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	Bidder Complies	
	Yes	No
<p>The bidder shall state the location of the factory where the apparatus is to be built.</p> <p><b><u>NFPA 2016 STANDARDS</u></b></p> <p>This 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><b><u>ULC COMPLIANCY</u></b></p> <p>Apparatus proposed by the bidder shall meet the applicable requirements of the CAN/ULC-S515 standard as stated in the current edition at the time of contract execution. Fire department's specifications that differ from ULC specifications shall be indicated in the proposal as "non-ULC" compliant. The apparatus shall be in service at an elevation of [Fill in Blank].</p> <p><b><u>VEHICLE INSPECTION PROGRAM CERTIFICATION</u></b></p> <p>To assure the vehicle is built to current CAN/ULC-S515 standards, the apparatus, in its entirety, shall be third-party, independent, audit-certified through Underwriters Laboratory (UL) that it is built and complies to all applicable standards in the current edition of CAN/ULC-S515. The certification includes: all design, production, operational, and performance testing of not only the apparatus, but those components that are installed on the apparatus (no exception).</p>		

	Bidder Complies	
	Yes	No
<p>A placard shall be affixed in the driver's side area stating the third party agency, the date, the standard and the certificate number of the whole vehicle audit.</p> <p><b><u>PUMP TEST</u></b>  The pump shall be tested, approved and certified by Underwriter's Laboratory. The test results and the pump manufacturer's certification of hydrostatic test; the engine manufacturer's certified brake horsepower curve; and the manufacturer's record of pump construction details shall be forwarded to the Fire Department.</p> <p><b><u>GENERATOR TEST</u></b>  If the unit has a generator, the generator shall be tested, approved, and certified by Underwriters Laboratories. The test results shall be provided to the Fire Department at the time of delivery.</p> <p><b><u>BREATHING AIR TEST</u></b>  If the unit has breathing air, the apparatus manufacturer shall draw an air sample from the air system and certify that the air quality meets the requirements of CSA Z180.1-13, <i>Compressed Breathing Air and Systems</i>.</p> <p><b><u>AFTERMARKET SUPPORT WEBSITE</u></b>  A Customer Service website shall provide authorized dealers access to comprehensive information pertaining to the maintenance and service of their customer's apparatus. This tool shall provide the authorized dealer the ability to service and support their customers to the best of their ability with factory support at their fingertips.</p> <p>This website shall also be accessible to the end user through the guest login. Limited access is available and vehicle specific parts information accessible by entering a specific VIN number. All end users should see their local authorized dealer for additional support and service.</p> <p>The website shall provide the following to the designated individuals:</p> <ul style="list-style-type: none"> <li>- Authorized dealer only - ability to access truck detail information on the major components of the vehicle, warranty information, available vehicle photographs, vehicle drawings, sales options, applicable vehicle software downloads, etc.</li> <li>- Authorized dealer and customer - parts look-up capability, with the aid of digital photographs, part drawings, and assembly drawings.</li> <li>- Authorized dealer only - ability to electronically submit warranty claims directly to the factory for reimbursement.</li> <li>- Authorized dealer only - accessibility to multiple dealer reports that allow the dealership to maintain communication with the customer on the status of orders, claims, and phone contacts.</li> </ul>		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <li>- Authorized dealer and customer - access to all currently published Operation and Maintenance and Service publications.</li> <li>- Authorized dealer only - access to manufacturer Service Bulletins and Work Instructions containing information on current service topics and recommendations provided.</li> <li>- Authorized dealer and customer - access to upcoming training classes offered by the manufacturer.</li> <li>- Authorized dealer only - access to interactive electronic learning modules (Operators Guides) covering the operation of major vehicle components.</li> <li>- Authorized dealer only - access to customer service articles, corporate news, quarterly newsletters, and key contacts.</li> </ul> <p><b><u>UNITS OF MEASURE</u></b></p> <p>This apparatus shall be built for a destination in Canada and required ULC certifications shall be in the proper metric format such as liters, liters per minute, kpa, etc.</p> <p>The following specification contains standard US units of measure for volume, pressure, length/width/height, weight, etc. and are not converted to metric equivalents. However, specific individual options such as pressure gauges and speedometers may be described in metric terminology.</p> <p><b><u>BID BOND NOT REQUESTED</u></b></p> <p>A bid bond shall not be included. If requested, the following shall apply:</p> <p>All bidders shall provide a bid bond as security for the bid in the form of a 5% bid bond to accompany their bid. This bid bond shall be issued by a Surety Company who is listed on the U.S. Treasury Departments list of acceptable sureties as published in Department Circular 570. The bid bond shall be issued by an authorized representative of the Surety Company and shall be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond shall include language, which assures that the bidder/principal shall give a bond or bonds as may be specified in the bidding or contract documents, with good and sufficient surety for the faithful performance of the contract, including the Basic One (1) Year Limited Warranty, and for the prompt payment of labor and material furnished in the prosecution of the contract.</p> <p>Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle shall apply only to the Basic One (1) Year Limited Warranty for such vehicle. Any surety bond related to the sale of a vehicle shall not apply to any other warranties that are included within this bid (OEM or otherwise) or to the warranties (if any) of any third party of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.</p>		

	Bidder Complies	
	Yes	No
<p>In the event of any contradiction or inconsistency between this provision and any other document or assertion, this provision shall prevail.</p> <p><b><u>PERFORMANCE BOND NOT REQUESTED</u></b></p> <p>A performance bond shall not be included. If requested at a later date, one shall be provided to you for an additional cost and the following shall apply:</p> <p>The successful bidder shall furnish a Performance and Payment bond (Bond) equal to 100 percent of the total contract amount within 30 days of the notice of award. Such Bond shall be in a form acceptable to the Owner and issued by a surety company included within the Department of Treasury's Listing of Approved Sureties (Department Circular 570) with a minimum A.M. Best Financial Strength Rating of A and Size Category of XV. In the event of a bond issued by a surety of a lesser Size Category, a minimum Financial Strength rating of A+ is required.</p> <p>Bidder and Bidder's surety agree that the Bond issued hereunder, whether expressly stated or not, also includes the surety's guarantee of the vehicle manufacturer's Bumper to Bumper warranty period included within this proposal. Owner agrees that the penal amount of this bond shall be simultaneously amended to 25 percent of the total contract amount upon satisfactory acceptance and delivery of the vehicle(s) included herein. Notwithstanding anything contained within this contract to the contrary, the surety's liability for any warranties of any type shall not exceed three (3) years from the date of such satisfactory acceptance and delivery, or the actual Bumper to Bumper warranty period, whichever is shorter.</p> <p><b><u>REFERENCE DRAWING</u></b></p> <p>A drawing of the proposed apparatus shall be provided for review. This drawing shall indicate the major components such as the chassis make and model, body configuration and door style, location of the lights, siren, horns, compartments, major components, etc.</p> <p>This drawing shall not need to be signed and returned to the apparatus manufacturer.</p> <p><b><u>ELECTRICAL WIRING DIAGRAMS</u></b></p> <p>Two (2) electrical wiring diagrams, prepared for the body as it interfaces with the commercial chassis, shall be provided.</p> <p><b><u>CHASSIS</u></b></p> <p>The chassis shall be a commercially available chassis supplied with the following equipment:</p> <p><b><u>WHEELBASE</u></b></p> <p>The wheelbase of the vehicle shall be no greater than 229".</p> <p><b><u>GVW RATING</u></b></p> <p>The gross vehicle weight rating shall be a minimum of 38,000#.</p>		

	Bidder Complies	
	Yes	No
<p><b><u>FRAME</u></b> The frame rails shall be formed from 120,000 psi yield, heat treated alloy steel.</p> <p><b><u>FRAME LINER</u></b> An 0.25" inner frame reinforcement shall be provided.</p> <p>The frame section properties shall be:</p> <ul style="list-style-type: none"> <li>- Section Modulus: 26.50 cubic inch, per rail</li> <li>- RBM: 3,200,000 in-lb, per rail</li> <li>- Yield Strength: 120,000 psi, per rail</li> </ul> <p><b><u>FRONT AXLE</u></b> Front axle shall be an I beam type, made of forged steel. It shall have a ground rating capacity of 12,000 lb.</p> <p><b><u>FRONT SUSPENSION</u></b> Spring mounted: Taper-leaf</p> <p>Capacity at Ground: 12,000 lb</p> <p>Shock Absorbers: Double Acting</p> <p>Shock absorbers shall be provided on the front axle.</p> <p><b><u>TIRES, FRONT</u></b> 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> <p><b><u>WHEELS, FRONT</u></b> Wheels for the front axle shall be 22.50" x 8.25" aluminum disc, ten (10)-hole pattern.</p> <p><b><u>REAR AXLE</u></b> The single reduction rear axle shall have a ground rating capacity of 26,000 lb.</p> <p>The brake chambers shall be forward mounted and the brakes shall be 16.50" x 7.00", S-Cam type.</p> <p><b><u>PARKING BRAKE</u></b> The parking brake shall be spring set and located on the rear axle service brake.</p> <p><b><u>REAR AXLE RATIO</u></b> A rear axle ratio shall be furnished to allow the vehicle to reach a top speed of 68 MPH.</p>		

	Bidder Complies	
	Yes	No
<p><b><u>REAR SUSPENSION</u></b> The rear suspension shall be spring mounted 11 leaf, 60.00" x 3.00" with a capacity at ground level of 26,000 lbs. Auxiliaries shall be included and the deflection shall be a variable rate</p> <p><b><u>TIRES, REAR</u></b> 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><b><u>WHEELS, REAR</u></b> The rear wheels shall be 22.50" x 8.25" disc with a ten (10)-hole pattern. The outer wheel shall be polished aluminum and the inner wheel shall be steel.</p> <p><b><u>TIRE PRESSURE MANAGEMENT</u></b> There shall be a LED tire alert pressure management system provided that shall monitor each tire's pressure. A chrome plated brass sensor shall be provided on the valve stem of each tire for a total of six (6) tires.  The sensor shall calibrate to the tire pressure when installed on the valve stem for pressures between 20 and 120 psi. The sensor shall activate an integral battery operated LED when the pressure of that tire drops 8 psi.  Removing the cap from the sensor shall indicate the functionality of the sensor and battery. If the sensor and battery are in working condition, the LED shall immediately start blinking.</p> <p><b><u>CHROME LUG NUT COVERS</u></b> Chrome lug nut covers shall be supplied on front and rear wheels.</p> <p><b><u>WHEEL CHOCKS PROVIDED BY FIRE DEPARTMENT</u></b> NFPA 1901, 2016 edition, section 5.9.4 requires two (2) or more wheel chocks mounted in readily accessible locations that together shall hold the apparatus, when loaded to its GVWR or GCWR, on a hard surface with a 20 percent grade with the transmission in neutral and the parking brake released.  The wheel chocks are not on the apparatus as manufactured. The fire department shall provide and install these wheel chocks.</p> <p><b><u>WHEEL CHOCK BRACKETS, PROVIDED BY FIRE DEPARTMENT</u></b> The wheel chock brackets are not on the apparatus as manufactured. The fire department shall provide and install the wheel chock brackets.</p> <p><b><u>ANTI-LOCK BRAKE SYSTEM</u></b> The vehicle shall be equipped with a four (4) channel anti-lock braking system. The ABS shall provide anti-lock braking control on both the front and rear wheels. It shall be a digitally</p>		

	Bidder Complies	
	Yes	No
<p>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><b><u>FRONT BRAKES</u></b></p> <p>The front brakes shall be S-Cam, 16.50" x 5.00". The front brakes shall be provided with automatic slack adjusters.</p> <p><b><u>AIR COMPRESSOR, BRAKE SYSTEM</u></b></p> <p>The air compressor shall have an output of 18.7 cubic feet per minute.</p> <p><b><u>AIR DRYER</u></b></p> <p>An air dryer with a heater shall be provided. Other features of this air dryer include:</p> <ul style="list-style-type: none"> <li>- Desiccant style filter</li> <li>- In-line filtration system</li> <li>- Automatic purge valve</li> </ul> <p><b><u>AIR INLET</u></b></p> <p>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 near the pump operator's position. 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><b><u>ENGINE</u></b></p> <ul style="list-style-type: none"> <li>• Number of Cylinders: Six (6)</li> <li>• Displacement: 6.7 liters</li> <li>• Rated Brake Horsepower: 360 at 2600 rpm</li> <li>• Peak Torque: 800 at 1800 rpm</li> <li>• Governed rpm: 2600</li> <li>• Charge Air Cooled</li> </ul> <p><b><u>ENGINE ACCESSORIES</u></b></p> <ul style="list-style-type: none"> <li>• Air Cleaner: Dry type, with restriction indicator in cab</li> <li>• Fuel Filters</li> <li>• Governor: Limiting speed type</li> </ul>		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <li>• Lube Oil Cooler</li> <li>• Lube Oil Filter: Full flow</li> <li>• Starting Motor: 12-volt</li> </ul> <p><b><u>ENGINE WARRANTY</u></b> The engine shall come with a warranty provided by the engine manufacturer.</p> <p><b><u>RADIATOR</u></b></p> <ul style="list-style-type: none"> <li>• Pressurized System, Tube and Fin</li> <li>• Deaeration Tank and Sight Glass</li> <li>• Anti-Freeze Protection -34 Degrees Fahrenheit</li> </ul> <p><b><u>HIGH IDLE</u></b> 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><b><u>ENGINE EXHAUST BRAKE</u></b> An exhaust brake with an integral variable geometry turbo charger (VGT) shall be provided. The control shall be located on the instrument panel within easy reach of the driver.</p> <p><b><u>FUEL/WATER SEPARATOR</u></b> A fuel/water separator shall be provided on the chassis.</p> <p><b><u>AIR INTAKE, W/EMBER SEPARATOR</u></b> The air inlet shall be equipped with a means of separating 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><b><u>EXHAUST SYSTEM</u></b> The exhaust system shall include a diesel particulate filter (DPF) and a selective catalytic reduction (SCR) device to meet current EPA standards. The DPF and SCR shall be mounted horizontally outside of the frame rails in the passenger side front step area.</p> <p><b><u>EXHAUST MODIFICATIONS</u></b> The exhaust shall terminate the side of the body with a horizontal tailpipe and diffuser ahead of the passenger side rear wheels.</p>		



	Bidder Complies	
	Yes	No
<p>A heat deflector shield shall be provided where the tail pipe is routed under any side compartmentation.</p> <p><b><u>COOLANT LINES</u></b>  High quality rubber hose shall be used for all engine coolant lines to be installed by the chassis manufacturer.</p> <p>Hose clamps shall be of a design commonly called constant torque type to prevent coolant leakage. They shall react to temperature changes in the cooling system and expand or contract accordingly while maintaining a constant clamping pressure on the hose.</p> <p><b><u>FUEL TANK</u></b>  A 50 gallon fuel tank shall be provided and mounted at the left-hand cab step. The rectangular tank shall be constructed of aluminum.</p> <p><b><u>DIESEL EXHAUST FLUID TANK</u></b>  A 6.00 gallon diesel exhaust fluid (DEF) tank shall be provided and mounted on the driver's side, below the cab.</p> <p>The tank shall include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.</p> <p><b><u>FUEL PRIMER PUMP</u></b>  A fuel primer pump shall be included with the fuel water separator.</p> <p><b><u>AUXILIARY FUEL COOLING SYSTEM</u></b>  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><b><u>TRANSMISSION</u></b>  An electronic torque converting automatic transmission shall be provided.</p> <p>Two (2) PTO openings shall be located on left side and top of converter housing (positions 8 o'clock and 4 o'clock).</p> <p>A transmission temperature gauge or warning light shall be installed on cab instrument panel.</p> <p><b><u>TRANSMISSION SHIFT CONTROL</u></b>  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>		

	Bidder Complies	
	Yes	No
<p><b><u>TRANSMISSION COOLER</u></b> A transmission oil cooler shall be provided in the lower tank of the radiator.</p> <p><b><u>DRIVELINE</u></b> Drivelines shall be a heavy duty metal tube, properly sized for the application and be equipped with universal joints. A splined slip joint shall be provided in each driveshaft.</p> <p><b><u>STEERING</u></b> The steering system shall be hydraulically driven. The steering column shall have an adjustable tilt and telescope feature.</p> <p><b><u>BUMPER</u></b> A 14.00", three (3) piece, full width chrome plated steel bumper with collapsible boxed ends shall be attached to the front of the chassis frame.</p> <p><b><u>TOW HOOKS</u></b> Two (2) painted, forged steel tow hooks shall be provided.</p> <p><b><u>BUMPER GAP</u></b> The standard bumper furnished with the chassis shall be used.</p> <p><b><u>CAB</u></b> A 4-door, high-roof cab shall be provided. The cab and doors shall be of an aluminum construction.</p> <p><b>Exterior Styling</b></p> <p>Aerodynamic hood and windshield</p> <p>Tinted Glass in all Windows</p> <p>Fiberglass hood with mounted plastic grille</p> <p>Single 63"x14" rear window</p> <p><b>Interior</b></p> <p>Air bag rear cab suspension</p> <p>Gray vinyl mats</p> <p>Forward roof mounted console</p> <p>Two (2) dash-mounted cup holders, right-hand and left-hand</p> <p>Gray Vinyl Upholstery</p>		

	Bidder Complies	
	Yes	No
Dual Sun visors		
Fresh Air Heater and Defroster		
- Gray Vinyl Upholstery		
<b><u>CAB GRILLE, INTERIOR CONVENIENCE AND EXTERIOR APPEARANCE PACKAGE</u></b>		
The cab exterior shall have a high impact plastic chromed grille and matching headlight bezels. The grille shall tilt with the hood.		
Additionally, the headlight bezels and the engine air intake housing shall have a chrome finish.		
The cab interior shall include black dash panels, molded door panels with vinyl inserts and brushed aluminum door kick plates.		
<b><u>MIRRORS</u></b>		
West Coast style heated, remote operated mirrors constructed from a molded composite material with a bright finish shall be provided. A heated 8.00" convex mirror shall be included below the primary mirrors.		
<b><u>CAB ACCESS STEPS</u></b>		
The cab steps shall be provided by the apparatus manufacturer in compliance with ULC requirements.		
<b><u>STEP LIGHTS</u></b>		
There shall white LED step lights provided to meet NFPA step lighting requirements. Lights shall be installed at each cab and crew cab door step.		
The lights shall be activated when the adjacent door is opened.		
<b><u>DAYTIME RUNNING LIGHTS</u></b>		
The chassis shall be provided with daytime running lights.		
<b><u>AIR CONDITIONING</u></b>		
An air conditioner shall be provided that is integral with heater and defroster system.		
<b><u>ENGINE COMPARTMENT LIGHTS</u></b>		
Two (2) engine compartment lights shall be installed under the engine hood, of which the switches are an integral part.		
<b><u>SEATING CAPACITY</u></b>		
The seating capacity in the cab shall be five (5).		

	Bidder Complies	
	Yes	No
<p><b><u>SEATING CAPACITY</u></b> The seating capacity in the cab shall be five (5).</p> <p><b><u>SEATING</u></b> Seating inside the cab shall consist of an air-ride driver seat and a non-suspension SCBA officer seat.</p> <p><b><u>SEATING (CREW CAB)</u></b> Three (3) individual SCBA style seats shall be provided inside the crew cab. Each seat shall be mounted to an individual storage box with drop down hinged door and latch.</p> <p><b><u>AIR BOTTLE HOLDERS</u></b> A SCBA holder shall be mounted in the back rest of the SCBA seat. This bracket shall include a backplate, two (2) seats, a footplate and a strap to hold the bottle in the bracket. The bracket seats shall be a one (1) size fits all style seat and shall accommodate SCBA cylinders from the high pressure 30 minute to the high pressure 60 minute. Seats shall be adjustable up and down by unbolting, relocating, and rebolting in the desired position. There shall be a quantity of four (4).</p> <p><b><u>SEAT BELT WEB LENGTH</u></b> NFPA 1901, 2016 edition, Section 14.1.3.1 and 14.1.3.2 requires effective seat belt web length for a Type 1 lap belt for pelvic restraint to be a minimum of 60.00", and a Type 2 pelvic and upper torso restraint-style seat belt assembly to be a minimum of 110.00".  Per Fire Department specification of a commercial chassis, this apparatus may not have seat belts of the required length. These belts may not provide sufficient length for large firefighters in bunker gear. This apparatus shall be non-compliant to NFPA 1901 standards effective at time of contract execution.</p> <p><b><u>SEAT BELTS</u></b> All seating positions in the cab and crew cab shall have highly visible (orange) seat belts.</p> <p><b><u>HELMET STORAGE PROVIDED BY FIRE DEPARTMENT</u></b> NFPA 1901, 2016 edition, section 14.1.7.4.1 requires a location for helmet storage be provided.  There is no helmet storage on the apparatus as manufactured. The fire department shall provide a location for storage of helmets.</p> <p><b><u>PORTABLE HAND LIGHTS, PROVIDED BY FIRE DEPARTMENT</u></b> NFPA 1901, 2016 edition, section 5.9.4 requires two portable hand lights mounted in brackets fastened to the apparatus.</p>		

	Bidder Complies	
	Yes	No
<p>The hand lights are not on the apparatus as manufactured. The fire department shall provide and mount these hand lights.</p> <p><b><u>CAB INSTRUMENTS</u></b></p> <ul style="list-style-type: none"> <li>- Engine Temperature Gauge and Warning Buzzer</li> <li>- Engine Oil Pressure Gauge and Warning Buzzer</li> <li>- Speedometer with Odometer</li> <li>- Engine Tachometer</li> <li>- Engine Hourmeter</li> <li>- Fuel Level Gauge</li> <li>- DEF Level Gauge and Warning Lamp with 2010+ engines</li> <li>- Voltmeter: Low voltage red warning light and audible alarm</li> <li>- Air Brake Pressure Gauge</li> <li>- Air Restriction Indicator</li> <li>- Circuit Breakers: For overload protection of electric circuits</li> <li>- Ignition Switch: Keyless type</li> </ul> <p><b><u>EMERGENCY SWITCH PANEL</u></b></p> <p>An emergency switch panel shall be provided in the cab. The switch panel shall be located within reach of the driver. All NFPA required emergency lights shall be controlled from the master emergency switch. References within this specification to a "switch in the cab" for zone specific options shall mean the emergency master switch.</p> <p><b><u>"DO NOT MOVE APPARATUS" INDICATOR</u></b></p> <p>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 not activate any alarm when the parking brake is released.</p> <p><b><u>DO NOT MOVE TRUCK MESSAGES</u></b></p> <p>A message shall be displayed on the VMUX display in view of the driver whenever any of the following conditions exist:</p>		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <li>• CAB DOOR OPEN (Any Cab Door Open with ignition on)</li> <li>• LH COMPARTMENT OPEN (Any Left Hand Compartment Door Open)</li> <li>• RH COMPARTMENT OPEN (Any Right Hand Compartment Door Open)</li> <li>• REAR DOOR OPEN (Any Rear Compartment Door Open)</li> <li>• TANK RACK DOWN (Tank Rack Not Stowed)</li> <li>• LH LIGHT POLE RAISED (Left Hand Pole Light Raised)</li> <li>• RH LIGHT POLE RAISED (Right Hand Pole Light Raised)</li> </ul> <p>A warning message shall also be displayed for any other device that is opened, extended or deployed that creates a hazard or is likely to cause major damage to the apparatus if the apparatus is moved.</p> <p><b><u>WIPER CONTROL</u></b> Wiper control shall include an intermittent feature and windshield washer controls.</p> <p><b><u>POWER RECEPTACLES</u></b> There shall be two (2) power receptacles located in the dash provided by the chassis manufacturer.</p> <p>The circuit(s) may be load managed when the parking brake is set.</p> <p><b><u>VEHICLE DATA RECORDER</u></b> There shall be a vehicle data recorder (VDR) capable of reading and storing vehicle information provided.</p> <p>The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A USB cable can be used to connect the VDR to a laptop to retrieve required information. The program to download the information from the VDR will be available to download on-line.</p> <p>The vehicle data recorder shall be capable of recording the following data via hardwired and/or CAN inputs:</p> <ul style="list-style-type: none"> <li>• Vehicle Speed - MPH</li> <li>• Acceleration - MPH/sec</li> <li>• Deceleration - MPH/sec</li> <li>• Engine Speed - RPM</li> <li>• Engine Throttle Position - % of Full Throttle</li> <li>• ABS Event - On/Off</li> <li>• Seat Occupied Status - Yes/No by Position</li> <li>• Seat Belt Buckled Status - Yes/No by Position</li> </ul>		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <li>• Master Optical Warning Device Switch - On/Off</li> <li>• Time - 24 Hour Time</li> <li>• Date - Year/Month/Day</li> </ul> <p><b><u>Seat Belt Monitoring System</u></b></p> <p>A seat belt monitoring system (SBMS) shall be provided. The SBMS shall be capable of monitoring up to six (6) seating positions indicating the status of each seat position per the following:</p> <ul style="list-style-type: none"> <li>• Seat Occupied &amp; Buckled = Green LED indicator illuminated</li> <li>• Seat Occupied &amp; Unbuckled = Red LED indicator with audible alarm</li> <li>• No Occupant &amp; Buckled = Red LED indicator with audible alarm</li> <li>• No Occupant &amp; Unbuckled = No indicator and no alarm</li> </ul> <p>The SBMS shall include an audible alarm that shall warn that an unbuckled occupant condition exists and the parking brake is released, or the transmission is not in park.</p> <p><b><u>TWO-WAY RADIO ACCOMMODATION PACKAGE</u></b></p> <p>One set of 12 volt wire leads shall be provided for the future installation of a two-way radio. These leads shall consist of one (1) 30-amp battery direct circuit, one (1) 10-amp battery switched circuit and one (1) ground circuit. These leads shall be 6' long and terminate behind the cab dash with heat shrink caps.</p> <p>One (1) NMO mobile radio antenna mount with RG-58A/U stranded coaxial cable shall be provided. The antenna mount shall be installed through the cab roof, and the coaxial cable shall be routed behind the cab dash. All wiring shall be neatly coiled and clearly marked.</p> <p>A weatherproof cap for the antenna mount shall also be installed.</p> <p><b><u>ELECTRICAL</u></b></p> <p>All 12-volt electrical equipment installed by the apparatus manufacturer shall conform to modern automotive practices. All wiring shall be high temperature crosslink type. Wiring shall be run in loom or conduit where exposed and have grommets where wire passes through sheet metal. Automatic reset circuit breakers shall be provided which conform to SAE Standards. Wiring shall be color, function and number coded. Function and number codes shall be continuously imprinted on all wiring harness conductors at 2.00" intervals. Exterior exposed wire connectors shall be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids. Electrical wiring and equipment shall be installed utilizing the following guidelines:</p>		

	Bidder Complies	
	Yes	No
<p>(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.</p> <p>(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.</p> <p>(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.</p> <p>(4) Corrosion preventative compound shall be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections shall require this compound in the plug to prevent corrosion and for easy separation (of the plug).</p> <p>(5) All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.</p> <p>(6) All electrical terminals in exposed areas shall have silicon (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.</p> <p>All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard #108, shall be furnished. Rear identification lights shall be recessed mounted for protection. Lights and wiring mounted in the rear bulkheads shall be protected from damage by installing a false bulkhead inside the rear compartments.</p> <p>An operational test shall be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.</p> <p>The results of the tests shall be recorded and provided to the purchaser at time of delivery.</p> <p><b><u>BATTERY SYSTEM</u></b></p> <p>A single starting battery system shall be provided consisting of two (2) 12 volt, 1125 CCA, maintenance-free, group 31 batteries. The battery system shall have a total of 2250 CCA.</p>		



	Bidder Complies	
	Yes	No
<p><b><u>Jump Start Connections</u></b> Positive and negative posts for jump starting shall be provided by the chassis manufacturer. They shall be frame mounted and located under the hood.</p> <p><b><u>MASTER BATTERY SWITCH</u></b> A master battery switch, to activate the battery system, shall be provided inside the cab within easy reach of the driver.</p> <p>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><b><u>BATTERY CHARGING RECEPTACLE</u></b> The battery charging receptacle location shall be on the left side pump panel.</p> <p><b><u>ALTERNATOR</u></b> The alternator shall be a 275 amp, quadramount, with remote battery voltage sensor.</p> <p><b><u>ELECTRONIC LOAD MANAGEMENT</u></b> Included with the apparatus manufacturer's electrical system shall be a programmable load management system.</p> <p>This system shall monitor the vehicle's 12-volt electrical system, and automatically reduce the electrical load in the event of a low voltage condition and by doing so, ensures the integrity of the electrical system.</p> <p><b><u>EXTERIOR LIGHTING</u></b> 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><b><u>INTERMEDIATE LIGHT</u></b> There shall be two (2) amber LED lights furnished, one (1) each side, horizontally in the rear fender panel. The light shall double as a turn signal and marker light.</p> <p>A stainless steel trim shall be included with this installation.</p> <p><b><u>REAR CLEARANCE/MARKER/ID LIGHTING</u></b> There shall be three (3) LED identification lights located at the rear installed per the following:</p>		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <li>• As close as practical to the vertical centerline</li> <li>• Centers spaced not less than 6.00" or more than 12.00" apart</li> <li>• Red in color</li> <li>• All at the same height</li> </ul> <p>There shall be two (2) 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"> <li>• To indicate the overall width of the vehicle</li> <li>• One (1) each side of the vertical centerline</li> <li>• As near the top as practical</li> <li>• Red in color</li> <li>• To be visible from the rear</li> <li>• All at the same height</li> </ul> <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"> <li>• To indicate the overall length of the vehicle</li> <li>• One (1) each side of the vertical centerline</li> <li>• As near the top as practical</li> <li>• Red in color</li> <li>• To be visible from the side</li> <li>• All at the same height</li> </ul> <p>The lights shall be mounted with no guard.</p> <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><b><u>REAR FMVSS LIGHTING</u></b></p> <p>There shall be two (2) wrap around tri-cluster LED modules provided on the face of the rear body compartments.</p> <p>Each tri-cluster shall include the following:</p>		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <li>• One (1) LED stop/tail light</li> <li>• One (1) LED directional light</li> <li>• One (1) LED backup light</li> </ul> <p><b><u>LICENSE PLATE BRACKET</u></b>  There shall be one (1) license plate bracket mounted on the rear of the body.</p> <p>A white LED light shall illuminate the license plate. A polished stainless steel light shield shall be provided over the light that shall direct illumination downward, preventing white light to the rear.</p> <p><b><u>BACK-UP ALARM</u></b>  A solid-state electronic audible back-up alarm that actuates when the truck is shifted into reverse shall be provided. The device shall sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum ten (10) dBA above surrounding environmental noise levels.</p> <p><b><u>CAB PERIMETER SCENE LIGHTS</u></b>  There shall be four (4) white LED lights with grommets provided, one (1) for each cab and crew 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><b><u>PUMP HOUSE PERIMETER LIGHTS</u></b>  There shall be two (2) 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><b><u>BODY PERIMETER SCENE LIGHTS</u></b>  There shall be two (2) 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> <p><b><u>STEP LIGHTS</u></b>  White LED, step lights shall be provided to meet the NFPA step lighting requirement. Lights shall be provided on each side, on the front compartment face and at the rear to illuminate the tailboard.</p> <p>These step lights shall be actuated with the parking brake.</p> <p>All other steps on the apparatus shall be illuminated per the current edition of NFPA 1901.</p>		

	Bidder Complies	
	Yes	No
<p><b><u>SCENE LIGHTS</u></b></p> <p>There shall be one (1) pair of LED scene lights provided. These lights shall direct light downward via internal optics. There shall be one (1) light each side on the rear of the apparatus. These lights shall be installed no higher than 72.00" above the ground.</p> <p>A control for the lights selected above shall be the following:</p> <ul style="list-style-type: none"> <li>• a switch at the driver's side switch panel</li> <li>• a switch at the driver's side switch panel</li> </ul> <p><b><u>WALKING SURFACE LIGHT</u></b></p> <p>There shall be 4" round black 12 volt DC LED floodlight with bolt mount provided to illuminate the entire designated walking surface on top of the body.</p> <p>The light shall be activated when the body step lights are on.</p> <p><b><u>WATER TANK</u></b></p> <p>Booster tank shall have a capacity of 1000 gallons and be constructed of polypropylene plastic.</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>Tank top shall be sufficiently supported to keep it rigid during fast filling conditions.</p> <p>A sump shall be provided at the bottom of the water tank, and 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>		

	Bidder Complies	
	Yes	No
<p>Fill tower shall be constructed of .50" polypropylene and shall be a minimum of 8.00" wide x 14.00" long.</p> <p>Fill tower shall be furnished with a .25" thick polypropylene screen and a hinged cover.</p> <p>An overflow pipe, constructed of 4.00" schedule 40 polypropylene, shall be installed approximately halfway down the fill tower and extend through the water tank and exit to the rear of the rear axle.</p> <p><b><u>HOSE BED</u></b></p> <p>The hose bed shall be fabricated of .125"-5052 aluminum with a nominal 38,000 psi tensile strength.</p> <p>Hose bed width shall be a minimum of 92.00" inside.</p> <p>Upper and rear edges of side panels shall have a double break for rigidity, a split tube finish shall not be acceptable.</p> <p>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><b><u>HOSEBED ILLUMINATION</u></b></p> <p>The hose bed shall be illuminated with LED lighting. The lights shall have control from a switch at the rear of the truck.</p> <p>Hose bed shall accommodate 1500 feet of 2.50" and 400 feet of 1.50" hose.</p> <p><b><u>HOSE BED DIVIDER</u></b></p> <p>One (1) adjustable hosebed divider 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><b><u>HOSE BED HOSE RESTRAINT</u></b></p> <p>The hose in the hose bed shall be restrained by a black nylon hook and loop 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 2.00" cam buckle fasteners. The webbing</p>		

	Bidder Complies	
	Yes	No
<p>shall have straps connected with 2.00" cam buckle fasteners located at the rear body sheet below the hose bed.</p> <p><b><u>RUNNING BOARDS</u></b>  Running boards shall be fabricated of .125" bright aluminum treadplate.</p> <p>Each running board shall be supported by a welded 2.00" square tubing and channel assembly, which shall be bolted to the pump compartment substructure.</p> <p>Running boards shall be 12.75" deep and spaced .50" away from the pump panel.</p> <p>A splash guard shall be provided above the running board treadplate.</p> <p><b><u>TAILBOARD</u></b>  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 12.00" deep and full width of the body.</p> <p>The exterior side shall be flanged down and in for increased rigidity of tailboard structure.</p> <p><b><u>REAR WALL, SMOOTH ALUMINUM/BODY MATERIAL</u></b>  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> <p><b><u>TOW BAR</u></b>  A tow bar shall be installed under the tailboard at center of truck.</p> <p>Tow bar shall be fabricated of 1.00" CRS bar rolled into a 3.00" radius.</p> <p>Tow bar assembly shall be constructed of .38" structural angle. When force is applied to the bar, it shall be transmitted to the frame rail.</p> <p>Tow bar assembly shall be designed and positioned to allow up to a 30-degree upward angled pull of 17,000 lb, or a 20,000 lb straight horizontal pull in line with the centerline of the vehicle.</p> <p>Tow bar design shall have been fully tested and evaluated using strain gauge testing and finite element analysis techniques.</p> <p><b><u>COMPARTMENTATION</u></b>  Body and compartments shall be fabricated of .125", 5052-H32 aluminum.</p> <p>Side compartments shall be an integral assembly with the rear fenders.</p>		

	Bidder Complies	
	Yes	No
<p>Circular fender liners shall be provided for prevention of rust pockets and ease of maintenance.</p> <p>Compartment flooring shall be of the sweep out design with the floor higher than the compartment door lip.</p> <p>Drip protection shall be provided above the doors.</p> <p>All screws and bolts which protrude into a compartment shall have acorn nuts on the ends to prevent injury.</p> <p><b><u>UNDERBODY SUPPORT SYSTEM</u></b></p> <p>Due to the severe loading requirements of this pumper a method of body and compartment support suitable for the intended load shall be provided.</p> <p>The backbone of the 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><b><u>AGGRESSIVE WALKING SURFACE</u></b></p> <p>All exterior surfaces designated as stepping, standing, and walking areas shall comply with the required average slip resistance of the current NFPA standards.</p> <p><b><u>TESTING OF BODY DESIGN</u></b></p> <p>Body structural analysis shall be fully tested. Proven engineering and test techniques such as finite element analysis, 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"> <li>- Raising opposite corners of the vehicle tires 9.00" to simulate the twisting a truck may experience when driving over a curb.</li> <li>- Making a 90 degree turn, while driving at 20 mph to simulate aggressive driving conditions.</li> <li>- Driving the vehicle at 35 mph on a washboard road.</li> <li>- Driving the vehicle at 55 mph on a smooth road.</li> <li>- Accelerating the vehicle fully, until reaching the approximate speed of 45 mph on rough pavement.</li> </ul> <p>Evidence of actual testing techniques shall be made available upon request.</p>		

Bidder Complies	
Yes	No

**COMPARTMENTATION, DRIVER'S SIDE**

A full height, roll-up door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 29.50" wide x 60.00" high x 26.00" deep in the lower 30.50" of the compartment and 13.00" deep in the remaining upper portion. The height of the compartment shall be measured from the compartment floor to the bottom edge of the door roll. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 26.625" wide x 63.75" high.

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

A roll-up door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 59.00" wide x 34.25" high x 13.00" deep. The height of the compartment shall be measured from the compartment floor to the bottom edge of the door roll. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 59.00" wide x 35.25" high.

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

A full height, roll-up door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 48.625" wide x 60.00" high x 26.00" deep in the lower 30.50" of height and 13.00" deep in the remaining upper section of the compartment. The height of the compartment shall be measured from the compartment floor to the bottom edge of the door roll. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 48.50" wide x 63.75" high.

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

**COMPARTMENTATION, PASSENGER'S SIDE**

A full height, roll-up door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 29.50" wide x 60.00" high x 26.00" deep in the lower 30.50" of the compartment and 13.00" deep in the remaining upper portion. The height of the compartment shall be measured from the compartment floor to the bottom edge of the door roll. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor



	Bidder Complies	
	Yes	No
<p>and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 26.625" wide x 63.75" high.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p>A roll-up door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 59.00" wide x 34.25" high x 13.00" deep. The height of the compartment shall be measured from the compartment floor to the bottom edge of the door roll. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 59.00" wide x 35.25" high.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p>A full height, roll-up door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 48.625" wide x 60.00" high x 26.00" deep in the lower 30.50" of height and 13.00" deep in the remaining upper section of the compartment. The height of the compartment shall be measured from the compartment floor to the bottom edge of the door roll. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 48.50" wide x 63.75" high.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p><b><u>ROLLUP DOOR, SIDE COMPARTMENTS</u></b></p> <p>There shall be six (6) compartment doors installed on the side compartments. The doors shall be double faced aluminum construction, an anodized satin finish.</p> <p>Lath sections shall be an interlocking rib design and shall be individually replaceable without complete disassembly of door.</p> <p>Between each slat at the pivoting joint shall be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals shall allow door to operate in extreme temperatures ranging from plus 180 to minus 40 degrees Fahrenheit. Side, top and bottom seals shall be provided to resist ingress of dirt and weather.</p> <p>All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from plus 300 to minus 40 degrees Fahrenheit. Hardened plastic shall not be acceptable.</p>		

	Bidder Complies	
	Yes	No
<p>A polished stainless steel lift bar to be provided for each roll-up door. Lift bar shall be located at the bottom of door and have latches on the outer extrusion of the doors frame. A ledge shall be supplied over lift bar for additional area to aid in closing the door.</p> <p>Doors shall be constructed from an aluminum box section. The exterior surface of each slat shall be flat. The interior surfaces shall be concave to provide strength and prevent loose equipment from jamming the door from inside.</p> <p>To conserve space in the compartments, the spring roller assembly shall not exceed 3.00" in diameter. A garage style roll door shall not be acceptable.</p> <p>The header for the rollup door assembly shall not exceed 4.00".</p> <p>A heavy-duty magnetic switch shall be used for control of open compartment door warning lights.</p> <p><b><u>COMPARTMENTATION, REAR</u></b></p> <p>A roll-up door compartment above the rear tailboard shall be provided.</p> <p>Interior dimensions of this compartment shall be 42.00" wide x 56.63" high x 27.88" deep in the lower 47.75" of height and 19.75" deep in the remaining upper portion. Depth of the compartment shall be calculated with the compartment door closed.</p> <p>For a chassis with a rear mounted fuel tank, a louvered removable access panel shall be furnished on the back wall of the compartment.</p> <p>Rear compartment shall be open into the rear side compartments.</p> <p>Clear door opening of this compartment shall be approximately 34.38" wide x 48.25" high.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p><b><u>ROLLUP DOOR, REAR COMPARTMENT</u></b></p> <p>There shall be a rear rollup door. The door shall be double faced aluminum construction, an anodized satin finish and manufactured by A&amp;A Manufacturing (Gortite).</p> <p>Lath sections shall be an interlocking rib design and shall be individually replaceable without complete disassembly of door.</p> <p>Between each slat at the pivoting joint shall be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals shall allow door to operate in extreme temperatures ranging from plus 180 to minus 40 degrees Fahrenheit. Side,</p>		

	Bidder Complies	
	Yes	No
<p>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 plus 300 to minus 40 degrees Fahrenheit. Hardened plastic shall not be acceptable.</p> <p>A polished stainless steel lift bar to be provided for each roll-up door. Lift bar shall be located at the bottom of door and have latches on the outer extrusion of the doors frame. A ledge shall be supplied over lift bar for additional area to aid in closing the door.</p> <p>Door shall be constructed from an aluminum box section. The exterior surface of each slat shall be flat. The interior surface shall be concave to provide strength and prevent loose equipment from jamming the door from inside.</p> <p>To conserve space in the compartments, the spring roller assembly shall not exceed 3.00" in diameter. A garage style roll door shall not be acceptable.</p> <p>The header for the 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><b><u>COMPARTMENT LIGHTING</u></b></p> <p>There shall be seven (7) compartments with LED compartment light strip. Each light strip shall be centered vertically along the door framing. All body compartments with roll-up doors shall have these strip lights.</p> <p>Any remaining compartment without a light strip shall have a 6.00" diameter Truck-Lite, Model: 79384 light. Each light shall have a number 1076 one filament, two wire bulb.</p> <p>Opening the compartment door shall automatically turn the compartment lighting on.</p> <p><b><u>RUB RAIL</u></b></p> <p>Bottom edge of the side compartments shall be trimmed with a bright aluminum extruded rub rail.</p> <p>Trim shall be 2.12" high with 1.38" flanges turned outward for rigidity.</p> <p>The rub rails shall not be an integral part of the body construction, which allows replacement in the event of damage.</p> <p><b><u>BODY FENDER CROWNS</u></b></p> <p>Stainless steel fender crowns shall be provided around the rear wheel openings.</p>		

	Bidder Complies	
	Yes	No
<p>A rubber welting shall be provided between the body and the crown to seal the seam and restrict moisture from entering.</p> <p>A dielectric barrier shall be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.</p> <p><b><u>HARD SUCTION HOSE</u></b> Hard suction hose shall not be required.</p> <p><b><u>HANDRAILS</u></b> The handrails shall be 1.25" diameter anodized aluminum extrusion, with a ribbed design, to provide a positive gripping surface.</p> <p>Chrome plated end stanchions shall support the handrail. Plastic gaskets shall be used between end stanchions and any painted surfaces.</p> <p>Drain holes shall be provided in the bottom of all vertically mounted handrails.</p> <p>Handrails shall be provided to meet NFPA 1901 section 15.8 requirements. The handrails shall be installed as noted on the sales drawing.</p> <ul style="list-style-type: none"> <li>• One (1) vertical handrail, with offset stanchions, and not less than 29.00" long, shall be located on each rear bulkhead.</li> <li>• Additionally, a handrail to aid in accessing the hose bed shall be installed on the driver side rear vertical and top horizontal rearward edge of the hosebed side sheet.</li> </ul> <p><b><u>AIR BOTTLE STORAGE</u></b> A total of four (4) air bottle compartments shall be provided, two (2) each side of the body. The air bottle compartment shall be in the form of a PVC round tube to accommodate different size air bottles. The inside diameter of the tube shall be approximately 7.63" in diameter x 26.00" deep. Drain holes shall be provided at the bottom of the tubes to prevent water collection.</p> <p>A cast aluminum door with latch shall be provided to contain the air bottle.</p> <p><b><u>EXTENSION LADDER</u></b> There shall be a 24' two-section aluminum extension ladder provided.</p> <p><b><u>ROOF LADDER</u></b> There shall be a 14' aluminum roof ladder provided.</p> <p><b><u>LADDER STORAGE</u></b> The ladders shall be stored inside the upper section of the passenger's side compartments.</p>		

	Bidder Complies	
	Yes	No
<p>The ladder rack shall reduce the depth of the upper section, in the side compartments, by approximately 12.00".</p> <p>A partition shall be installed inside the compartments to conceal the ladder rack and allow for equipment storage. The ladders shall extend through the forward wall of the compartmentation, into the pump area. The ladders shall be stored in separate storage troughs lined with Dura-Surf slides to aid in loading and unloading of the ladders. Rear of ladder storage area shall be a vertically hinged door with D-ring latch to contain the ladders.</p> <p><b><u>FOLDING LADDER</u></b></p> <p>One (1) 10.00' aluminum, folding ladder shall be installed in a U-shaped trough inside the ladder storage compartment.</p> <p><b><u>PIKE POLE PROVIDED BY FIRE DEPARTMENT</u></b></p> <p>NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) 8 ft or longer pike pole mounted in a bracket fastened to the apparatus.</p> <p>The pike pole is not on the apparatus as manufactured. The fire department shall provide and mount the pike pole.</p> <p>The pike pole(s) shall be a Akron 10' pike pole.</p> <p><b><u>6' PIKE POLE PROVIDED BY FIRE DEPARTMENT</u></b></p> <p>NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) 6' pike pole or plaster hook mounted in a bracket fastened to the apparatus.</p> <p>The pike pole is not on the apparatus as manufactured. The fire department shall provide and mount the pike pole.</p> <p>The pike pole(s) shall be a [Pike Pole Make/Model].</p> <p><b><u>LADDER, HOSE BED ACCESS</u></b></p> <p>A hose bed access ladder, constructed of aluminum rungs and extruded aluminum rails, shall be provided on the left side rear of the apparatus.</p> <p><b><u>MIDSHIP FIRE PUMP</u></b></p> <p>Midship fire pump shall be a Hale DSD1250, 1250 gpm, single 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> <p>- 100% of rated capacity at 150 psi net pump pressure.</p>		

	Bidder Complies	
	Yes	No
<p>- 100% of rated capacity at 165 psi net pump pressure.</p> <p>-70% of rated capacity at 200 psi net pump pressure.</p> <p>-50% of rated capacity at 250 psi net pump pressure.</p> <p>Entire pump, both suction and discharge passages, shall be hydrostatically tested to a pressure of 600 psi (40.8 bar).</p> <p>Pump shall be fully tested at the pump manufacturer's factory to the performance requirements as outlined by the latest NFPA pamphlet #1901, and shall be free from objectionable pulsation and vibration.</p> <p>The pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 psi (2041.2 bar). All moving parts in contact with water shall be of high quality bronze or stainless steel. Pumps utilizing castings made of lower tensile strength cast iron not acceptable.</p> <p>Pump body shall be vertically split, on a single plane,.</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 shall be hand-ground and polished to a sharp edge, and be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.</p> <p>Impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body.</p> <p>Pump shaft shall be electric furnace, heat-treated, corrosion resistant stainless steel. Pump shaft must be sealed with double oil seal to keep road dirt and water out of drive unit.</p> <p><b><u>MECHANICAL SEAL ON PUMP</u></b></p> <p>Only one (1) mechanical seal shall be required on the suction (inboard) side of the pump. The mechanical seal shall be two (2.00) inches in diameter and shall be spring loaded, maintenance-free, and self-adjusting.</p> <p>The mechanical seal construction shall be a carbon sealing ring, stainless steel coil spring, Viton® rubber boot, and a tungsten carbide seat with a Teflon backup seal.</p> <p><b><u>PUMP TRANSMISSION</u></b></p> <p>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.</p>		

	Bidder Complies	
	Yes	No
<p>The gearbox drive shafts shall be of heat treated chrome nickel steel and at least 2.75" 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.</p> <p>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.</p> <p>The pump ratio shall be selected by the apparatus manufacturer to provide the maximum performance with the engine and transmission selected.</p> <p>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.</p> <p><b><u>PUMPING MODE</u></b></p> <p>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. Interlock system shall be designed to allow stationary pumping only.</p> <p><b><u>AIR PUMP SHIFT</u></b></p> <p>Pump shift engagement shall be made by a two (2) position sliding collar, actuated pneumatically (by air pressure), with a three (3) position air control switch located in the cab.</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>Another green indicator light shall be installed adjacent to the hand throttle on the pump panel and indicate either the pump is engaged and the road transmission is in pump gear, or the road transmission is in neutral and the pump is not engaged. This light shall be labeled "Warning: Do not open throttle unless light is on".</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><b><u>TRANSMISSION LOCK-UP</u></b></p> <p>The direct gear transmission lock-up for the fire pump operation shall engage automatically when the pump shift control in the cab is activated.</p>		

	Bidder Complies	
	Yes	No
<p><b><u>AUXILIARY COOLING SYSTEM</u></b></p> <p>A supplementary heat exchange cooling system shall be provided to allow the use of water from the discharge side of the pump for cooling the engine water. Heat exchanger shall be cylindrical type and shall be a separate unit. It shall be installed in the pump or engine compartment with the control located on the pump operator's control panel. Exchanger shall be plumbed to the master drain valve.</p> <p><b><u>INTAKE RELIEF VALVE</u></b></p> <p>An intake relief valve shall be installed on the suction side of the pump preset at 125 psig.</p> <p>Relief valve shall have a working range of 50 psig to 350 psig.</p> <p>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><b><u>PRESSURE CONTROLLER</u></b></p> <p>A 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> <p><b><u>PRIMING PUMP</u></b></p> <p>The priming pump shall be a compressed air powered, high efficiency, multistage venturi based priming 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><b><u>PUMP MANUALS</u></b></p> <p>There shall be a total of two (2) pump manuals provided by the pump manufacturer and furnished with the apparatus. The manuals shall be provided by the pump manufacturer in the form of two (2) CDs. Each manual shall cover pump operation, maintenance, and parts.</p> <p><b><u>PLUMBING</u></b></p> <p>All inlet and outlet plumbing, 3.00" and smaller, shall be plumbed with either stainless steel pipe or synthetic rubber hose reinforced with high-tensile polyester braid. Small diameter secondary plumbing such as drain lines shall be stainless steel, brass or hose.</p> <p>Where vibration or chassis flexing may damage or loosen piping or where a coupling is required for servicing, the piping shall be equipped with victaulic or rubber couplings.</p> <p>Plumbing manifold bodies shall be ductile cast iron or stainless steel.</p>		



	Bidder Complies	
	Yes	No
<p>All lines shall drain through a master drain valve or shall be equipped with individual drain valves. All individual drain lines for discharges shall be extended with a hose to drain below the chassis frame.</p> <p>All water carrying gauge lines shall be of flexible polypropylene tubing.</p> <p><b><u>MAIN PUMP INLETS</u></b></p> <p>A 6.00" pump manifold inlet shall be provided on each side of the vehicle. The suction inlets shall include screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.</p> <p><b><u>MAIN PUMP INLET CAP</u></b></p> <p>The main pump inlets shall have National Standard Threads with a long handle chrome cap.</p> <p>The cap shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><b><u>VALVES</u></b></p> <p>All discharges shall use in-line ball valves.</p> <p><b><u>LEFT SIDE INLET</u></b></p> <p>There shall be one (1) auxiliary inlet with a 2.50" valve at the left side pump panel, terminating with a 2.50" (F) National Standard hose thread adapter.</p> <p>The auxiliary inlet shall be provided with a strainer, chrome swivel and plug.</p> <p>The location of the valve for the one (1) inlet shall be recessed behind the pump panel.</p> <p><b><u>INLET CONTROL</u></b></p> <p>The side auxiliary inlet(s) shall incorporate a quarter-turn ball valve with the control located at the inlet valve. The valve operating mechanism shall indicate the position of the valve.</p> <p><b><u>INLET BLEEDER VALVE</u></b></p> <p>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><b><u>TANK TO PUMP</u></b></p> <p>The booster tank shall be connected to the intake side of the pump with 4.00" heavy duty piping and a quarter turn 3.00" full flow line valve with the control remotely located at the operator's</p>		

	Bidder Complies	
	Yes	No
<p>panel. Tank to pump line shall run straight (no elbows) from the pump into the front face of the water tank and angle down into the tank sump. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing.</p> <p>A check valve shall be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank.</p> <p><b><u>TANK REFILL</u></b></p> <p>A 1.50" combination tank refill and pump re-circulation line shall be provided, using a quarter-turn full flow ball valve controlled from the pump operator's panel.</p> <p><b><u>LEFT SIDE DISCHARGE OUTLETS</u></b></p> <p>There shall be two (2) 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><b><u>RIGHT SIDE DISCHARGE OUTLETS</u></b></p> <p>There shall be one (1) discharge outlet with a 2.50" valve on the right side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.</p> <p><b><u>FRONT OF HOSE BED DISCHARGE OUTLET</u></b></p> <p>There shall be one (1) discharge outlet discharge(s) piped to the front of the hose bed and located passenger's side. Plumbing shall consist of 2.50" piping with a 2.50" full-flow ball valve controlled at the pump operator's panel. The discharge(s) shall terminate with a 2.50" (M) National Standard hose thread adapter.</p> <p><b><u>DISCHARGE CAPS</u></b></p> <p>Chrome plated, rocker lug, caps with chains shall be furnished for all side discharge outlets.</p> <p>The cap shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><b><u>OUTLET BLEEDER VALVE</u></b></p> <p>A 0.75" bleeder valve shall be provided for each outlet 1.50" or larger. Automatic drain valves are acceptable with some outlets if deemed appropriate with the application.</p> <p>The valves shall be located behind the panel with a swing style handle control extended to the outside of the side pump panel. The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. Bleeders shall be located at the bottom of the pump panel. They shall be properly labeled identifying the discharge they are plumbed in to. The water discharged by the bleeders shall be routed below the chassis frame rails.</p>		

	Bidder Complies	
	Yes	No
<p><b><u>LEFT SIDE OUTLET ELBOWS</u></b></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><b><u>RIGHT SIDE OUTLET ELBOWS</u></b></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><b><u>ADAPTER</u></b></p> <p>There shall be four (4) adapters provided with CSA installed on 2 LS outlet / 1 RS outlet / 1 front hose bed.</p> <p><b><u>DISCHARGE OUTLET CONTROLS</u></b></p> <p>The discharge outlets shall incorporate a quarter-turn ball valve with the control located at the pump operator's panel. The valve operating mechanism shall indicate the position of the valve.</p> <p>If a handwheel control valve is used, the control shall be a minimum of a 3.9" diameter stainless steel handwheel with a dial position indicator built in to the center of the handwheel.</p> <p><b><u>DELUGE RISER</u></b></p> <p>A 3.00" deluge riser shall be installed above the pump in such a manner that a monitor can be mounted and used effectively.</p> <p>The 3.00" piping shall be installed securely so there is no movement when the line is charged. A 2.50" gated valve shall be installed and directly controlled at the pump operator's position with a lever style handle.</p> <p>This deluge outlet shall flow a minimum 1000 GPM.</p> <p>The deluge riser shall have male National Pipe Threads for mounting the monitor.</p> <p><b><u>SPEEDLAYS WITH TRAY</u></b></p> <p>Ahead of the pump enclosure shall be two (2) 1.75" speedlay hose beds. Each bed shall have a 2.00" preconnect line with a 2.00" quarter-turn ball valve and terminate with a 1.50" National</p>		

	Bidder Complies	
	Yes	No
<p>Standard hose thread 90 degree swivel. The swivel shall be located at the top of the speedlay compartment to allow easy removal of the hose in either direction.</p> <p>Individual controls for the speedlays shall be at the pump operator's panel.</p> <p>Each compartment shall be capable of carrying 200 feet of 1.75" double jacketed hose with the one (1) compartment located above the other.</p> <p>A removable tray shall be provided for each speedlay hosebed. The speedlay trays shall be constructed with two (2) hand holes for easy removal from the compartment. The floor of the trays shall be perforated to allow for drainage and hose drying.</p> <p><b><u>SPEEDLAY HOSE RESTRAINT</u></b></p> <p>A black 1.00" nylon webbing design with 2.00" box pattern shall be provided across each end of two (2) speedlay(s) to secure the hose during travel. The webbing shall be permanently attached at the bottom of the speedlay opening. There shall be quarter turn fasteners located at the opposite end of the permanently attached webbing.</p> <p><b><u>FOAM PROPORTIONER</u></b></p> <p>A foam proportioning system shall be provided that is an on demand, automatic proportioning, single point, direct injection system suitable for all types of Class A and B foam concentrates, including the high viscosity (6000 cps), alcohol resistant Class B foams. Operation shall be based on direct measurement of water flow, and remain consistent within the specified flows and pressures. The system shall automatically proportion foam solution at rates from .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><b><u>SYSTEM CAPACITY</u></b></p> <p>The system shall have the ability to deliver the following minimum foam solution flow rates at accuracies that meet or exceed NFPA requirements at a pump rating of 150 psi.</p> <p>100 gpm @ 3 percent</p> <p>300 gpm @ 1 percent</p> <p>600 gpm @ 0.5 percent</p> <p>Class A foam setting in .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).</p>		

	Bidder Complies	
	Yes	No
<p><b><u>CONTROL SYSTEM</u></b></p> <p>The system shall be equipped with a digital electronic control display located on the pump operators panel. Push button controls shall be integrated into the panel to turn the system on/off, control the foam percentage, and to set the operation modes.</p> <p>The percent of injection shall have a preset. This preset can be changed at the fire department as desired. The percent of injection shall be able to be easily changed at the scene to adjust to changing demands.</p> <p>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.</p> <p>The indications shall be:</p> <p>Solid Green - System On</p> <p>Solid Red - Valve Position Error</p> <p>Solid Yellow - Priming System</p> <p>Flashing Green - Injecting Foam</p> <p>Flashing Red - Low Tank Level</p> <p>Flashing Yellow - Refilling Tank</p> <p>The control display shall house a microprocessor, which receives input from the systems water flow meter while also monitoring the position of the foam concentrate pump. The microprocessor shall compare the values of the water flow versus the position/rate of the foam pump, to ensure the proportion rate is accurate. One (1) check valve shall be installed in the plumbing to prevent foam from contaminating the water pump.</p> <p><b><u>HYDRAULIC DRIVE SYSTEM</u></b></p> <p>The foam concentrate pump shall be powered by an electric over hydraulic drive system. The hydraulic system and motor shall be integrated into one (1) unit.</p> <p><b><u>FOAM CONCENTRATE PUMP</u></b></p> <p>The foam concentrate pump shall be of positive displacement, self-priming; linear actuated design, driven by the hydraulic system. The pump shall be constructed of brass body; chrome plated stainless steel shaft, with a stainless steel piston. In order to increase longevity of the pump, no aluminum shall be present in its construction.</p>		

	Bidder Complies	
	Yes	No
<p>A relief system shall be provided which is designed to protect the drive system components and prevent over pressuring the foam concentrate pump</p> <p>The foam concentrate pump shall have minimum capacity for 3 gpm with all types of foam concentrates with a viscosity at or below 6000 cps including protein, fluoroprotein, AFFF, FFFP, or AR-AFFF. The system shall deliver only the amount of foam concentrate flow required, without recirculating foam back to the storage tank. Recirculating foam concentrate back to the storage tank can cause agitation and premature foaming of the concentrate, which can result in system failure. The foam concentrate pump shall be self-priming and have the ability to draw foam concentrate from external supplies such as drums or pails.</p> <p><b><u>EXTERNAL FOAM CONCENTRATE CONNECTION</u></b></p> <p>An external foam pick-up shall be provided to enable use of a foam agent that is not stored on the vehicle. The external foam pick-up shall be designed to allow continued operation after the on-board foam tank is empty, or the use of foam different than the foam in the foam tank.</p> <p><b><u>PANEL MOUNTED EXTERNAL PICK-UP CONNECTION / VALVE</u></b></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><b><u>PICK-UP HOSE</u></b></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><b><u>DISCHARGES</u></b></p> <p>The foam system shall be plumbed into a manifold. All outlets that are plumbed into that manifold shall be foam capable. This shall include, but shall not be limited to the two (2) speedlays and 2.50" rear outlet.</p> <p>(<b>TECH NOTE:</b> The 2.50" side outlets and the deluge are the only discharge outlets not plumbed into the manifold and therefore, shall not be foam capable.)</p> <p><b><u>SYSTEM ELECTRICAL LOAD</u></b></p> <p>The maximum current draw of the electric motor and system shall be no more than 55 amperes at 12 VDC.</p> <p><b><u>FOAM CAPABLE DISCHARGES</u></b></p> <p>The foam system shall be plumbed into a manifold. All outlets that are plumbed into that manifold shall be foam capable.</p>		

	Bidder Complies	
	Yes	No
<p>Foam capable outlets shall be:</p> <ul style="list-style-type: none"> <li>• Speedlays (2)</li> <li>• Rear 2.50" outlet</li> </ul> <p>(<b>TECH NOTE:</b> The 2.50" side outlets and the deluge are not plumbed into the manifold and therefore, shall not be foam capable.)</p> <p><b><u>REFILL, SINGLE FOAM TANK</u></b></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><b><u>FOAM TANK</u></b></p> <p>The foam tank shall be an integral portion of the polypropylene water tank. The cell shall have a capacity of 30 gallons of foam with the intended use of Class A foam. The brand of foam stored in this tank shall be TBD. The foam cell shall reduce the capacity of the water tank. The foam cell shall have a screen in the fill dome and a breather in the lid.</p> <p><b><u>FOAM TANK DRAIN</u></b></p> <p>A system of 1.00" foam tank drains shall be provided, integrated into the foam systems strainer and tank to foam pump valve management system. The tank to pump hoses running from the tank(s) to the strainer shall 1.00" diameter. The foam system controller shall have a mode that allows for a given foam valve to be opened at will. Flow of foam from the tank valve to the strainer shall be usable as a tank drain mode.</p> <p>An adaptor shall be supplied, that allows the 1.00" foam intake screen to assembly to be used as a drain outlet. The standard supplied 1.00" foam pick up hose shall be attached to the screen assembly by way of the adapter. The drain mode shall allow the operator to open and close the tank valve as required from the control head, to drain foam and re-fill foam containers through the connected hose, without foam spillage beneath the vehicle.</p>		

	Bidder Complies	
	Yes	No
<p><b><u>PUMP COMPARTMENT</u></b></p> <p>The pump compartment shall be separate from the hose body and compartments so that each may flex independently of the other. It shall be a fabricated assembly of steel tubing, angles and channels which supports both the fire pump and the side running boards.</p> <p>The pump compartment shall be mounted on the chassis frame rails with rubber biscuits in a four point pattern to allow for chassis frame twist.</p> <p>Pump compartment, pump, plumbing and gauge panels shall be removable from the chassis in a single assembly.</p> <p><b><u>PUMP CONTROL PANELS (SIDE CONTROL)</u></b></p> <p>All pump controls and gauges shall be located at the left (driver's) side of the apparatus and properly marked.</p> <p>The pump panel on the right (passenger's) side is removable with lift and turn type fasteners. The left (driver's) side is fastened with screws.</p> <p>The control panels shall be 45.00" wide.</p> <p>The gauge and control panels shall be two (2) separate panels for ease of maintenance.</p> <p>Polished stainless steel trim collars shall be installed around all inlets and outlets.</p> <p>All push/pull valve controls shall have 1/4 turn locking control rods with polished chrome plated zinc tee handles. Guides for the push/pull control rods shall be chrome plated zinc castings securely mounted to the pump panel. Push/pull valve controls shall be capable of locking in any position. The control rods shall pull straight out of the panel and shall be equipped with universal joints to eliminate binding.</p> <p>The identification tag for each valve control shall be recessed in the face of the tee handle.</p> <p>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>All line pressure gauges shall be mounted in individual chrome plated castings with the identification tag recessed in the casting below the gauge. All remaining identification tags shall be mounted on the pump panel in chrome plated bezels. Mounting of the castings and identification bezels shall be done with a threaded peg cast on the back side of the bezel or screws.</p> <p><b><u>PUMP PANEL CONFIGURATION</u></b></p> <p>The pump panel configuration shall be neat and orderly.</p>		



	Bidder Complies	
	Yes	No
<p><b><u>PUMP AND GAUGE PANEL</u></b></p> <p>The pump and gauge panels shall be constructed of aluminum with a painted FormCoat black finish. A polished aluminum trim molding shall be provided around each panel.</p> <p>The passenger's side pump panel shall be removable and fastened with swell type fasteners.</p> <p><b><u>PUMP COMPARTMENT LIGHT</u></b></p> <p>A pump compartment light shall be provided inside the right side pump enclosure and accessible through a door on the pump panel.</p> <p>A .125" weep hole shall be provided in each light lens, preventing moisture retention.</p> <p>Engine monitoring graduated LED indicators shall be incorporated with the pressure controller.</p> <p>Also provided at the pump panel shall be the following:</p> <ul style="list-style-type: none"> <li>- Master Pump Drain Control</li> </ul> <p><b><u>VACUUM AND PRESSURE GAUGES</u></b></p> <p>The pump vacuum and pressure gauges shall be liquid filled.</p> <p>The gauges shall be a minimum of 4.00" in diameter and shall have white faces with black markings, with a pressure range of 30.00" 0-600 psi/kpa.</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> <p>This gauge shall include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.</p> <p><b><u>PRESSURE GAUGES</u></b></p> <p>Existing individual "line" pressure gauges for the discharges shall be replaces with interlube filled.</p> <p>Nine (9) discharge gauges shall be installed.</p> <p>They shall be a minimum of 2.00" in diameter and shall have white faces with black lettering.</p>		

	Bidder Complies	
	Yes	No
<p>Gauges shall be compound type with a vacuum/pressure range of 0-400#/kpa.</p> <p>The individual pressure gauge shall be installed as close to the outlet control as practical.</p> <p><b><u>WATER LEVEL GAUGE</u></b></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"> <li>• 100 percent = Green</li> <li>• 75 percent = Yellow</li> <li>• 50 percent = Yellow</li> <li>• 25 percent = Yellow</li> <li>• Refill = Red</li> </ul> <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><b><u>FOAM LEVEL GAUGE</u></b></p> <p>An electronic foam level gauge shall be provided on the operator's panel that registers foam level by means of five colored LED lights. The lights shall be durable, ultra-bright five LED design viewable through 180 degrees. The foam level indicators shall be as follows:</p> <ul style="list-style-type: none"> <li>- 100% = Green</li> <li>- 75% = Yellow</li> <li>- 50% = Yellow</li> <li>- 25% = Yellow</li> <li>- Refill = Red</li> </ul>		

	Bidder Complies	
	Yes	No
<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><b><u>LIGHT SHIELD</u></b></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"> <li>• 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.</li> <li>• One (1) pump panel light shall come on when the pump is in ok to pump mode.</li> </ul> <p>There shall be a light activated above the pump panel light switch when the parking brake is set. This is to afford the operator some illumination when first approaching the control panel.</p> <p>There shall be a green pump engaged indicator light activated on at the operator's panel when the pump is shifted into gear from inside the cab.</p> <p><b><u>ELECTRONIC SIREN</u></b></p> <p>An electronic siren with noise canceling microphone shall be provided.</p> <p>This siren to be active when the battery switch is on and that emergency master switch is on.</p> <p>Siren head shall be located in the cab within reach of the driver.</p> <p>Siren shall be actuated by a foot switch on the officer's side and by the horn button in the steering wheel. The driver shall have the option to control the siren or the chassis horns from the horn button by means of a selector switch.</p>		

	Bidder Complies	
	Yes	No
<p><b><u>SPEAKER</u></b></p> <p>There shall be one (1) speaker provided. Each speaker shall be a black nylon composite, 100-watt, with through bumper mounting brackets. Each speaker shall be connected to the siren amplifier.</p> <p>The speaker shall be recessed in the left side of the front bumper, just outside of the frame rail.</p> <p><b><u>LIGHTBAR, CAB ROOF</u></b></p> <p>One (1) 56.00" LED lightbar shall be mounted on the cab roof.</p> <p>This lightbar shall include the following:</p> <ul style="list-style-type: none"> <li>Four (4) red flashing LED modules facing forward.</li> <li>Two (2) white flashing LED modules facing forward.</li> <li>Two (2) red flashing LED modules one (1) in each front corner.</li> <li>Two (2) red flashing LED modules, one (1) in each rear corner.</li> </ul> <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>To meet NFPA requirements, all white warning lights shall be when the parking brake is applied.</p> <p><b><u>WARNING LIGHTS (CAB FACE)</u></b></p> <p>A pair of flush mounted, flashing LED lights shall be provided on the cab face or grille.</p> <p>The color of these lights shall be red Super LED/clear lens.</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 chrome plated ABS plastic flange.</p> <p><b><u>SIDE ZONE LOWER LIGHTING</u></b></p> <p>There shall be four (4) flashing LED lights located at the following positions:</p> <ul style="list-style-type: none"> <li>• Two (2) lights located, one (1) each side on the engine hood under 62.00" <ul style="list-style-type: none"> <li>○ The color of these lights shall be red Super LED/clear lens</li> </ul> </li> <li>• Two (2) lights located, one (1) each side on the body fender panels <ul style="list-style-type: none"> <li>○ The color of these lights shall be red Super LED/clear lens</li> </ul> </li> </ul> <p>A switch located in the cab on the switch panel shall control these lights.</p> <p>These lights shall be provided with a chrome plated ABS plastic flange</p>		

	Bidder Complies	
	Yes	No
<p><b><u>REAR ZONE LOWER LIGHTING</u></b></p> <p>Two (2) LED lights shall be located at the rear of the apparatus required to meet the lower level optical warning and optical power requirements of NFPA.</p> <p>The color of the lights shall be red Super LED/clear lens</p> <p>There shall be a switch located in the cab on the switch panel to control the lights.</p> <p>Each light shall be installed with a chrome plated ABS plastic flange</p> <p><b><u>WARNING LIGHTS (REAR AND SIDE UPPER ZONE)</u></b></p> <p>There shall be two (2) LED lights with chrome flanges provided - one light each side facing the rear.</p> <p>The LEDs and lens color of these lights shall be red Super LED/clear lens.</p> <p>Two (2) LED lights shall be provided at the rear of the truck in the upper zone, one light facing each side. These lights shall also be installed with chrome plated flanges.</p> <p>The LEDs and lens color of these lights shall be red Super LED/clear lens.</p> <p>There shall be a switch located in the cab to control these lights.</p> <p><b><u>REAR LIGHT MOUNTING</u></b></p> <p>The rear warning lights shall be mounted on the rear side sheet flange and rear bulkhead of the body as high as possible with all wiring totally enclosed.</p> <p><b><u>LOOSE EQUIPMENT</u></b></p> <p>The following equipment shall be furnished with the completed unit:</p> <p>- One (1) bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit</p> <p><b><u>NFPA REQUIRED LOOSE EQUIPMENT PROVIDED BY FIRE DEPARTMENT</u></b></p> <p>The following loose equipment as outlined in NFPA 1901, 2016 edition, section 5.9.3 and 5.9.4 shall be provided by the fire department.</p> <ul style="list-style-type: none"> <li>• 800 ft (60 m) of 2.50" (65 mm) or larger fire hose.</li> <li>• 400 ft (120 m) of 1.50" (38 mm), 1.75" (45 mm), or 2.00" (52 mm) fire hose.</li> <li>• One (1) handline nozzle, 200 gpm (750 L/min) minimum.</li> <li>• Two (2) handline nozzles, 95 gpm (360 L/min) minimum.</li> <li>• One (1) smoothbore of combination nozzle with 2.50" shutoff that flows a minimum of 250 gpm.</li> </ul>		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> <li>• One (1) SCBA complying with NFPA 1981 for each assigned seating position, but not fewer than four (4), mounted in brackets fastened to the apparatus or stored in containers supplied by the SCBA manufacturer.</li> <li>• One (1) spare SCBA cylinder for each SCBA carried, each mounted in a bracket fastened to the apparatus or stored in a specially designed storage space(s).</li> <li>• One (1) first aid kit.</li> <li>• Four (4) combination spanner wrenches.</li> <li>• Two (2) hydrant wrenches.</li> <li>• One (1) double female 2.50" (65 mm) adapter with National Hose threads.</li> <li>• One (1) double male 2.50" (65 mm) adapter with National Hose threads.</li> <li>• One (1) rubber mallet, for use on suction hose connections.</li> <li>• Two (2) salvage covers each a minimum size of 12 ft x 14 ft (3.7 m x 4.3 m).</li> <li>• One (1) traffic vest for each seating position, each vest to comply with ANSI/ISEA 207, <i>Standard for High Visibility Public Safety Vests</i>, and have a five-point breakaway feature that includes two (2) at the shoulders, two (2) at the sides, and one (1) at the front.</li> <li>• Five (5) fluorescent orange traffic cones not less than 28.00" (711 mm) in height, each equipped with a 6.00" (152 mm) retro-reflective white band no more than 4.00" (152 mm) from the top of the cone, and an additional 4.00" (102 mm) retro-reflective white band 2.00" (51 mm) below the 6.00" (152 mm) band.</li> <li>• Five (5) illuminated warning devices such as highway flares, unless the five (5) fluorescent orange traffic cones have illuminating capabilities.</li> <li>• One (1) automatic external defibrillator (AED).</li> <li>• Four (4) ladder belts meeting the requirements of NFPA 1983, <i>Standard on Fire Service Life Safety Rope and System Components</i> (if equipped with an aerial device).</li> <li>• If the supply hose carried does not use sexless couplings, an additional double female adapter and double male adapter, sized to fit the supply hose carried, shall be carried mounted in brackets fastened to the apparatus.</li> <li>• If none of the pump intakes are valved, a hose appliance that is equipped with one or more gated intakes with female swivel connection(s) compatible with the supply hose used on one side and a swivel connection with pump intake threads on the other side shall be carried. Any intake connection larger than 3.00" (75 mm) shall include a pressure relief device that meets the requirements of 16.6.6.</li> <li>• If the apparatus does not have a 2.50" National Hose (NH) intake, an adapter from 2.50" NH female to a pump intake shall be carried, mounted in a bracket fastened to the apparatus if not already mounted directly to the intake.</li> <li>• If the supply hose carried has other than 2.50" National Hose (NH) threads, adapters shall be carried to allow feeding the supply hose from a 2.50" NH thread male discharge and to</li> </ul>		

	Bidder Complies	
	Yes	No
<p>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><b><u>SOFT SUCTION HOSE PROVIDED BY FIRE DEPARTMENT</u></b></p> <p>NFPA 1901, 2016 edition, section 5.8.2.1 requires a minimum of 20' of suction hose or 15' of supply hose shall be carried.</p> <p>Hose is not on the apparatus as manufactured. The fire department shall provide suction or supply hose.</p> <p><b><u>DRY CHEMICAL EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u></b></p> <p>NFPA 1901, 2016 edition, section 5.9.4 requires one (1) approved dry chemical portable fire extinguisher with a minimum 80-B:C rating mounted in a bracket fastened to the apparatus.</p> <p>The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.</p> <p><b><u>WATER EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u></b></p> <p>NFPA 1901, 2016 edition, section 5.9.4 requires one (1) 2.5 gallon or larger water extinguisher mounted in a bracket fastened to the apparatus.</p> <p>The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.</p> <p><b><u>FLATHEAD AXE PROVIDED BY FIRE DEPARTMENT</u></b></p> <p>NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) flathead axe mounted in a bracket fastened to the apparatus.</p> <p>The axe is not on the apparatus as manufactured. The fire department shall provide and mount the axe.</p> <p><b><u>PICKHEAD AXE PROVIDED BY FIRE DEPARTMENT</u></b></p> <p>NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) pickhead axe mounted in a bracket fastened to the apparatus.</p> <p>The axe is not on the apparatus as manufactured. The fire department shall provide and mount the axe.</p> <p><b><u>PAINT PROCESS</u></b></p> <p>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>		

	Bidder Complies	
	Yes	No
<p>1. <u>Manual Surface Preparation</u> - All exposed metal surfaces on the custom cab and body shall be thoroughly cleaned and prepared for painting. Imperfections on the exterior surfaces shall be removed and sanded to a smooth finish. Exterior seams shall be sealed before painting. Exterior surfaces that shall not be painted include; chrome plating, polished stainless steel, anodized aluminum and bright aluminum treadplate.</p> <p>2. <u>Chemical Cleaning and Pretreatment</u> - All surfaces shall be chemically cleaned to remove dirt, oil, grease, and metal oxides to ensure the subsequent coatings bond well. The aluminum surfaces shall be properly cleaned and treated using a high pressure, high temperature 4 step Acid Etch process. The steel and stainless surfaces shall be properly cleaned and treated using a high temperature 3 step process specifically designed for steel or stainless. The chemical treatment converts the metal surface to a passive condition to help prevent corrosion. A final pure water rinse shall be applied to all metal surfaces.</p> <p>3. <u>Surfacer Primer</u> - 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.</p> <p>4. <u>Finish Sanding</u> - The surfacer primer shall be sanded with a fine grit abrasive to achieve an ultra-smooth finish. This sanding process is critical to produce the smooth mirror like finish in the topcoat.</p> <p>5. <u>Sealer Primer</u> - 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.</p> <p>6. <u>Base coat Paint</u> - 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.</p> <p>7. <u>Clear Coat</u> - 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.</p> <p>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.</p> <p>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</p>		



Bidder Complies	
Yes	No

matches the color standard. Electronic color measuring equipment shall be used to compare the color sample to the color standard entered into the computer. Color specifications are used to determine the color match. A Delta E reading shall be used to determine a good color match within each family color.

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

**PAINT - ENVIRONMENTAL IMPACT**

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

- Topcoats and primers shall be chrome and lead free.
- Metal treatment chemicals shall be chrome free. The wastewater generated in the metal treatment process shall be treated on-site to remove any other heavy metals.
- Particulate emission collection from sanding operations shall have a 99.99% 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 98.00%. Water wash systems shall be 99.97% efficient
- Water from water wash booths shall be reused. Solids shall be removed on a continual basis to keep the water clean.
- Paint wastes shall be disposed of in an environmentally safe manner.
- Empty metal paint containers shall be recycled to recover the metal.
- Solvents used in clean-up operations shall be recycled on-site or sent off-site for distillation and returned for reuse.

Additionally, the finished apparatus shall not be manufactured with or contain products that have ozone depleting substances. Contractor shall, upon demand, present evidence that the manufacturing facility meets the above conditions and that it is in compliance with the state EPA rules and regulations.

**COMMERCIAL CHASSIS PAINT**

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

**PAINT**

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

	Bidder Complies	
	Yes	No
<p>manufacturer and chassis manufacturer shall have a mutually preapproved paint color program. The apparatus shall be painted candy apple red.</p> <p><b><u>PAINT CHASSIS FRAME ASSEMBLY</u></b></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><b><u>COMPARTMENT INTERIOR PAINT</u></b></p> <p>The interior of compartmentation shall be painted with a gray spatter type paint.</p> <p><b><u>REFLECTIVE BAND</u></b></p> <p>A 10.00" reflective band shall be provided across the front of the vehicle and along the sides of the body. The cab and body shall have a white stripe and the doors shall have a ruby red stripe.</p> <p>The reflective vinyl band shall be provided across the front bumper.</p> <p><b><u>REAR CHEVRON STRIPING</u></b></p> <p>There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus. The rear surface, excluding the rear compartment door, shall be covered.</p> <p>The colors shall be red and L2 fluorescent yellow green.</p> <p>Each stripe shall be 6.00" in width.</p> <p>This shall meet the requirements of the current edition of NFPA 1901, which states that 50% of the rear surface shall be covered with chevron striping.</p> <p><b><u>CAB DOORS REFLECTIVE STRIPE</u></b></p> <p>A white reflective stripe shall be provided on the interior of each cab door.</p> <p>This stripe shall be a minimum of 96.00 square inches and shall meet the NFPA 1901 requirement.</p> <p><b><u>CD MANUAL, BODY PARTS ONLY</u></b></p> <p>A custom parts manuals for the factory installed parts only shall be provided in CD format with the completed unit.</p> <p><b><u>SERVICE PARTS INTERNET SITE</u></b></p> <p>The service parts information included in this manual are also available on the factory on the Internet.</p> <p><b><u>MANUALS, SERVICE</u></b></p> <p>A CD format service manual supplement containing parts and service information on factory installed components shall be provided with the completed unit.</p>		

	Bidder Complies	
	Yes	No
<p>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> <p><b><u>MANUAL, CHASSIS OPERATION</u></b></p> <p>One (1) chassis operation manual (manufacturer’s standard) shall be provided with the completed unit.</p> <p><b><u>ONE (1) YEAR MATERIAL AND WORKMANSHIP</u></b></p> <p>Each new piece of apparatus shall be provided with a minimum one (1) year basic apparatus material and workmanship limited warranty. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><b><u>CHASSIS WARRANTY</u></b></p> <p>The chassis manufacturer shall provide a <b>five (5) year or 100,000 mile warranty</b>.</p> <p><b><u>PAINT WARRANTY</u></b></p> <p>The commercial chassis manufacturer's paint warranty shall apply to the paint on the chassis only.</p> <p><b><u>COMPARTMENT LIGHT WARRANTY</u></b></p> <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.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><b><u>TRANSMISSION WARRANTY</u></b></p> <p>The transmission shall have a <b>five (5) year/unlimited mileage</b> warranty covering 100 percent parts and labor. The warranty to be provided by transmission supplier and not apparatus builder.</p> <p><b><u>WATER TANK WARRANTY</u></b></p> <p>The poly water tank shall be provided with a lifetime material and workmanship limited warranty.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><b><u>TEN (10) YEAR STRUCTURAL INTEGRITY</u></b></p> <p>Each new piece of apparatus shall be provided with a <b>ten (10) year</b> material and workmanship limited warranty on the apparatus body. The warranty shall cover such portions of the apparatus</p>		

	Bidder Complies	
	Yes	No
<p>built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><b><u>ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY</u></b></p> <p>A roll-up door limited warranty shall be provided. The roll-up door shall be warranted against manufacturing defects for a period of <b>ten (10) years</b>. A <b>five (5) year</b> limited warranty shall be provided on painted roll up doors.</p> <p>A copy of the warranty certificate shall be submitted with the bid package.</p> <p><b><u>PUMP WARRANTY</u></b></p> <p>The <b>five (5) year</b> limited warranty on parts and <b>two (2) year</b> limited warranty on labor shall be provided for the pump.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><b><u>TEN (10) YEAR PUMP PLUMBING WARRANTY</u></b></p> <p>The stainless steel plumbing components and ancillary brass fittings used in the construction of the water/foam plumbing system shall be warranted for a period of <b>ten (10) years or 100,000 miles</b>. This covers structural failures caused by defective design or workmanship, or perforation caused by corrosion, provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original purchaser for a period of ten years from the date of delivery.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><b><u>FOAM SYSTEM WARRANTY</u></b></p> <p>A <b>one (1) year</b> material and workmanship limited warranty shall be provided on the foam system. A <b>five (5) year</b> material and workmanship limited warranty shall be provided on the foam system control head.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><b><u>TEN (10) YEAR PRO-RATED PAINT AND CORROSION</u></b></p> <p>Each new piece of apparatus shall be provided with a <b>ten (10) year</b> pro-rated paint and corrosion limited warranty on the apparatus body. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p>		

Bidder Complies	
Yes	No

**VEHICLE STABILITY CERTIFICATION**

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

**CAB INTEGRITY**

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

- ECE Regulation No.29
- SAE J2422 Cab Roof Strength Evaluation - Quasi-Static Loading Heavy Trucks.

**AMP DRAW REPORT**

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

The manufacturer of the apparatus shall provide the following:

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

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