final build. Access paths may pass through hose storage areas and opening or removal of covers or restraints may be required. Access paths may require the operation of devices and equipment such as the aerial device or ladder rack.</p>		
<p>A plate that is highly visible to the driver while seated shall be provided. This plate shall show the overall height, length and gross vehicle weight rating.</p>		
<p>The manufacturer shall have programs in place for training, proficiency testing and performance for any staff involved with certifications.</p>		
<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 the current edition at time of contract</p>		

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execution. Fire Department's specifications that differ from NFPA specifications shall be indicated in the proposal as "non-NFPA."

PUMP TEST

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

GENERATOR TEST

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

INSPECTION TRIP(S)

The bidder shall provide one (1) factory inspection trip(s) for four customer representative(s). The inspection trip(s) shall be scheduled at times mutually agreed upon between the manufacturer's representative and the customer. All costs such as transportation, lodging and meals shall be the responsibility of the bidder. If the successful bidder's factory is more than 250 miles, the transportation shall be by commercial air carrier or commercial air charter

BID BOND NOT REQUESTED

A bid bond shall not be included. If requested, the following shall apply:

All bidders shall provide a bid bond as security for the bid in the form of a 5% bid bond to accompany their bid. This bid bond shall be issued by a Surety Company who is listed on the U.S. Treasury Departments list of acceptable sureties as published in Department Circular 570. The bid bond shall be issued by an authorized representative of the Surety Company and shall be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond shall include language, which assures that the bidder/principal shall give a bond or bonds as may be specified in the bidding or contract documents, with good and sufficient surety for the faithful performance of the contract, including the Basic One (1) Year Limited Warranty and for the prompt payment of labor and material furnished in the prosecution of the contract.

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

PERFORMANCE BOND NOT REQUESTED

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

The successful bidder shall furnish a Performance and Payment bond (Bond) equal to 100 percent of the total contract amount within 30 days of the notice of award. Such Bond shall be in a form acceptable to the Owner and issued by a surety company included within the

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<p>Department of Treasury's Listing of Approved Sureties (Department Circular 570) with a minimum A.M. Best Financial Strength Rating of A and Size Category of XV. In the event of a bond issued by a surety of a lesser Size Category, a minimum Financial Strength rating of A+ is required.</p> <p>Bidder and Bidder's surety agree that the Bond issued hereunder, whether expressly stated or not, also includes the surety's guarantee of the vehicle manufacturer's Bumper to Bumper warranty period included within this proposal. Owner agrees that the penal amount of this bond shall be simultaneously amended to 25 percent of the total contract amount upon satisfactory acceptance and delivery of the vehicle(s) included herein. Notwithstanding anything contained within this contract to the contrary, the surety's liability for any warranties of any type shall not exceed three (3) years from the date of such satisfactory acceptance and delivery, or the actual Bumper to Bumper warranty period, whichever is shorter.</p> <p><u>APPROVAL DRAWING</u> 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> Two (2) electrical wiring diagrams, prepared for the body as it interfaces with the commercial chassis, shall be provided.</p> <p><u>CHASSIS</u> The chassis shall be a Kenworth, Model T370, supplied with the following equipment:</p> <p><u>MAXIMUM OVERALL HEIGHT</u> The maximum overall height of the apparatus shall be 9' 6".</p> <p><u>WHEELBASE</u> The wheelbase of the vehicle shall be no greater than 193.00 inches.</p> <p><u>GVW RATING</u> The gross vehicle weight rating shall be a minimum of 39,000 pounds.</p> <p><u>FRAME</u> The frame rails shall be formed from 120,000 psi yield, heat treated alloy steel.</p> <p><u>FRAME LINER</u> A C-channel frame insert shall be provided.</p> <p><u>FRONT AXLE</u> Front axle shall be a Dana Spicer E-1302I Front Axle rated at 13,000 lbs. It shall have a 3-1/2in. drop.</p> <ul style="list-style-type: none"> - A heavy-duty end of frame crossmembers is required with 13.2K -16K front axles, with full inserts or 10-3/4 inch rails. 		

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<ul style="list-style-type: none"> - Air Braked Dana 13.2k or 14.6k front axles require the 14.6k air braked hub package. - Front axles rated over 12K require a heavy-duty rear cab support crossmembers. - Front axles with capacity of 13.2K or greater require 10-5/8 or 10-3/4 inch frame rail material. - Heavy-duty center bearing crossmembers are required with 13.2K -16K front axles and front drive axles. - The crossmembers switch from the medium-duty welded style to heavy-duty style bolted crossmembers and are not optional with other Medium-duty configurations. 		
<p><u>FRONT SUSPENSION</u></p>		
<ul style="list-style-type: none"> - Spring mounted - Capacity at Ground: 14,600 lb. 		
Shock absorbers shall be provided on the front axle.		
<p><u>FRONT BRAKES</u></p>		
The front brakes shall be S-Cam, 16.50" x 5.00". The front brakes shall be provided with automatic slack adjusters.		
<p><u>TIRE BRAND</u></p>		
The brand of tire provided on the commercial chassis for this apparatus as configured is Michelin.		
However, it is understood that the commercial chassis manufacturer reserves the right to substitute brands and models of tire as may be available at the factory on the date of manufacture. They shall provide the proper tread style and weight rating for the position in which the tire is installed.		
<p><u>TIRES, FRONT</u></p>		
Front tires shall be 11R22.50, radial tires with a tread pattern suitable for the steering axle position. The capacity of the tires shall meet or exceed the rating of the axle and/or suspension.		
<p><u>WHEELS, FRONT</u></p>		
Wheels for the front axle shall be 22.50" x 8.25" aluminum disc.		
<p><u>REAR AXLE</u></p>		
The single reduction rear axle shall be a Dana Spicer S26-190, with a ground rating capacity of 26,000 lb.		
The brake chambers shall be forward mounted.		
<p><u>PARKING BRAKE</u></p>		
The parking brake shall be spring set and located on the rear axle service brake.		
Rear axle brakes shall be 16.50" x 7.00", S-Cam drum type brakes. Automatic slack adjusters shall be provided.		
<p><u>REAR AXLE RATIO</u></p>		
A rear axle ratio shall be furnished to allow the vehicle to reach a top speed of 65 MPH.		

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<p><u>REAR SUSPENSION</u> The rear suspension shall be spring mounted multi-leaf with a capacity at ground level of 26,000 lbs.</p> <p><u>DUST SHIELDS</u> The front and rear brakes shall be provided with dust shields.</p> <p><u>TIRES, REAR</u> Rear tires shall be 12R22.50 radial tires with a traction tread pattern suitable for the drive axle position. The tires shall meet or exceed the weight rating of the axle and/or suspension.</p> <p><u>WHEELS, REAR</u> The rear wheels shall be aluminum 22.50" x 8.25" disc.</p> <p><u>TIRE PRESSURE MANAGEMENT</u> There shall be a RealWheels LED AirSecure™ tire alert pressure management system provided, that shall monitor each tire's pressure. A sensor shall be provided on the valve stem of each tire for a total of six (6) tires.</p> <p>The sensor shall calibrate to the tire pressure when installed on the valve stem for pressures between 10 and 200 psi. The sensor shall activate an integral battery operated LED when the pressure of that tire drops 5 to 8 psi.</p> <p>Removing the cap from the sensor shall indicate the functionality of the sensor and battery. If the sensor and battery are in working condition, the LED shall immediately start to flash.</p> <p><u>CHROME LUG NUT COVERS</u> Chrome lug nut covers shall be supplied on front and rear wheels.</p> <p><u>WHEEL CHOCKS</u> There shall be one (1) pair of folding Ziamatic, Model SAC-44-E, aluminum alloy, Quick-Choc wheel blocks with easy-grip handle provided.</p> <p><u>WHEEL CHOCK BRACKETS</u> There shall be one (1) pair of Zico, Model SQCH-44-H, horizontal mounting wheel chock brackets provided for the Ziamatic, Model SAC-44-E, folding wheel chocks. The brackets shall be made of aluminum and consist of a quick release spring loaded rod to hold the wheel chocks in place. The brackets shall be mounted below the left side rear compartment.</p> <p><u>ANTI-LOCK BRAKE SYSTEM</u> The vehicle shall be equipped with an anti-lock braking system. The ABS shall provide anti-lock braking control on both the front and rear wheels. It shall be a digitally controlled system that utilizes microprocessor technology to control the anti-lock braking system. Each wheel shall be monitored by the system. When any particular wheel begins to lockup, a signal shall be sent to the control unit. This control unit then shall reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.</p> <p><u>AIR COMPRESSOR, BRAKE SYSTEM</u> The air compressor shall have an output of 18.7 cubic feet per minute.</p>		

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<p><u>AIR DRYER</u> An air dryer with a heater shall be provided. Other features of this air dryer include:</p> <ul style="list-style-type: none"> - Desiccant style filter - In-line filtration system - Automatic purge valve <p><u>AIR INLET</u> A single air inlet with male coupling shall be provided. It shall allow station air to be supplied to the apparatus brake system through a shoreline hose. The inlet shall be located in the driver's side cab step area. 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> <ul style="list-style-type: none"> - Model: Paccar PX-9 - Number of Cylinders: Six (6) - Bore and Stroke: 4.49" x 5.69" - Displacement: 543 cubic inches (8.9 Liter) - Compression Ratio: 16.60:1 - Rated Brake Horsepower: 350 at 2000 rpm - Peak Torque: 1000 at 1400 rpm - Governed rpm: 2200 - Turbocharger - Charge Air Cooled - Fuel System: Hydraulically Actuated, Electronically Controlled Unit Injectors (HEUI) <p><u>ENGINE ACCESSORIES</u></p> <ul style="list-style-type: none"> - Air Cleaner: Dry type, with restriction indicator in cab - Fuel Filter: With check valve - Governor: Limiting speed type - Lube Oil Cooler - Lube Oil Filter: Full flow - Starting Motor: 12-volt - Oil Fill and Level Gauge <p><u>ENGINE WARRANTY</u> The engine shall come with a five (5) year or 100,000 mile warranty provided by the engine manufacturer.</p> <p><u>RADIATOR</u></p> <ul style="list-style-type: none"> - Pressurized System, Tube and Fin - Deaeration Tank and Sight Glass - Anti-Freeze Protection -30 Degrees Fahrenheit 		

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<p><u>HIGH IDLE</u> A high idle switch shall be provided on the instrument panel inside the cab. Activating the switch shall cause the vehicle to automatically maintain a preset engine rpm.</p> <p>The high idle switch shall be operational only when the parking brake is on and the truck transmission is in neutral. A green indicator light shall be provided adjacent to the switch. The light shall be labeled "OK To Engage High Idle."</p> <p><u>ENGINE BRAKE</u> An engine compression brake is to be installed with the controls located within easy reach of the driver. There shall be an "On/Off" switch and also a settings switch for "High/Low" activation.</p> <p><u>AIR INTAKE, w/EMBER SEPARATOR</u> The air inlet shall be equipped with a stainless steel mesh to separate water and burning embers from the air intake system such that particulate matter larger than 0.039" (1.0 mm) in diameter cannot reach the air filter element.</p> <p>This shall comply with NFPA 1901 and 1906 standards.</p> <p><u>EXHAUST SYSTEM</u> The exhaust system shall include a diesel particulate filter (DPF) and a selective catalytic reduction (SCR) device to meet current EPA standards. The DPF and SCR shall be mounted horizontally outside of the frame rails in the right side front step area.</p> <p><u>EXHAUST MODIFICATIONS</u> The exhaust shall terminate with a horizontal tailpipe and diffuser ahead of the right side rear wheels.</p> <p>A heat deflector shield shall be provided where the tail pipe is routed under any side compartmentation.</p> <p>All modifications shall be approved by the chassis engine manufacturer and/or the chassis OEM. Exhaust treatment devices shall not be altered.</p> <p><u>COOLANT LINES</u> Silicone hoses shall be used for the radiator and cab heater hoses installed by the chassis manufacturer.</p> <p>Hose clamps shall be 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> A 45 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 driver's side of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Diesel Fuel Only".</p>		

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<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>Servicing the fuel gauge sending unit shall be capable of being accomplished without draining fuel or dropping tank.</p>		
<p><u>DIESEL EXHAUST FLUID TANK</u></p>		
<p>A diesel exhaust fluid (DEF) tank shall be provided and mounted on the left side, below the cab.</p> <p>The tank shall be sized by the chassis manufacturer based on the engine provided. It shall include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.</p>		
<p><u>AUXILIARY FUEL COOLING SYSTEM</u></p>		
<p>A supplementary fuel cooling system shall be provided to allow the use of water from the discharge side of the pump for cooling the chassis engine fuel. The heat exchanger shall be a cylindrical type and shall be a separate unit. The cooler shall operate any time the pump is discharging water and shall be plumbed to the master drain valve.</p>		
<p><u>TRANSMISSION</u></p>		
<p>An Allison, model 3000 EVS, electronic torque converting automatic transmission shall be provided. To qualify for the EVS rating, the transmission shall be filled with synthetic transmission fluid.</p> <p>Two (2) PTO openings shall be located on left and right side of the converter housing (positions 8 o'clock and 4 o'clock).</p> <p>A transmission temperature gauge or warning light shall be installed on cab instrument panel.</p>		
<p><u>TRANSMISSION SHIFT CONTROL</u></p>		
<p>A push button shift module shall be mounted to right of driver. Shift position indicator shall be indirectly lit for after dark operation.</p> <p>The transmission shall be a five (5)-speed.</p>		
<p><u>TRANSMISSION COOLER</u></p>		
<p>An external transmission oil cooler shall be provided.</p>		
<p><u>DOWNSHIFT MODE (w/engine brake)</u></p>		
<p>The transmission shall be provided with an aggressive downshift mode.</p> <p>This shall provide earlier transmission downshifts to 2nd gear from top gear, resulting in improved engine braking performance.</p>		
<p><u>DRIVELINE</u></p>		
<p>Drivelines shall be a heavy duty metal tube equipped with universal joints properly sized for the application. A splined slip joint shall be provided in each driveshaft.</p>		
<p><u>STEERING</u></p>		
<p>The steering system shall be hydraulically driven. The steering column shall have an adjustable tilt and telescope feature.</p>		

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	Yes	No
<p><u>BUMPER</u> A one (1)-piece, full-width aerodynamic chromed steel bumper shall be attached to the front of the chassis frame.</p> <p><u>TOW PINS</u> Two (2) removable tow pins, designed with a capacity to pull the vehicle's full GVWR, shall be provided. Both tow pins shall be easily removable with the use of a receiver style design.</p> <p><u>CAB</u> Type: Conventional (engine forward) Construction: Aluminum and Fiberglass Accessories:</p> <ul style="list-style-type: none"> - Tinted Glass in all Windows - Fully Trimmed Vinyl Upholstery - Floor mat - Dual Sunvisors - Cab Entrance Handrails - Single Piece Windshield - Electric Windshield Washer - Two (2)-Speed Plus Intermittent, Electric Windshield Wipers - Daytime Running Lights - Dome Light with Door Courtesy Lights - Fresh Air Heater and Integral Defroster - Electric-powered LH & RH Door Window Lifts - Electric Door Locks - Gray Vinyl Upholstery <p><u>CAB GRILLE</u> The cab grille shall be chrome plated and the grille shall tilt with the hood.</p> <p><u>MIRRORS</u> Dual Moto mirrors sized 16.00" x 7.00" shall be provided. Both sides shall be heated and remote controlled. Convex mirrors sized 7.50" or larger shall be provided on each side. Additionally, an auxiliary down view mirror shall be provided above the passenger side door.</p> <p><u>VISIBILITY WINDOW</u> A visibility window, peeper, shall be provided in the passenger side cab door.</p> <p><u>CAB ACCESS STEPS</u> The cab access steps on the driver side and passenger side front shall be provided by the chassis manufacturer. These steps shall be modified by the apparatus manufacturer as required to meet NFPA step requirements.</p> <p><u>STEP LIGHTS</u> There shall be four (4) white LED step lights provided. There shall be one (1) light installed at each cab door, one (1) light per doorstep.</p>		

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<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 adjacent door is opened.</p>		
<p><u>AIR CONDITIONING</u></p>		
<p>An air conditioner shall be provided that is integral with heater and defroster system.</p>		
<p><u>ENGINE COMPARTMENT LIGHTS</u></p>		
<p>Two (2) engine compartment lights shall be installed under the engine hood, of which the switches are an integral part.</p>		
<p><u>STORAGE CONSOLE</u></p>		
<p>There shall be a console located in the cab with room for switches, radio heads and map storage. There shall be three (3) sections for map storage. The console shall be constructed out of smooth aluminum and painted black.</p>		
<p><u>SEATING CAPACITY</u></p>		
<p>The seating capacity in the cab shall be two (2).</p>		
<p><u>SEATING</u></p>		
<p>Seating inside the cab shall consist of an air-suspension driver's seat and a non-suspension officer's seat.</p>		
<p>The fixed base of the officer's seat shall be enclosed for tool storage and have a bottom horizontally hinged door and a latch.</p>		
<p><u>SEAT BELT WEB LENGTH</u></p>		
<p>The chassis seat belt web length as supplied by the commercial chassis manufacturer shall be compliant to NFPA 14.1.3.2 and 14.1.3.3.</p>		
<p><u>SEAT BELTS</u></p>		
<p>All seating positions in the cab and crew cab (if applicable) shall have red seat belts.</p>		
<p><u>HELMET STORAGE</u></p>		
<p>Helmet storage shall be located in a body compartment.</p>		
<p><u>HANDHELD LIGHT</u></p>		
<p>There shall be two (2) 12v Streamlight, Fire Vulcan, Model #44451, lights mounted as noted at preconstruction time.</p>		
<p>Each light housing shall be orange in color and be provided with a C4 LED and two (2) "ultra-bright blue taillight LEDs" The taillight LEDs shall have a dual mode of blinking or steady.</p>		
<p>Vehicle mount with 12VDC direct wire charging rack.</p>		
<p>Quick release buckle strap shall be included.</p>		
<p><u>CAB INSTRUMENTS</u></p>		
<ul style="list-style-type: none"> - Engine Temperature Gauge and Warning Buzzer - Engine Oil Pressure Gauge and Warning Buzzer - Speedometer with Odometer 		

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	Yes	No
<ul style="list-style-type: none"> - Engine Tachometer - Engine Hourmeter - Fuel Level Gauge - DEF Level Gauge and Warning Lamp - Voltmeter: Low voltage red warning light and audible alarm - Air Brake Pressure Gauge - Air Restriction Indicator - Circuit Breakers: For overload protection of electric circuits - Ignition Switch: Keyless type <p><u>EMERGENCY SWITCH PANEL</u> The emergency switch panel shall be provided in the cab, located on the floor mounted console.</p> <p><u>"DO NOT MOVE APPARATUS" INDICATOR</u> A flashing red indicator light (located in the driving compartment) shall be illuminated automatically per the current edition of NFPA. The light shall be labeled "Do Not Move Apparatus If Light Is On".</p> <p>The same circuit that activates the Do Not Move Apparatus indicator shall activate a steady tone alarm when the parking brake is released.</p> <p><u>OPEN DOOR INDICATOR LIGHT</u> A red "open door" indicator light shall be provided inside the cab, in clear view of the driver, to warn of an open compartment door.</p> <p><u>WIPER CONTROL</u> Wiper control shall include an intermittent feature and windshield washer controls.</p> <p><u>SPARE CIRCUIT</u> There shall be one (1) pair of wires, including a positive and a negative, installed on the apparatus.</p> <p>The above wires shall have the following features:</p> <ul style="list-style-type: none"> - 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 as noted at preconstruction for a KnoxBox. - Termination shall be with heat shrinkable butt splicing. - Wires shall be sized to 125% of the protection. <p>This circuit(s) may be load managed when the parking brake is set.</p> <p><u>SPARE CIRCUIT</u> There shall be one (1) pair of wires, including a positive and a negative, installed on the apparatus.</p> <p>The above wires shall have the following features:</p> <ul style="list-style-type: none"> - 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 		

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<ul style="list-style-type: none"> - Power and ground shall terminate in the center console - Termination shall be with 15 amp, power point plug with rubber cover - Wires shall be sized to 125 percent of the protection 		
The circuit(s) may be load managed when the parking brake is set.		
<u>VEHICLE DATA RECORDER</u>		
There shall be a vehicle data recorder (VDR) capable of reading and storing vehicle information provided.		
The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A USB cable can be used to connect the VDR to a laptop to retrieve required information. The program to download the information from the VDR shall be available to download on-line.		
The vehicle data recorder shall be capable of recording the following data via hardwired and/or CAN inputs:		
<ul style="list-style-type: none"> - Vehicle Speed - MPH - Acceleration - MPH/sec - Deceleration - MPH/sec - Engine Speed - RPM - Engine Throttle Position - % of Full Throttle - ABS Event - On/Off - Seat Occupied Status - Yes/No by Position - Seat Belt Buckled Status - Yes/No by Position - Master Optical Warning Device Switch - On/Off - Time - 24 Hour Time - Date - Year/Month/Day 		
The system shall also be capable of no additional functionality required.		
An additional input shall be included with this system. When the VDR is active, this input shall not be required.		
<u>SEAT BELT MONITORING SYSTEM</u>		
A seat belt monitoring system (SBMS) shall be provided. The SBMS shall be capable of monitoring up to six (6) seating positions indicating the status of each seat position per the following:		
<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 		
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.		

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Complies

Yes No

ELECTRICAL

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

1. All holes made in the roof shall be caulked with silicon. Rope caulk is not acceptable. Large fender washers, liberally caulked, shall be used when fastening equipment to the underside of the cab roof.
2. Any electrical component that is installed in an exposed area shall be mounted in a manner that shall not allow moisture to accumulate in it. Exposed area shall be defined as any location outside of the cab or body.
3. Electrical components designed to be removed for maintenance shall not be fastened with nuts and bolts. Metal screws shall be used in mounting these devices. Also a coil of wire shall be provided behind the appliance to allow them to be pulled away from mounting area for inspection and service work.
4. Corrosion preventative compound shall be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections shall require this compound in the plug to prevent corrosion and for easy separation (of the plug).
5. All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.
6. All electrical terminals in exposed areas shall have silicon (1890) applied completely over the metal portion of the terminal.

All emergency light switches shall be mounted on a separate panel installed in the cab. A master warning light switch and individual switches to be provided to allow pre-selection of emergency lights. The light switches shall be "rocker" type with an internal indicator light to show when switch is energized. All switches shall be properly identified and mounted in a removable panel for ease in servicing. Identification of the switches shall be done by either printing or etching on the switch panel. The switches and identification shall be illuminated.

All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard #108, shall be furnished. Rear identification lights shall be recessed mounted for protection. Lights and wiring mounted in the rear bulkheads shall be protected from damage by installing a false bulkhead inside the rear compartments.

An operational test shall be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.

The results of the tests shall be recorded and provided to the purchaser at time of delivery.

BATTERY SYSTEM

A single starting battery system shall be provided consisting of two (2) 12 volt, 1000 CCA, maintenance-free batteries.

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<p>Kenworth T370 2-door Chassis Pumper</p> <p>The battery system shall have a total of 2000 cold cranking amps (CCA).</p> <p><u>BATTERY LOCATION</u> The chassis batteries shall be located in the driver side cab step. No relocation of the batteries shall be required.</p> <p><u>MASTER BATTERY SWITCH</u> A master battery switch, to activate the battery system, shall be provided inside the cab within easy reach of the driver.</p> <p>The master battery disconnect switch shall be wired between the starter solenoid and the remainder of the electrical loads on the apparatus.</p> <p>A green "battery on" indicator light, visible from the driver's position, shall be provided.</p> <p><u>BATTERY CHARGER</u> There shall be an IOTA, Model DSL 45, 45 amp battery charger 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>The battery charger shall be located in the left body compartment mounted on the left wall as high as possible.</p> <p><u>AUTO EJECT FOR SHORELINE</u> There shall be one (1) Kussmaul™, Model 091-55-20-120, 20 amp 120 volt AC shoreline inlet(s) provided to operate the dedicated 120 volt AC circuits on the apparatus.</p> <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 - Current Rating (amps) - Phase - Frequency <p>The shoreline receptacle shall be located in the driver's side step area.</p> <p><u>ALTERNATOR</u> The alternator shall be 12-volt 320 amp.</p> <p><u>ELECTRONIC LOAD MANAGEMENT</u> A Kussmaul Load Manager 2 shall be provided on the apparatus. The device is an electronic load management (ELM) system that monitors the vehicles 12-volt electrical system and automatically reduces the electrical load in the event of a low voltage condition and by doing so, ensures the integrity of the electrical system.</p>		

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<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>EXTERIOR LIGHTING</u></p> <p>Exterior lighting shall meet or exceed Federal Department of Transportation, Federal Motor Vehicle Safety Standards and National Fire Protection Association requirements in effect at time of proposal.</p> <p>Front headlights shall be halogen type and comply to all FMVSS requirements.</p> <p>Five (5) LED clearance and marker lights shall be installed across the leading edge of the cab.</p> <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>REAR CLEARANCE/MARKER/ID LIGHTING</u></p> <p>There shall be a three (3) LED light bar 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) 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) LED lights installed on the side of the apparatus used as marker lights as close to the rear as practical per the following:</p> <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 		

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<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 a pair of Weldon, Model 3884-0100-1*, LED tri tail lamp assemblies provided.</p>		
<p>Each module shall include the following:</p>		
<ul style="list-style-type: none"> - One (1) LED stop and taillight - One (1) LED sequential turn light (right or left) - One (1) LED backup light - One (1) triple light, polished aluminum housing 		
<p>The assemblies shall be mounted on the face of the rear body compartments.</p>		
<p><u>LICENSE PLATE BRACKET</u></p>		
<p>There shall be one (1) Weldon, Model 0J10-0393-00, license plate bracket mounted on the rear of the body.</p>		
<p>A Truck-Lite, Model 15055, LED white light with chrome housing shall illuminate the license plate.</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>		
<p><u>CAB PERIMETER SCENE LIGHTS</u></p>		
<p>There shall be two (2) Truck-Lite, Model 6060C, white LED lights with grommets provided, one (1) for each cab door.</p>		
<p>These lights shall be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body perimeter scene lights.</p>		
<p><u>PUMP HOUSE PERIMETER LIGHTS</u></p>		
<p>There shall be two (2) Truck-Lite, Model 6060C, white LED lights with grommets 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) Truck-Lite, Model 6060C, white LED lights with grommets provided under 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>		

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<p><u>STEP LIGHTS</u> Four (4) white LED step lights shall be provided. One (1) step light shall be provided on each side, on the front compartment face and two (2) step lights at the rear to illuminate the tailboard.</p> <p>In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15.00" x 15.00" square placed 10.00" below the light and a minimum of 1.5 fc covering an entire 30.00" x 30.00" square at the same 10.00" distance below the light.</p> <p>These step lights shall be actuated with the pump panel light switch.</p> <p>All other steps on the apparatus shall be illuminated per the current edition of NFPA 1901.</p> <p><u>SIDE SCENE LIGHTS</u> There shall be two (2) HiViz, Model FT-GSM, 10,000 equivalent lumens 8.65" high x 10.61" wide x 2.75" deep light(s) with white LEDs installed on the side of the apparatus, one (1) high and forward on passenger's side body and one (1) high and rearward on passenger's side body.</p> <p>The light(s) shall be activated by a switch at the driver's side switch panel and by a switch at the driver's side pump panel.</p> <p>The light(s) may be load managed when the parking brake is applied.</p> <p><u>SIDE SCENE LIGHTS</u> There shall be two (2) HiViz, Model FT-GSM, 10,000 equivalent lumens 8.65" high x 10.61" wide x 2.75" deep light(s) with white LEDs installed on the side of the apparatus, one (1) high and forward on driver's side body and one (1) high and rearward on driver's side body.</p> <p>The light(s) shall be activated by a switch at the driver's side switch panel and by a switch at the driver's side pump panel.</p> <p>The light(s) may be load managed when the parking brake is applied.</p> <p><u>12 VOLT LIGHTING</u> There shall be a HiVizLED, Model FT-B-46-*, 46.00" 12 volt LED combination spot/flood light provided on the front of the cab mounted to the front of the lightbar.</p> <p>The painted parts of the light housing and brackets to be black .</p> <p>The light shall be controlled by a switch at the driver's side switch panel.</p> <p>The light shall be controlled by a switch at the pump operator's panel .</p> <p>The light shall be controlled by no additional switch location</p> <p>These light may be load managed when the parking brake is set.</p> <p><u>HOSE BED LIGHTS</u> 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>		

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	Yes	No
<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 SCENE LIGHTS</u> There shall be two (2) HiViz Model FT-GSM, 8.50" high x 10.51" long x 2.75" deep 6,500 measured lumens scene lights with white LEDs and trim installed at the rear of the apparatus.</p> <p>The lights shall be controlled by a switch at the driver's side switch panel, by a cup switch at the driver's side rear bulkhead and when the emergency master switch is activated and the transmission is shifted into reverse.</p> <p><u>WALKING SURFACE LIGHTS</u> There shall be white 12 volt DC LED light strips with stainless steel protective cover, provided to light the cargo area.</p> <ul style="list-style-type: none"> - One (1) light strip shall be installed the entire length of the driver's side of the cargo area. - One (1) light strip shall be installed the entire length of the passenger's side of the cargo area. <p>The light shall be activated when the body step lights are on.</p> <p><u>WATER TANK</u> Booster tank shall have a capacity of 1000 gallons and be constructed of polypropylene plastic by United Plastic Fabricating, Incorporated.</p> <p>Tank joints and seams shall be nitrogen welded inside and out.</p> <p>Tank shall be baffled in accordance with NFPA Bulletin 1901 requirements.</p> <p>Baffles shall have vent openings at both the top and bottom to permit movement of air and water between compartments.</p> <p>Longitudinal partitions shall be constructed of .38" polypropylene plastic and shall extend from the bottom of the tank through the top cover to allow for positive welding.</p> <p>Transverse partitions shall extend from 4.00" off the bottom of the tank to the underside of the top cover.</p> <p>All partitions shall interlock and shall be welded to the tank bottom and sides.</p> <p>Tank top shall be constructed of .50" polypropylene. It shall be recessed .38" and shall be welded to the tank sides and the longitudinal partitions.</p> <p>Tank top shall be sufficiently supported to keep it rigid during fast filling conditions.</p>		

BRYSON CITY FIRE DEPARTMENT Kenworth T370 2-door Chassis Pumper	Bidder Complies	
	Yes	No
<p>Construction shall include 2.00" polypropylene dowels spaced no more than 30.00" apart and welded to the transverse partitions. Two (2) of the dowels shall be drilled and tapped (.50" diameter, 13.00" deep) to accommodate lifting eyes.</p> <p>A sump that will be sized dependent on the tank to pump plumbing shall be provided at the bottom of the water tank.</p> <p>Sump shall include a drain plug and the tank outlet.</p> <p>Tank shall be installed in a fabricated cradle assembly constructed of structural steel.</p> <p>Sufficient crossmembers shall be provided to properly support bottom of tank. Crossmembers shall be constructed of steel bar channel or rectangular tubing.</p> <p>Tank shall "float" in cradle to avoid torsional stress caused by chassis frame flexing. Rubber cushions, .50" thick x 3.00" wide, shall be placed on all horizontal surfaces that the tank rests on.</p> <p>Stops or other provision shall be provided to prevent an empty tank from bouncing excessively while moving vehicle.</p> <p>Mounting system shall be approved by the tank manufacturer.</p> <p>Fill tower shall be constructed of .50" polypropylene and shall be a minimum of 8.00" wide x 14.00" long.</p> <p>Fill tower shall be furnished with a .25" thick polypropylene screen and a hinged cover.</p> <p>An overflow pipe, constructed of 4.00" schedule 40 polypropylene, shall be installed approximately halfway down the fill tower and extend through the water tank and exit to the rear of the rear axle.</p> <p><u>DIRECT TANK FILL</u></p> <p>There shall be one (1) - 2.50" gated external tank fill(s) installed and properly labeled at the rear of the water tank, located right side, with the valve installed as low as practical for easy hose connection.</p> <p>Piping, for the fill, shall be routed through the rear wall of the tank and include a flow deflector to break up the stream of water entering the water tank.</p> <p>A 2.50" full flow ball valve with 2.50" piping and a 2.50" (F)NST chrome swivel shall be located at the inlet.</p> <p>A 2.50" chrome plated 45 degree elbow and plug with VLH automatic pressure relieving thread technology shall be provided for the tank fill.</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>Upper and rear edges of side panels shall have a double break for rigidity, a split tube finish shall not be acceptable.</p> <p>The upper inside area of the beavertails shall be covered with brushed stainless steel to prevent damage to painted surface when hose is removed.</p>		

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<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 inside of the hose bed shall be unpainted and have a DA sanded finish . The inside of the cargo area shall be unpainted with a DA sanded finish .</p> <p>Hose bed shall accommodate 200' of 2.50", 1000' of 5.00" & 400' of 3.00".</p> <p><u>HOSE BED DIVIDER</u></p> <p>Two (2) adjustable hosebed dividers shall be furnished for separating hose.</p> <p>Each divider shall be constructed of a .25" brushed aluminum sheet. Flat surfaces shall be sanded for uniform appearance, or constructed of brushed aluminum.</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 black nylon Velcro® strap at the top of the hose bed. At the rear of the hose bed, 2.00" black nylon webbing with a 1.50" x 4.00" box pattern shall attach at the top rear outside corners with seat belt buckle fasteners. The webbing shall have straps connected with seat belt buckle fasteners located at the rear body sheet below the hose bed.</p> <p>A cross-divider shall be provided just behind the fill tower. The divider shall be bolted to the side sheet.</p> <p><u>RUNNING BOARDS</u></p> <p>Running boards shall be fabricated of .125" bright aluminum treadplate.</p> <p>Each running board shall be supported by a welded 2.00" square tubing and channel assembly, which shall be bolted to the pump compartment substructure.</p> <p>Running boards shall be 12.75" deep and spaced .50" away from the pump panel.</p> <p>A splash guard shall be provided above the running board treadplate.</p> <p><u>TAILBOARD</u></p> <p>The tailboard shall also be constructed of .125" bright aluminum treadplate and spaced .50" from the body, as well as supported by a structural steel assembly.</p> <p>The tailboard area shall be 16.00" deep.</p> <p>The exterior side shall be flanged down and in for increased rigidity of tailboard structure.</p> <p><u>REAR WALL, SMOOTH ALUMINUM/BODY MATERIAL</u></p> <p>The rear facing surfaces of the center rear wall shall be smooth aluminum.</p> <p>The bulkheads, the surface to the rear of the side body compartments, shall be smooth and the same material as the body.</p>		

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	Yes	No
<p>Kenworth T370 2-door Chassis Pumper</p> <p>Any inboard facing surfaces below the height of the hosebed shall be aluminum diamondplate .</p> <p><u>TOW BAR</u> 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>HOSE TRAY</u> Two (2) hose trays shall be recessed one (1) in each side running board.</p> <p>Capacity of the tray shall be 25.00' of 5.00" soft suction hose.</p> <p>Rubber matting shall be installed on the floor of the tray to provide proper ventilation.</p> <p><u>COMPARTMENTATION</u> Body and compartments shall be fabricated of .125", 5052-H32 aluminum.</p> <p>Side compartments shall be an integral assembly with the rear fenders.</p> <p>Circular fender liners shall be provided for prevention of rust pockets and ease of maintenance.</p> <p>Side compartment flooring shall be of the sweep out design with the floor higher than the compartment door lip.</p> <p>The side compartment door opening shall be framed by flanging the edges in 1.75" and bending out again .75" to form an angle.</p> <p>Drip protection shall be provided above the doors by means of bright aluminum extrusion, formed bright aluminum treadplate or polished stainless steel.</p> <p>The top of the compartment shall be covered with bright aluminum treadplate rolled over the edges on the front, rear and outward side. These covers shall have the corners welded.</p> <p>Side compartment covers shall be separate from the compartment tops.</p> <p>Front facing compartment walls shall be covered with bright aluminum treadplate.</p> <p>All screws and bolts which protrude into a compartment shall have acorn nuts on the ends to prevent injury.</p> <p><u>UNDERBODY SUPPORT SYSTEM</u> 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>		

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<p>The backbone of the support system shall be the chassis frame rails which is the strongest component of the chassis and is designed for sustaining maximum loads.</p> <p>The support system shall include .375" thick steel vertical angle supports bolted to the chassis frame rails with .625" diameter bolts.</p> <p>Attached to the bottom of the steel vertical angles shall be horizontal angles, with gussets welded to the vertical members, which extend to the outside edge of the body.</p> <p>A steel frame shall be mounted on the top of these supports to create a floating substructure which shall result in a 500 lb. equipment support rating per lower compartment.</p> <p>The floating substructure shall be separated from the horizontal members with neoprene elastomer isolators. These isolators shall reduce the natural flex stress of the chassis from being transmitted to the body.</p> <p>Isolators shall have a broad load range, proven viability in vehicular applications, be of a fail-safe design and allow for all necessary movement in three (3) transitional and rotational modes.</p> <p>The neoprene isolators shall be installed in a modified V three (3)-point mounting pattern to reduce the natural flex of the chassis being transmitted to the body.</p> <p>A design with body compartments hanging on the chassis in an unsupported fashion shall not be acceptable.</p>		
<p><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.</p>		
<p><u>LOUVERS</u></p>		
<p>Louvers shall be stamped into compartment walls to provide the proper airflow inside the body compartments and to prevent water from dripping into the compartment. Where these louvers are provided, they shall be formed into the metal and not added to the compartment as a separate plate.</p>		
<p><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, stress coating and strain gauging shall be performed with special attention given to fatigue, life and structural integrity of the cab, body and substructure.</p>		
<p>Body shall be tested while loaded to its greatest in-service weight.</p>		
<p>The criteria used during the testing procedure shall include:</p>		
<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 at 35 mph on a washboard road. - Driving the vehicle at 55 mph on a smooth road. 		

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<ul style="list-style-type: none"> - Accelerating the vehicle fully, until reaching the approximate speed of 45 mph on rough pavement. 		
Evidence of actual testing techniques shall be made available upon request.		
<u>LEFT SIDE COMPARTMENTATION</u>		
The left side compartmentation shall consist of three lap door compartments.		
A full height, vertically hinged, double door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 44.00" wide x 66.63" high x 25.88" deep in the lower 25.00" of the compartment and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 37.00" wide x 61.88" high.		
A horizontally hinged, single lift-up door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 66.50" wide x 32.88" high x 12.00" deep. The clear door opening shall be a minimum of 59.25" wide x 27.00" high.		
A full height, vertically hinged, double door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 47.75" wide x 67.63" high x 25.88" deep in the lower 26.00" of the compartment and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 43.50" wide x 62.88" high.		
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.		
Closing of the doors shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.		
The vertically hinged doors shall be furnished with a positive door holder.		
The lift-up door shall be furnished with two gas-charged cylinders to assist in the opening of the door and to maintain the door in an open position. There shall be a field adjustable, three-position bracket mounted on the vertical side door opening that shall allow the door to be held open at 87°, 90°, or 93°.		
<u>RIGHT SIDE COMPARTMENTATION</u>		
The right side compartmentation shall consist of two lap door compartments.		
A vertically hinged, double door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 44.00" wide x 32.63" high x 25.88" deep in the lower 25.00" of the compartment and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 37.00" wide x 27.88" high.		
A vertically hinged, double door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 47.75" wide x 33.63" high x 25.88" deep in the lower 26.00" of the compartment and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 43.50" wide x 28.88" high.		
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.		

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<p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand. A positive door holder shall be furnished with this compartment.</p> <p><u>SIDE COMPARTMENT DOORS</u></p> <p>All hinged compartment doors shall be lap style with double panel construction and shall be a minimum of 1.50" thick. To provide additional door strength a "C" section reinforcement shall be installed between the outer and interior panels.</p> <p>Doors shall be provided with a closed cell rubber gasket around the surface that laps onto the body. A second heavy-duty automotive rubber molding with a hollow core shall be installed on the door framing that seals onto the interior panel, to ensure a weather resisting compartment.</p> <p>All compartment doors shall have polished stainless steel continuous hinge with a pin diameter of .25" that is bolted or screwed on with stainless steel fasteners. (Hinges which are welded on shall not be acceptable.)</p> <p>All door locking mechanisms shall be fully enclosed within the door panels to prevent fouling of the lock in the event equipment inside shifts into the lock area.</p> <p>Doors shall be latched with recessed, polished stainless steel "D" ring handles and FMVSS approved door locking mechanisms.</p> <p>To prevent corrosion caused by dissimilar metals, compartment door handles shall not be attached to outer door panel with screws. A rubber gasket shall be provided between the "D" ring handle and the door.</p> <p><u>REAR COMPARTMENTATION</u></p> <p>A roll-up door compartment above the rear tailboard shall be provided.</p> <p>The interior dimensions of this compartment shall be 40.00" wide x 47.38" high x 25.88" deep. The spool of the rollup door at the top of the compartment takes up some usable space. The depth of the compartment shall be calculated with the compartment door closed.</p> <p>A louvered, removable access panel shall be furnished on the back wall of the compartment.</p> <p>The rear compartment shall be open into the rear side compartments.</p> <p>The clear door opening of this compartment shall be a minimum of 33.25" wide x 37.63" 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><u>ROLLUP REAR COMPARTMENT DOOR</u></p> <p>There shall be a rear 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>		

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	Yes	No
<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> <p>A heavy-duty magnetic switch shall be used for control of open compartment door warning lights.</p> <p><u>DOOR GUARD</u> There shall be one (1) compartment door that shall include a guard/drip pan designed to protect the rollup door from damage when in the retracted position and contain any water spray. The guard shall be fabricated from stainless steel and installed rear compartment.</p> <p><u>COMPARTMENT LIGHTING</u> There shall be six (6) 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> There shall be seven (7) sets of tracks for mounting shelf(s) in LS1, LS2, LS3, RS1, RS2, RS3 and B1. These tracks shall be installed vertically to support the adjustable shelf(s) and shall be full height of the compartment. The tracks shall be painted to match the compartment interior.</p> <p><u>ADJUSTABLE SHELVES</u> There shall be six (6) shelves with a capacity of 500 lb. provided.</p> <p>The shelf construction shall consist of .188" aluminum painted spatter gray with 2.00" sides.</p>		

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<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 in LS1 at the depth transition point, in LS2 centered between the floor and ceiling, in LS3 in the upper third, in LS1 in the upper third, in LS3 at the depth transition point and in B1 in the upper third.</p> <p><u>SLIDE-OUT FLOOR MOUNTED TRAY</u></p> <p>There shall be five (5) floor mounted slide-out tray(s) provided.</p> <p>Each tray shall have 2.00" high sides and a minimum capacity rating of 500 lb. in the extended position.</p> <p>Each tray shall be constructed of aluminum painted spatter gray</p> <p>There shall be two undermount-roller bearing type slides rated at 250lb each provided. The pair of slides shall have a safety factor rating of 2.</p> <p>To ensure years of dependable service, the slides shall be coated with a finish that is tested to withstand a minimum of 1,000 hours of salt spray per ASTM B117.</p> <p>To ensure years of easy operation, the slides shall require no more than a 50lb force for push-in or pull-out movement when fully loaded after having been subjected to a 40 hour vibration (shaker) test under full load. The vibration drive file shall have been generated from accelerometer data collected from a heavy truck chassis driven over rough gravel roads in an unloaded condition. Proof of compliance shall be provided upon request.</p> <p>Automatic locks shall be provided for both the "in" and "out" positions. The trip mechanism for the locks shall be located at the front of the tray for ease of use with a gloved hand.</p> <p>The location(s) shall be RS1, RS2, LS1, B1 and LS3.</p>		
<p><u>PEGBOARD</u></p> <p>There shall be 3/16" thick aluminum pegboard spatter gray painted shall be installed on the back wall of three (3) compartments. It shall be mounted using two (2) horizontal tracks. Retainers shall be used to mount the pegboard to the tracks. The pegboard(s) installed shall be the full height of the upper standard depth section of the compartment. The holes shall be .281" diameter, punched 1.00" on center. Pegboard shall be provided in the following compartments: LS1, LS2 and LS3.</p>		
<p><u>RUB RAIL</u></p> <p>Bottom edge of the side and rear of the body compartments shall be trimmed with a bright aluminum extruded rub rail.</p> <p>Trim shall be 2.12" high with 1.38" flanges turned outward for rigidity.</p> <p>The rub rails shall not be an integral part of the body construction, which allows replacement in the event of damage.</p>		
<p><u>BODY FENDER CROWNS</u></p> <p>Polished stainless steel fender crowns shall be provided around the rear wheel openings with a dielectric barrier shall be provided between the fender crown and the fender sheet metal to prevent corrosion.</p>		

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<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. Rubber welting shall be provided between the body and crown.</p>		
<p><u>BODY FENDER LINER</u></p>		
<p>A painted fender liner shall be provided. The liners shall be removable to aid in the maintenance of rear suspension components.</p>		
<p><u>HARD SUCTION HOSE</u></p>		
<p>NFPA 1901, 2016 edition, section 5.8.2 requires a minimum of 20 ft of suction hose or 15 ft of supply hose.</p>		
<p>Hose is not on the apparatus as manufactured. The fire department shall provide suction or supply hose.</p>		
<p>There shall be Two (2) lengths of 10' long x 6.00" diameter hose provided and equipped with rocker lug and long handle couplings provided on the ends.</p>		
<p><u>HOSE TROUGHS</u></p>		
<p>Hard suction hose shall be carried above the compartment in V-shaped troughs and held in place by chrome plated, quarter turn, spring loaded clamps.</p>		
<p>Troughs shall be constructed of aluminum and painted to match the truck.</p>		
<p><u>HANDRAILS</u></p>		
<p>The handrails shall be 1.25" diameter anodized aluminum extrusion, with a ribbed design, to provide a positive gripping surface.</p>		
<p>Chrome plated end stanchions shall support the handrail. Plastic gaskets shall be used between end stanchions and any painted surfaces.</p>		
<p>Drain holes shall be provided in the bottom of all vertically mounted handrails.</p>		
<p>Handrails shall be provided to meet NFPA 1901 section 15.8 requirements. The handrails shall be installed as noted on the sales drawing.</p>		
<p><u>HANDRAILS</u></p>		
<p>One (1) vertical handrail shall be located on each rear beavertail.</p>		
<p>One (1) full width horizontal handrail shall be provided below the hose bed at the rear of the apparatus.</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 left side rearward of the rear wheels. The full width double door shall cover the air bottle opening and the fuel tank access. The compartment will be square with angled corners. A polished 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 and black Dura-Surf friction reducing material shall be provided.</p>		

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<p><u>AIR BOTTLE STORAGE (Triple)</u> A quantity of three (3) air bottle compartments designed to hold (3) air bottles up to 7.25" in diameter x 26.00" deep shall be provided on the left side forward of the rear wheels, on the right side forward of the rear wheels and on the right side rearward of the rear wheels. A polished stainless steel door with a 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 Dura-Surf friction reducing material shall be provided.</p> <p><u>AIR BOTTLE COMPARTMENT STRAP</u> 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>EXTENSION LADDERS PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, section 5.8.1.2 requires an extension ladder.</p> <p>The extension ladder is not on the apparatus as manufactured. There shall be one (1) extension ladder(s) provided and installed by the fire department. The ladder(s) shall be a 24' Alco-Lite FEL-24, two (2)-section.</p> <p><u>ROOF LADDER PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, section 5.8.1.2 requires a minimum of one (1) roof ladder.</p> <p>The roof ladder is not on the apparatus as manufactured. There shall be one (1) roof ladder(s) provided and installed by the fire department. The ladder(s) shall be a 14' Duo-Safety 775-A.</p> <p><u>LADDER BRACKETS</u> The ladders shall be installed on the right side of the hose body in lined brackets and held in place by chrome plated, quarter-turn spring loaded clamps. The clamps shall be such that when the roof ladder is removed, the clamps can be moved a half turn to hold the extension ladder in place. The ladder brackets shall be adjustable up and down.</p> <p><u>FOLDING LADDER PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, section 5.8.1.2 requires a folding ladder.</p> <p>The folding ladder is not on the apparatus as manufactured. There shall be one (1) 10' aluminum, FL-10, Alco-Lite folding ladder provided by the fire department. The ladder shall be installed in a stainless steel trough mounted above the ladders on the ladder brackets.</p> <p><u>PIKE POLE</u> One (1) Fire Hooks Unlimited, New York Roof Hook , 10' long roof hook with steel shaft and pry end shall be provided.</p> <p><u>6 FT PIKE POLE</u> There shall be one (1) Fire Hooks Unlimited NY roof hook RH-6, 6 foot pike pole(s) with steel handles and pry end provided on top of the right side catwalk.</p> <p><u>PIKE POLE STORAGE</u> Aluminum tubing shall be used for the storage of two (2) pike poles and shall be located on top of the right side catwalk. If the head of a pike pole can come in contact with a</p>		

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<p>painted surface, a stainless steel scuffplate shall be provided. The pike pole tube shall be notched to allow a New York style pike pole to fit into the tube.</p>		
<p><u>FOLDING STEPS FRONT OF BODY</u></p>		
<p>Folding steps shall be provided full height on the left side body compartments to provide access to the cargo bed. Steps shall be spaced evenly on the sales drawing. Actual quantity may vary due to pump panel interferences but shall meet the NFPA required maximum stepping height.</p>		
<p>The Trident steps shall be bright finished, non-skid with a black coating.</p>		
<p>The steps shall incorporate an LED light to illuminate the stepping surface.</p>		
<p>The steps can be used as a hand hold with two openings wide enough for a gloved hand.</p>		
<p><u>REAR FOLDING STEPS</u></p>		
<p>Bright finished, non-skid folding steps with a black coating shall be provided at the rear. Each step shall incorporate an LED light to illuminate the stepping surface. The steps can be used as a hand hold with two openings wide enough for a gloved hand.</p>		
<p><u>MIDSHIP FIRE PUMP</u></p>		
<p>Midship fire pump shall be a Hale QMAX-150, 1500 gpm single (1) stage midship mounted centrifugal type.</p>		
<p>Pump shall be the class "A" type.</p>		
<p>Pump shall deliver the percentage of rated discharges at the pressures indicated below:</p>		
<ul style="list-style-type: none"> - 100% of rated capacity at 150 psi net pump pressure. - 100% of rated capacity at 165 psi net pump pressure. - 70% of rated capacity at 200 psi net pump pressure. - 50% of rated capacity at 250 psi net pump pressure. 		
<p>Entire pump and both suction and discharge passages shall be hydrostatically tested to a pressure of 500 psi.</p>		
<p>Pump shall be fully tested at the pump manufacturer's factory to the performance requirements as outlined by the current NFPA 1901 standards and shall be free from objectionable pulsation and vibration.</p>		
<p>Pump body and related parts shall be of fine grain, alloy cast iron with a minimum tensile strength of 30,000 psi (2041.2 bar).</p>		
<p>All moving parts in contact with water shall be of high quality bronze or stainless steel. Pumps utilizing castings made of lower tensile strength cast iron shall not be acceptable.</p>		
<p>Pump body shall be horizontally split, on a single plane in two (2) sections, for easy removal of entire impeller assembly, including wear rings and bearings from beneath the pump, without disturbing pump piping or the mounting of the pump in the chassis.</p>		
<p>Pump shall have one (1) double suction impeller. The pump body shall have two (2) opposed discharge volute cutwaters to eliminate radial unbalance.</p>		
<p>Pump impeller shall be hard, fine grain bronze of the mixed flow design, accurately machined, hand-ground and individually balanced. The vanes of the impeller intake eyes</p>		

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Bidder
Complies

Yes No

shall be hand-ground and polished to a sharp edge. They shall be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.

Impeller clearance rings shall be bronze and easily renewable without replacing impeller or pump volute body. They shall be of the wrap-around double labyrinth design for maximum efficiency.

Pump shaft shall be electric furnace heat-treated, corrosion resistant stainless steel. It shall be super-finished under packing with galvanic corrosion (zinc separators in packing) protection for longer shaft life. Pump shaft shall be sealed with double oil seal to keep road dirt and water out of drive unit.

Pump shaft shall be rigidly supported by three (3) bearings for minimum deflection. A high lead bronze sleeve bearing shall be located immediately adjacent to the impeller (on the side opposite of the drive unit). The sleeve bearing shall be automatically oil lubricated and pressure balanced to exclude foreign material. The remaining bearings shall be heavy-duty, deep groove ball bearings in the gearbox and shall be splash lubricated.

PUMP PACKING

The pump shaft shall have one (1) packing gland located on inlet side of the pump and shall be of the split design for ease of repacking.

The packing gland shall be a full-circle threaded design to exert uniform pressure on packing and prevent "cocking" and uneven packing load when it is tightened.

The packing gland shall be easily adjusted by hand (with a rod or screwdriver, no special tools or wrenches required).

The packing rings shall be of a unique, permanently lubricated, long-life graphite composition and have sacrificial zinc foil separators to protect the pump shaft from galvanic corrosion.

PUMP TRANSMISSION

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

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

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

BRYSON CITY FIRE DEPARTMENT Kenworth T370 2-door Chassis Pumper	Bidder Complies	
	Yes	No
<p><u>PUMPING MODE</u> An interlock system shall be provided to ensure that the pump drive system components are properly engaged so that the apparatus can be safely operated. The interlock system shall be designed to allow stationary pumping only.</p> <p><u>AIR PUMP SHIFT</u> Pump shift engagement shall be made by a two (2) position sliding collar, actuated pneumatically (by air pressure), with a three (3) position air control switch located in the cab. A manual back-up shift control shall also be located on the left side pump panel.</p> <p>Two (2) indicator lights shall be provided adjacent to the pump shift inside the cab. One (1) green light shall indicate the pump shift has been completed and be labeled "pump engaged". The second green light shall indicate when the pump has been engaged and the chassis transmission is in pump gear. This indicator light shall be labeled "OK to pump".</p> <p>The pump shift shall be interlocked to prevent the pump from being shifted out of gear when the chassis transmission is in gear to meet NFPA requirements.</p> <p>The pump shift control in the cab shall be illuminated to meet NFPA requirements.</p> <p><u>TRANSMISSION LOCK-UP</u> The direct gear transmission lock-up for the fire pump operation shall engage automatically when the pump shift control in the cab is activated.</p> <p><u>AUXILIARY COOLING SYSTEM</u> A supplementary heat exchange cooling system shall be provided to allow the use of water from the discharge side of the pump for cooling the engine water. Heat exchanger shall be cylindrical type and shall be a separate unit. It shall be installed in the pump or engine compartment with the control located on the pump operator's control panel. Exchanger shall be plumbed to the master drain valve.</p> <p><u>INTAKE RELIEF VALVE - PUMP</u> There shall be One (1) Elkhart Style 40 relief valve(s) installed on the suction side of the pump preset at 125 psig.</p> <p>The relief valve(s) shall have a working range of 75 psi to 250 psi.</p> <p>The outlet shall terminate below the frame rails with a 2.50" National Standard hose thread adapter and shall have a "do not cap" warning tag.</p> <p>The relief valve pressure control shall be located behind the right side pump panel with a stainless steel access door .</p> <p><u>PRESSURE CONTROLLER</u> A Pierce Pump Boss Model PBA300 pressure governor shall be provided.</p> <p>A pressure transducer shall be installed in the water discharge manifold on the pump.</p> <p>The display panel shall be located at the pump operator's panel.</p>		

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	Yes	No
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<p><u>PRIMING PUMP</u> The priming pump shall be a Trident Emergency Products compressed air powered, high efficiency, multistage venturi based AirPrime System, conforming to standards outlined in the current edition of NFPA 1901.</p> <p>All wetted metallic parts of the priming system are to be of brass and stainless steel construction.</p> <p>One (1) priming control shall open the priming valve and start the pump primer.</p> <p><u>PUMP MANUALS</u> 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> 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 hoses 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>FOAM SYSTEM PLUMBING</u> All piping that is in contact with the foam concentrate or foam/water solution shall be stainless steel. The fittings shall be stainless steel or brass. Cast iron pump manifolds will be allowed.</p> <p><u>MAIN PUMP INLETS</u> 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><u>MAIN PUMP INLET CAP</u> 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>		

BRYSON CITY FIRE DEPARTMENT	Bidder Complies	
	Yes	No
<p data-bbox="94 159 656 191">Kenworth T370 2-door Chassis Pumper</p> <p data-bbox="94 218 496 249"><u>SHORT SUCTION TUBE(S)</u></p> <p data-bbox="94 256 1354 323">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 data-bbox="94 350 224 382"><u>VALVES</u></p> <p data-bbox="94 388 1354 491">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 data-bbox="94 518 704 550">Valves shall have a ten (10) year warranty.</p> <p data-bbox="94 577 358 609"><u>LEFT SIDE INLET</u></p> <p data-bbox="94 615 1354 682">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.</p> <p data-bbox="94 709 1156 741">The auxiliary inlet shall be provided with a strainer, chrome swivel and plug.</p> <p data-bbox="94 768 1312 800">The location of the valve for the one (1) inlet shall be recessed behind the pump panel.</p> <p data-bbox="94 827 350 858"><u>INLET CONTROL</u></p> <p data-bbox="94 865 1354 932">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 data-bbox="94 959 461 991"><u>INLET BLEEDER VALVE</u></p> <p data-bbox="94 997 1354 1205">A 0.75" bleeder valve shall be provided for each side gated inlet. The valves shall be located behind the panel with a swing style handle control extended to the outside of the panel. The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. The water discharged by the bleeders shall be routed below the chassis frame rails.</p> <p data-bbox="94 1232 337 1264"><u>TANK TO PUMP</u></p> <p data-bbox="94 1270 1354 1451">The booster tank shall be connected to the intake side of the pump with stainless steel piping and a quarter turn 3.00" full flow line valve with the control remotely located at the operator's panel. Tank to pump line shall run straight (no elbows) from the pump into the front face of the water tank and angle down into the tank sump. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing.</p> <p data-bbox="94 1478 1354 1545">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 data-bbox="94 1572 302 1604"><u>TANK REFILL</u></p> <p data-bbox="94 1610 1354 1677">A 1.50" combination tank refill and pump re-circulation line shall be provided, using a quarter-turn full flow ball valve controlled from the pump operator's panel.</p> <p data-bbox="94 1705 613 1736"><u>LEFT SIDE DISCHARGE OUTLETS</u></p> <p data-bbox="94 1743 1354 1810">There shall be Two (2) discharge outlets with a 2.50" valve on the left side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.</p> <p data-bbox="94 1837 634 1869"><u>RIGHT SIDE DISCHARGE OUTLETS</u></p> <p data-bbox="94 1875 1354 1942">There shall be One (1) discharge outlet with a 2.50" valve on the right side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.</p>		

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<p>There shall be a 4.00" discharge outlet with a 3.00" valve with a 3.00" ball, installed on the right side of the apparatus, terminating with a 4.00" (M) National Standard hose thread adapter. This discharge outlet shall be actuated with a handwheel control with position indicator at the pump operator's control panel.</p> <p><u>REAR DISCHARGE OUTLET</u></p> <p>There shall be One (1) discharge outlet piped to the rear of the hose bed, 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.</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> <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 swing style handle control extended to the outside of the side pump panel. The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. Bleeders shall be located at the bottom of the pump panel. They shall be properly labeled identifying the discharge they are plumbed in to. The water discharged by the bleeders shall be routed below the chassis frame rails.</p> <p><u>LEFT SIDE OUTLET ELBOWS</u></p> <p>The 2.50" discharge outlets located on the left side pump panel shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45 degree elbow.</p> <p>The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>RIGHT SIDE OUTLET ELBOWS</u></p> <p>The 2.50" discharge outlets located on the right side pump panel shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45 degree elbow.</p> <p>The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>ADDITIONAL RIGHT SIDE OUTLET ELBOWS</u></p> <p>The 4.00" outlet shall be furnished with a 4.00" (F) National Standard hose thread x 5.00" Storz elbow adapter with Storz cap.</p>		

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<p><u>REAR OUTLET ELBOWS</u> 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.</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 OUTLET CONTROLS</u> The discharge outlets shall incorporate a quarter-turn ball valve with the control located at the pump operator's panel. The valve operating mechanism shall indicate the position of the valve.</p> <p>If a handwheel control valve is used, the control shall be a minimum of a 3.9" diameter stainless steel handwheel with a dial position indicator built into the center of the handwheel.</p> <p>Any 3.00 inch or larger discharge valve shall be a slow-operating valve in accordance with NFPA 16.7.5.3.</p> <p><u>DELUGE RISER</u> A 3.00" deluge riser shall be installed above the pump in such a manner that a monitor can be mounted and used effectively. Piping shall be installed securely so no movement develops when the line is charged. The riser shall be gated and controlled at the pump operator's panel. The outlet shall include an Akron valve with a handwheel control.</p> <p>The deluge riser shall have male National Pipe Threads for mounting the monitor.</p> <p><u>CROSSLAY HOSE BEDS</u> Two (2) crosslays with 1.50" outlets shall be provided. Each bed to be capable of carrying 200' of 1.75" double jacketed hose and shall be plumbed with 2.00" i.d. pipe and gated with a 2.00" quarter turn ball valve.</p> <p>Outlets to be equipped with a 1.50" National Standard hose thread 90 degree swivel located in the hose bed so that hose may be removed from either side of apparatus.</p> <p>The crosslay controls shall be at the pump operator's panel.</p> <p>The center crosslay dividers shall be fabricated of 0.25" aluminum and shall provide adjustment from side to side. The divider shall be unpainted with a brushed finish.</p> <p>Vertical scuffplates constructed of stainless steel shall be provided at the front and rear ends of the bed on each side of vehicle.</p> <p>Crosslay bed flooring shall consist of removable perforated brushed aluminum.</p> <p><u>2.50" CROSSLAY HOSE BED</u> One (1) crosslay with 2.50" outlets shall be provided. This bed to be capable of carrying 200' of 2.50" double jacketed hose and shall be plumbed with 2.50" i.d. pipe and gated with a 2.50" quarter turn ball valve.</p> <p>Outlet to be equipped with a 2.50" National Standard hose thread 90 degree swivel located in the hose bed so that hose may be removed from either side of apparatus.</p> <p>The crosslay control shall be at the pump operator's panel.</p>		

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<p>The center crosslay dividers shall be fabricated of 0.25" aluminum and shall provide adjustment from side to side. The divider shall be unpainted with a brushed finish. The remainder of the crosslay bed shall be painted job color.</p>		
<p>Stainless steel vertical scuffplates shall be provided at hose bed ends (each side of vehicle). Bottom of hose bed ends (each side) shall also be equipped with a stainless steel scuffplate.</p>		
<p>Crosslay bed flooring shall consist of removable perforated brushed aluminum.</p>		
<p><u>CROSSLAY/DEADLAY HOSE RESTRAINT</u></p>		
<p>Elastic netting shall be provided across the top and ends of two (2) crosslay/deadlay opening(s) to secure the hose during travel. The netting shall be permanently attached at the top center of the crosslay/deadlay bed and removable on each end.</p>		
<p><u>BOOSTER HOSE REEL</u></p>		
<p>A Hannay electric rewind booster hose reel shall be installed over the pump in a recessed open compartment on the right side of the apparatus.</p>		
<p>The exterior finish of the reel shall be painted #269 gray from the reel manufacturer.</p>		
<p>A polished stainless steel roller and guide assembly shall be mounted on the reel side of the apparatus.</p>		
<p>Discharge control shall be provided at the pump operator's panel. Plumbing to the reel shall consist of 1.50" Aeroquip hose and a 1.50" valve.</p>		
<p>Reel motor shall be protected from overload with a circuit breaker rated to match the motor.</p>		
<p>An electric rewind control switch shall be installed on the reel side pump panel.</p>		
<p>Booster hose, 1.00" diameter and 200 feet, with chrome plated Barway, or equal couplings shall be provided.</p>		
<p>Working pressure of the booster hose shall be a minimum of 800 psi.</p>		
<p>Capacity of the hose reel shall be 200 feet of 1.00" booster hose.</p>		
<p>An Akron, model 1702, 1.00" booster hose nozzle with pistol grip shall be provided.</p>		
<p><u>FOAM PROPORTIONER</u></p>		
<p>A foam proportioning system shall be provided that is an on demand, automatic proportioning, single point, direct injection system suitable for all types of Class A and B foam concentrates, including the high viscosity (6000 cps), alcohol resistant Class B foams. Operation shall be based on direct measurement of water flow and remain consistent within the specified flows and pressures. The system shall automatically proportion foam solution at rates from .1 percent to 3.0 percent regardless of variations in water pressure and flow, up to the maximum rated capacity of the foam concentrate pump.</p>		
<p>The design of the system shall allow operation from draft, hydrant, or relay operation.</p>		
<p><u>SYSTEM CAPACITY</u></p>		
<p>The system shall have the ability to deliver the following minimum foam solution flow rates at accuracies that meet or exceed NFPA requirements at a pump rating of 150 psi.</p>		
<p>100 gpm @ 3 percent</p>		

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300 gpm @ 1 percent		
600 gpm @ 0.5 percent		
Class A foam setting in .1 percent increments from .1 percent to 1 percent. Typical settings of 1 percent, .5 percent and .3 percent (maximum capacity shall be limited to the plumbing and water pump capacity).		
<u>CONTROL SYSTEM</u>		
The system shall be equipped with a digital electronic control display located on the pump operator's panel. Push button controls shall be integrated into the panel to turn the system on/off, control the foam percentage and to set the operation modes.		
The percent of injection shall have a preset. This preset can be changed at the fire department as desired. The percent of injection shall be able to be easily changed at the scene to adjust to changing demands.		
Three (3) .50 tall LEDs shall display the foam percentage in numeric characters. Three (3) indicator LEDs shall also be included, one (1) green, one (1) red and one (1) yellow. The LEDs shall indicate various system operation or error states.		
The indications shall be:		
<ul style="list-style-type: none"> - Solid Green - System On - Solid Red - Valve Position Error - Solid Yellow - Priming System - Flashing Green - Injecting Foam - Flashing Red - Low Tank Level - Flashing Yellow - Refilling Tank 		
The control display shall house a microprocessor, which receives input from the systems water flow meter while also monitoring the position of the foam concentrate pump. The microprocessor shall compare the values of the water flow versus the position/rate of the foam pump, to ensure the proportion rate is accurate. One (1) check valve shall be installed in the plumbing to prevent foam from contaminating the water pump.		
<u>HYDRAULIC DRIVE SYSTEM</u>		
The foam concentrate pump shall be powered by an electric over hydraulic drive system. The hydraulic system and motor shall be integrated into one (1) unit.		
<u>FOAM CONCENTRATE PUMP</u>		
The foam concentrate pump shall be of positive displacement, self-priming; linear actuated design, driven by the hydraulic system. The pump shall be constructed of brass body; chrome plated stainless steel shaft, with a stainless steel piston. In order to increase longevity of the pump, no aluminum shall be present in its construction.		
A relief system shall be provided which is designed to protect the drive system components and prevent over pressuring the foam concentrate pump		
The foam concentrate pump shall have minimum capacity for 3 gpm with all types of foam concentrates with a viscosity at or below 6000 cps including protein, fluoroprotein, AFFF, FFFP, or AR-AFFF. The system shall deliver only the amount of foam concentrate flow required, without recirculating foam back to the storage tank. Recirculating foam		

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<p>concentrate back to the storage tank can cause agitation and premature foaming of the concentrate, which can result in system failure. The foam concentrate pump shall be self-priming and have the ability to draw foam concentrate from external supplies such as drums or pails.</p>		
<p><u>EXTERNAL FOAM CONCENTRATE CONNECTION</u></p>		
<p>An external foam pick-up shall be provided to enable use of a foam agent that is not stored on the vehicle. The external foam pick-up shall be designed to allow continued operation after the on-board foam tank is empty, or the use of foam different than the foam in the foam tank.</p>		
<p><u>PANEL MOUNTED EXTERNAL PICK-UP CONNECTION / VALVE</u></p>		
<p>A bronze three (3)-way valve shall be provided. The unit shall be mounted to the pump panel. The valve unit shall function as the foam system tank to pump valve and external suction valve. The external foam pick-up shall be one (1) .75" male connection GHT (garden hose thread) with a cap.</p>		
<p><u>PICK-UP HOSE</u></p>		
<p>A .75" flexible hose with an end for insertion into foam containers shall be provided. The hose shall be supplied with a .75" female swivel GHT (garden hose thread) swivel connector. The hose shall be shipped loose.</p>		
<p><u>DISCHARGES</u></p>		
<p>The foam system shall be plumbed to the hose reel in right side of dunnage area, left rear outlet, front crosslay, center crosslay and rear crosslay.</p>		
<p><u>SYSTEM ELECTRICAL LOAD</u></p>		
<p>The maximum current draw of the electric motor and system shall be no more than 55 amperes at 12 VDC.</p>		
<p><u>SINGLE FOAM TANK REFILL</u></p>		
<p>The foam system's proportioning pump shall be used to fill the foam tank. This shall allow use of the auxiliary foam pick-up to pump the foam from pails or a drum on the ground into the foam tank. A foam shut-off switch shall be installed in the fill dome of the tank to shut the system down when the tank is full. The fill operation shall be controlled by a mode in the foam system controller. While the proportioner pump is filling the tank, the controller shall display a flashing yellow LED to indicate that the tank is filling. When the tank is full, as determined by the float switch in the tank dome, the pump shall stop and the controller shall shut the yellow LED off. If it attempted to use tank fill and the refill valve and suction valve are in the wrong position(s), then a red LED shall illuminate to indicate the improper valve position(s). When the valves are positioned properly, then filling shall commence.</p>		
<p><u>FOAM TANK</u></p>		
<p>The foam tank shall be an integral portion of the polypropylene water tank. The cell shall have a capacity of 20 gallons of foam with the intended use of Class A foam. The foam cell shall not reduce the capacity of the water tank. The foam cell shall have a screen in the fill dome and a breather in the lid.</p>		
<p><u>FOAM TANK DRAIN</u></p>		
<p>The foam tank drain shall be a 1.00" quarter turn drain valve located inside the pump/plumbing compartment.</p>		

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<p data-bbox="94 157 657 199">Kenworth T370 2-door Chassis Pumper</p> <p data-bbox="94 220 446 252"><u>PUMP COMPARTMENT</u></p> <p data-bbox="94 256 1356 367">The pump compartment shall be separate from the hose body and compartments so that each may flex independently of the other. It shall be a fabricated assembly of steel tubing, angles and channels which supports both the fire pump and the side running boards.</p> <p data-bbox="94 388 1356 457">The pump compartment shall be mounted on the chassis frame rails with rubber biscuits in a four point pattern to allow for chassis frame twist.</p> <p data-bbox="94 478 1356 556">Pump compartment, pump, plumbing and gauge panels shall be removable from the chassis in a single assembly.</p> <p data-bbox="94 577 365 609"><u>PUMP MOUNTING</u></p> <p data-bbox="94 613 1356 724">Pump shall be mounted to a substructure which shall be mounted to the chassis frame rail using rubber isolators. The mounting shall allow chassis frame rails to flex independently without damage to the fire pump.</p> <p data-bbox="94 745 665 777"><u>LEFT SIDE PUMP CONTROL PANELS</u></p> <p data-bbox="94 781 1356 850">All pump controls and gauges shall be located at the left side of the apparatus and properly identified.</p> <p data-bbox="94 871 1356 945">Layout of the pump control panel shall be ergonomically efficient and systematically organized.</p> <p data-bbox="94 966 1356 1039">The pump operator's control panel shall be removable in two (2) main sections for ease of maintenance:</p> <p data-bbox="94 1060 1356 1207">The upper section shall contain sub panels for the mounting of the pump pressure control device, engine monitoring gauges, electrical switches and foam controls (if applicable). Sub panels shall be removable from the face of the pump panel for ease of maintenance. Below the sub panels shall be located all valve controls and line pressure gauges.</p> <p data-bbox="94 1228 1104 1260">The lower section of the panel shall contain all inlets, outlets and drains.</p> <p data-bbox="94 1281 1356 1470">All push/pull valve controls shall have 1/4 turn locking control rods with polished chrome plated zinc tee handles. Guides for the push/pull control rods shall be chrome plated zinc castings securely mounted to the pump panel. Push/pull valve controls shall be capable of locking in any position. The control rods shall pull straight out of the panel and shall be equipped with universal joints to eliminate binding.</p> <p data-bbox="94 1491 446 1522"><u>IDENTIFICATION TAGS</u></p> <p data-bbox="94 1526 1356 1564">The identification tag for each valve control shall be recessed in the face of the tee handle.</p> <p data-bbox="94 1585 1356 1690">All discharge outlets shall have color coded identification tags, with each discharge having its own unique color. Color coding shall include the labeling of the outlet and the drain for each corresponding discharge.</p> <p data-bbox="94 1711 1356 1900">All line pressure gauges shall be mounted directly above the corresponding discharge control tee handles and recessed within the same chrome plated casting as the rod guide for quick identification. The gauge and rod guide casting shall be removable from the face of the pump panel for ease of maintenance. The casting shall be color coded to correspond with the discharge identification tag.</p> <p data-bbox="94 1921 1356 1995">All remaining identification tags shall be mounted on the pump panel in chrome plated bezels.</p>		

BRYSON CITY FIRE DEPARTMENT	Bidder Complies	
	Yes	No
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<p>The pump panel on the right side shall be removable with lift and turn type fasteners.</p>		
<p>Trim rings shall be installed around all inlets and outlets.</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 and gauge panels shall be constructed of aluminum with a black vinyl finish. A polished aluminum trim molding shall be provided around each panel.</p>		
<p>The right side pump panel shall be removable and fastened with swell type fasteners.</p>		
<p><u>PUMP HOUSE MODIFICATION, NOTCH</u></p>		
<p>Due to the combination of the chassis cab and engine combination, the exhaust emissions equipment extends rearward of the back of the cab.</p>		
<p>In order to maintain a reasonable gap between the back of the cab and the pump module, there shall be a notch in the right side lower front area of the module.</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 pump compartment.</p>		
<p>There shall be a switch accessible through a door on the pump panel included with this installation.</p>		
<p>Engine monitoring graduated LED indicators shall be incorporated with the pressure controller.</p>		
<p>Also provided at the pump panel shall be the following:</p>		
<ul style="list-style-type: none"> - Master Pump Drain Control 		
<p><u>OK TO PUMP INDICATOR LIGHT</u></p>		
<p>There shall be a green indicator light installed on the pump operator's panel that is activated when the pump is in Ok To Pump mode.</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>		

BRYSON CITY FIRE DEPARTMENT	Bidder Complies	
	Yes	No
Kenworth T370 2-door Chassis Pumper		
<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>There shall be an electronic water level gauge provided on the operator's panel that registers water level by means of five (5) colored LED lights. The lights shall be durable, ultra-bright five (5) LED design viewable through 180 degrees. The water level indicators shall be as follows:</p>		
<ul style="list-style-type: none"> - 100 percent = Green - 75 percent = Yellow - 50 percent = Yellow - 25 percent = Yellow - Refill = Red 		
<p>The light shall flash when the level drops below the given level indicator to provide an eighth of a tank indication. To further alert the pump operator, the lights shall flash sequentially when the water tank is empty.</p>		
<p>The level measurement shall be based on the sensing of head pressure of the fluid in the tank.</p>		
<p>The display shall be constructed of a solid plastic material with a chrome plated die cast bezel to reduce vibrations that can cause broken wires and loose electronic components. The encapsulated design shall provide complete protection from water and environmental elements. An industrial pressure transducer shall be mounted to the outside of the tank. The field calibratable display measures head pressure to accurately show the tank level.</p>		
<p><u>FOAM LEVEL GAUGE</u></p>		
<p>An electronic foam level gauge shall be provided on the operator's panel that registers foam level by means of five (5) colored LED lights. The lights shall be durable, ultra-bright five (5) LED design viewable through 180 degrees. The foam level indicators shall be as follows:</p>		
<ul style="list-style-type: none"> - 100 percent = Green - 75 percent = Yellow 		

BRYSON CITY FIRE DEPARTMENT	Bidder Complies	
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Kenworth T370 2-door Chassis Pumper		
<ul style="list-style-type: none"> - 50 percent = Yellow - 25 percent = Yellow - Refill = Red <p>The light shall flash when the level drops below the given level indicator to provide an eighth of a tank indication. To further alert the pump operator, the lights shall flash sequentially when the foam tank is empty.</p> <p>The level measurement shall be based on the sensing of head pressure of the fluid in the tank.</p> <p>The display shall be constructed of a solid plastic material with a chrome plated die cast bezel to reduce vibrations that can cause broken wires and loose electronic components. The encapsulated design shall provide complete protection from foam and environmental elements. An industrial pressure transducer shall be mounted to the outside of the tank. The display shall be able to be calibrated in the field and shall measure head pressure to accurately show the tank level.</p> <p><u>LIGHT SHIELD</u></p> <p>There shall be a polished, 16 gauge stainless steel light shield installed over the pump operator's panel.</p> <ul style="list-style-type: none"> - There shall be 12 volt DC white LED lights installed under the stainless steel light shield to illuminate the controls, switches, essential instructions, gauges and instruments necessary for the operation of the apparatus. These lights shall be activated by the pump panel light switch. Additional lights shall be included every 18.00" depending on the size of the pump house. - One (1) pump panel light shall come on when the pump is in ok to pump mode. <p>There shall be a light activated above the pump panel light switch when the parking brake is set. This is to afford the operator some illumination when first approaching the control panel.</p> <p><u>AIR HORN SYSTEM</u></p> <p>Two (2) Grover air horns shall be provided and located one (1) each side of the engine. The horn system shall be piped to the air brake system wet tank utilizing 0.38" tubing. A pressure protection valve shall be installed in-line to prevent the loss of air, in the air brake system.</p> <p><u>AIR HORN(S) LOCATION</u></p> <p>The air horn(s) location shall be on the side of the engine hood.</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 Code 3®, Model 3692, electronic siren with noise canceling microphone shall be provided.</p>		

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	Yes	No
<p>Kenworth T370 2-door Chassis Pumper</p> <p>This siren to be active when the battery switch is on and the emergency master switch is on.</p> <p>Siren head shall be located in the dash.</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) Code 3®, Model C3100 speaker provided. The speaker shall be connected to the siren amplifier.</p> <p>The speaker shall be recessed in the OEM non-extended front bumper on the passenger's side.</p> <p><u>MECHANICAL SIREN</u></p> <p>A Federal Q2B siren shall be furnished.</p> <p>The mechanical siren shall be mounted through the bumper on the left side of the non-extended bumper wing. It is understood that the siren will not face completely forward, but will instead be parallel with the bumper surface on which it is mounted.</p> <p>The mechanical siren shall be actuated by two (2) foot switches, one (1) located on the officer's side and one (1) on the driver's side.</p> <p>A momentary red switch shall be included in the cab on the switch panel to activate the siren brake.</p> <p><u>CAB ROOF LIGHTBAR</u></p> <p>There shall be one (1) 56.00" Whelen, Model Justice LED lightbar provided.</p> <p>This lightbar shall include the following:</p> <ul style="list-style-type: none"> - Six (6) red flashing forward facing LED modules. - Two (2) clear flashing forward facing LED modules. - Two (2) red flashing front corner LED modules. - Two (2) red flashing rear corner LED modules. <p>All lenses shall be clear.</p> <p>There shall be a switch located in the cab on the switch panel to control the lightbar.</p> <p>The white warning lights shall be disabled when the parking brake is set.</p> <p><u>WARNING LIGHTS</u></p> <p>A pair of surface mounted Whelen model RSR02ZCR, LIN3 Super LED flashing lights shall be provided on the grille.</p> <p>The color of these lights shall be red.</p> <p>A switch shall be provided inside the cab on the switch panel for actuation.</p> <p>These lights shall be installed with a plastic, chrome-plated flange.</p>		

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<p><u>SIDE ZONE LOWER LIGHTING</u></p> <p>There shall be four (4) Whelen®, flashing LED warning lights with chrome trim installed per the following:</p> <ul style="list-style-type: none"> - Two (2) Model M4*C, 3.38" high x 5.50" wide lights located one (1) each side on the engine hood under 62.00". The side front lights to be red. - Two (2) Model M6*C, 4.31" high x 6.75" wide lights located one (1) each side above rear wheels. The side rear lights to be red. - The lights shall include a clear lens. <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>REAR/SIDE ZONE UPPER WARNING LIGHTS</u></p> <p>There shall be two (2) Whelen®, Model L31H*FN, LED warning beacons provided at the rear of the truck, located one (1) each side. There shall be a switch located in the cab on the switch panel to control the beacons.</p> <p>The color of the lights shall be red LEDs with both domes clear.</p> <p>The left side rear warning light shall be mounted on top of the compartmentation with all wiring totally enclosed. The clearance/marker light shall be mounted to the side of the compartment ridge.</p> <p>The right side rear warning light shall be mounted on a low mount stainless steel bracket with all wiring totally enclosed. This brackets shall also support the clearance/marker light.</p> <p>The rear deck lights shall be mounted on the beavertail flange to keep the overall height as low as possible.</p> <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. 		

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**Bidder
Complies**

Yes No

- 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, *Standard for High Visibility Public Safety Vests* 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" (102 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, *Standard on Fire Service Life Safety Rope and System Components* (if equipped with an aerial device).
- 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

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<p>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>		
<p><u>SOFT SUCTION HOSE</u> There shall be no soft suction hose provided.</p>		
<p><u>STRAINER PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, section 5.8.2.1.1 requires a suction strainer when suction hose is provided. The strainer is not on the apparatus as manufactured. The fire department shall provide the suction strainer.</p>		
<p><u>DRY CHEMICAL EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, section 5.9.4 requires one (1) approved dry chemical portable fire extinguisher with a minimum 80-B:C rating mounted in a bracket fastened to the apparatus. The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.</p>		
<p><u>WATER EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, section 5.9.4 requires one (1) 2.5 gallon or larger water extinguisher mounted in a bracket fastened to the apparatus. The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.</p>		
<p><u>FLATHEAD AXE PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) flathead axe mounted in a bracket fastened to the apparatus. The axe is not on the apparatus as manufactured. The fire department shall provide and mount the axe.</p>		
<p><u>PICKHEAD AXE PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) pick head axe mounted in a bracket fastened to the apparatus. The axe is not on the apparatus as manufactured. The fire department shall provide and mount the axe.</p>		
<p><u>PAINT PROCESS</u> The exterior custom cab and/or body painting procedure shall consist of a seven (7) step finishing process. A commercial chassis paint process shall follow similar processes as determined by the chassis manufacturer. The following procedure shall be used by the apparatus manufacturer:</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 		

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Bidder
Complies

Yes No

chrome plating, polished stainless steel, anodized aluminum and bright aluminum treadplate.

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

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

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

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	Yes	No
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<p>All removable items such as brackets, compartment doors, door hinges and trim shall be removed and separately if required, to ensure paint behind all mounted items. Body assemblies that cannot be finish painted after assembly shall be finish painted before assembly.</p> <p><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 shall be disposed of in an environmentally safe manner. - Empty metal paint containers shall be recycled to recover the metal. - Solvents used in clean-up operations shall be recycled on-site or sent off-site for distillation and returned for reuse. <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 the state EPA rules and regulations.</p> <p><u>PAINT</u></p> <p>The chassis shall be painted by the chassis manufacturer and shall remain the commercial grade finish as provided. To ensure a good color match between the body and chassis, the apparatus manufacturer and chassis manufacturer shall have a mutually preapproved paint color program. The apparatus shall be painted candy apple red.</p> <p><u>COMMERCIAL CHASSIS PAINT</u></p> <p>The chassis shall be painted by the chassis manufacturer. It shall remain the color and commercial quality finish as provided. The primary color shall be candy apple red.</p> <p><u>PAINT CHASSIS FRAME ASSEMBLY</u></p> <p>The chassis frame assembly shall be painted black by the chassis manufacturer. It shall remain the commercial grade finish as provided.</p> <p><u>COMPARTMENT INTERIOR PAINT</u></p> <p>The interior of all compartments shall be painted with a gray spatter type paint.</p>		

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	Yes	No
<p><u>REFLECTIVE STRIPES</u> 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><u>REFLECTIVE VINYL ON FRONT BUMPER</u> There shall be a reflective vinyl band provided across the front bumper.</p> <p><u>REAR CHEVRON STRIPING</u> There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus. The rear surface, excluding the rear compartment door, shall be covered. The colors shall be red and fluorescent yellow green diamond grade. Each stripe shall be 6.00" in width. 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>REFLECTIVE STRIPE, CAB DOORS</u> A white reflective stripe shall be provided on the interior of each cab door. This stripe shall be a minimum of 96.00 square inches and shall meet the NFPA 1901 requirement.</p> <p><u>LETTERING</u> The lettering shall be totally encapsulated between two (2) layers of clear vinyl.</p> <p><u>LETTERING</u> Forty-one (41) to sixty (60) genuine gold leaf lettering, 3.00" high, with outline and shade shall be provided.</p> <p><u>MANUAL, BODY PARTS ONLY</u> A custom parts manuals for the factory installed parts only shall be provided in USB flash drive format with the completed unit. The manual shall contain the following:</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>The manual shall be specifically written for the body model being purchased. It shall not be a generic manual for a multitude of different bodies.</p> <p><u>SERVICE PARTS INTERNET SITE</u> The service parts information included in this manual are also available on the factory website. The website offers additional functions and features not contained in this manual,</p>		

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such as digital photographs and line drawings of select items. The website also features electronic search tools to assist in locating parts quickly.		
<p><u>MANUALS, SERVICE</u></p>		
A USB flash drive format service manual supplement containing parts and service information on factory installed components shall be provided with the completed unit.		
The manual shall be specifically written for the unit being purchased. It shall not be a generic manual for a multitude of different units.		
<p><u>MANUAL, CHASSIS OPERATION</u></p>		
One (1) chassis operation (manufacturers standard) shall be provided with the completed unit.		
<p><u>ONE (1) YEAR MATERIAL AND WORKMANSHIP</u></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.		
A copy of the warranty certificate shall be submitted with the bid package (no exception).		
<p><u>CHASSIS WARRANTY</u></p>		
The basic chassis warranty shall be for a total of one (1) years or 50,000 miles .		
<p><u>PAINT WARRANTY</u></p>		
The commercial chassis manufacturer's paint warranty shall apply to the paint on the chassis only.		
<p><u>COMPARTMENT LIGHT WARRANTY</u></p>		
A ten (10) year material and workmanship limited warranty shall be provided for the Pierce 12 volt DC LED strip lights. The warranty shall cover the LED strip lights to be free from defects in material and workmanship that would arise under normal use.		
A copy of the warranty certificate shall be submitted with the bid package (no exception).		
<p><u>TRANSMISSION WARRANTY</u></p>		
The transmission shall have a five (5) year/unlimited mileage warranty covering 100 percent parts and labor. The warranty to be provided by Allison Transmission and not apparatus builder.		
<p><u>WATER TANK WARRANTY</u></p>		
The UPF poly water tank shall be provided with a lifetime material and workmanship limited warranty.		
A copy of the warranty certificate shall be submitted with the bid package (no exception).		
<p><u>TEN (10) YEAR STRUCTURAL INTEGRITY</u></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.		
A copy of the warranty certificate shall be submitted with the bid package (no exception).		

BRYSON CITY FIRE DEPARTMENT	Bidder Complies	
	Yes	No
<p data-bbox="94 159 656 191">Kenworth T370 2-door Chassis Pumper</p> <p data-bbox="94 218 1040 249"><u>ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY</u></p> <p data-bbox="94 254 1354 396">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 data-bbox="94 422 1127 453">A copy of the warranty certificate shall be submitted with the bid package.</p> <p data-bbox="94 478 383 510"><u>PUMP WARRANTY</u></p> <p data-bbox="94 514 1354 585">The Hale five (5) year limited warranty on parts and two (2) year limited warranty on labor shall be provided for the pump.</p> <p data-bbox="94 611 1341 642">A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p data-bbox="94 667 797 699"><u>TEN (10) YEAR PUMP PLUMBING WARRANTY</u></p> <p data-bbox="94 703 1354 919">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 data-bbox="94 945 1341 976">A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p data-bbox="94 1001 524 1033"><u>FOAM SYSTEM WARRANTY</u></p> <p data-bbox="94 1037 1354 1144">A one (1) year material and workmanship limited warranty shall be provided on the Husky 3 foam system. A five (5) year material and workmanship limited warranty shall be provided on the foam system control head.</p> <p data-bbox="94 1169 1341 1201">A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p data-bbox="94 1226 907 1257"><u>TEN (10) YEAR PRO-RATED PAINT AND CORROSION</u></p> <p data-bbox="94 1262 1354 1442">Each new piece of apparatus shall be provided with a ten (10) year pro-rated paint and corrosion limited warranty on the apparatus body. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.</p> <p data-bbox="94 1467 1341 1499">A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p data-bbox="94 1524 855 1556"><u>THREE (3) YEAR MATERIAL AND WORKMANSHIP</u></p> <p data-bbox="94 1560 1354 1667">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 data-bbox="94 1692 1341 1724">A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p data-bbox="94 1749 662 1780"><u>VEHICLE STABILITY CERTIFICATION</u></p> <p data-bbox="94 1785 1354 1892">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>		

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Bidder
Complies

Yes No

CAB INTEGRITY

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

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

AMP DRAW REPORT

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

The manufacturer of the apparatus shall provide the following:

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

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