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	Bidder Complies	
	Yes	No
<p><u>NOTICE OF REQUEST FOR SEALED BID</u></p> <p>The Fox River & Countryside Fire Rescue District (the “District”) hereby gives Public Notice pursuant to Section 11k of the Illinois Fire Protection District Act, 70 ILCS 705/11k (the “Act”) of an opportunity to submit sealed bids for the purchase of one (1) Mini Pumper apparatus and auxiliary equipment per the specifications described.</p> <p>The Board of Trustees (“Trustees”) will receive sealed bids for the Purchase of One (1) Mini Pumper Apparatus and Auxiliary Equipment. Such sealed bids must be received by the District, 34W500 Carl Lee Road, St. Charles, IL 60174, <u>PRIOR TO:</u> October 29, 2020 at 9:30 AM central daylight time.</p> <p>All bids that are timely received shall be opened and read aloud at 9:45 AM on the date of aforesaid in the Fox River & Countryside Fire Rescue District Station 1 – Meeting Room. 34W500 Carl Lee Rd., St. Charles, IL 60174.</p> <p>All bids must be submitted in writing. Bids may be submitted in person or by USPS or any other private express messenger delivery including and not limited to UPS or FedEx. All bids will be stamped with date and time by the District and a copy of the receipt will be furnished to the bidder. Bidder assumes the risk of timely receipt of bids by any deliver method other than in person. The District reserves the right to prescribe a form for bid submission.</p> <p>I. INTENT OF SPECIFICATIONS</p> <p>It is the intent of these specifications to cover the furnishings and delivery to the District a complete and soundly engineered fire apparatus equipped as hereinafter specified.</p> <p>These specifications address only general requirements regarding the type of construction and tests to which the apparatus must conform. Also, only general requirements of certain details concerning finish, equipment, and appliances with which the successful bidder must comply are included in these specifications. Where not otherwise specified, minor details of construction and materials are left to the discretion of the contractor, who shall be solely responsible for the design and construction of all features. The apparatus shall conform to the requirements of the current National Fire Protection Association Standard 1901 for Pumper Fire Apparatus, as if they were written out in full detail, insofar as they apply, unless otherwise indicated in these specifications.</p> <p>II. GENERAL REQUIREMENTS</p> <ol style="list-style-type: none"> Price quotations shall be firm FOB St Charles, IL and exclusive of any Federal excise tax and all State of Illinois tax. The District will make tax exempt status information available upon request. All bids shall be accompanied by a set of contractor's specifications consisting of a detailed description of the apparatus and equipment proposed, including warranties and guarantees, a ½" – 1' scale drawing of the exact apparatus, and specifications indicating size, type, model, and make of all component parts and equipment. The contractor or manufacturer of the apparatus must be within 250 miles of the District, Station 1 – 34W500 Carl Lee Rd., St. Charles, IL 60174. Manufacturer's specifications shall be submitted in the same order as these specifications, as nearly as practicable, in order to facilitate effective bid review by District staff. 		

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<p>5. Each bid shall include a "Statement of Exceptions" as indicated in NFPA 1901 Section 4.21. The Statement of Exceptions shall specifically describe each aspect of the completed apparatus that will not be fully compliant with the requirements of the standard at the time of delivery.</p> <p>a. The drawing and specifications must be approved by the District prior to construction.</p> <p>b. The written specifications shall take precedence over the drawing where discrepancies may arise.</p> <p>c. Any bid received without these specifications and drawing shall be rejected. There shall be no exceptions to any of these requirements.</p> <p>6. A performance bond must be included in the bid price. The bond must be in the District's possession within ten (10) days after award of the contract.</p> <p style="padding-left: 40px;">A bid bond in the amount of 10% of the bid price and the proposed form of the performance bond shall be provided with the bid submittal.</p> <p>7. Bids will only be considered from companies which have demonstrated experience of in the field of fire apparatus construction. Therefore, each bidder shall furnish the following information in its bid submission:</p> <p>a. A customer listing of like units in service and their location.</p> <p>b. The location of the closest factory representative in proximity to District.</p> <p>c. The manufacturer's closest factory staffed facility to Customer.</p> <p>d. Documentation of the length of time manufacturing aluminum fire apparatus bodies.</p> <p>e. Evidence of the ability to construct the apparatus as specified and proof that the manufacturer is able to render prompt service and furnish replacement parts for said apparatus.</p> <p>8. The bid shall specify the location(s) of warranty work. If the warranty work is to be performed at a location other than the manufacturer, a statement must be made naming the party or parties responsible for delivery and pick-up of the apparatus to the location. Expenses that are covered by the manufacturer should be included along with a listing of acceptable firms for performing warranty work. A statement that warranty work performed by a vehicle maintenance shop will be compensated by the manufacturer shall also be included. If the warranty work cannot be performed at a District fire station, and must be performed at the factory, the manufacturer shall furnish a loaner unit to the District while the unit is being repaired</p> <p>9. Total delivery time from contract award and receipt of order to the District must not exceed 220 calendar days from the formal award of the contract to the successful bidder. The successful bidder shall acknowledge the receipt of the order and certify the delivery schedule at the contract signing.</p> <p>10. A preconstruction conference shall be held at the manufacturer's location within thirty (30) days of contract execution. Upon completion of the conference, a full set of drawings and specifications for the District's approval shall be forwarded prior to the start of any construction.</p> <p>11. Failure to comply with any of the above items may be cause for rejection of the bid.</p>		

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<p>III. SERVICE</p> <p>1. The bidder must have "Factory Direct Service". The manufacturer must stock all replacement parts for said apparatus. The bidder must include all information about the "Factory Direct Service Center", including the distance from the service center to the District Station 1. If the bidder does not have a "Factory Direct Service Center", all information about the factory authorized service center shall be included. The information shall include but not be limited to the following:</p> <ul style="list-style-type: none"> a. Number of miles from the Factory Direct Service center to the District Station 1 b. Number of EVT (Emergency Vehicle Technician) certified mechanics c. Description of all repair work (major or minor) that can be performed d. Description of all repair work that would have to be sent back to factory for repair. e. Description of all chassis and chassis related work that can be performed at the service facility including warranty work <p>2. Any contract award shall include the following: If any repair or warranty work shall be contracted to a facility not owned by the successful bidder, the address of the contracted facility must be furnished to the District.</p> <p>IV. ISO 9001</p> <p>1. The manufacturer must operate a Quality Management System meeting the requirements of ISO 9001. These standards, sponsored by the "International Organization for Standardization (ISO)," specify the quality systems that shall be established by the manufacturer for design, manufacture, installation, and service. ISO Registration is not required but in lieu thereof evidence of compliance must be submitted.</p> <p>V. INSTRUCTION TO BIDDERS</p> <p>1. Bids must be printed and legible. The District may furnish a form for bid submission to facilitate review.</p> <p>2. In submitting the bid, the bidder agrees that acceptance of the bid by the District will require a signed contract.</p> <p>3. The successful bidder shall indemnify and save harmless the District, its officials, agents, and employees, against all claims for royalties and patent infringements thereon which may be involved in the manufacture or use of the apparatus or equipment to be furnished.</p> <p>4. The apparatus and any auxiliary equipment shall remain the property of the manufacturer until delivered to and accepted by the District.</p> <p>5. Any exceptions to the specifications herein must be listed and fully explained on a separate page entitled "Exceptions to Specifications". The listed exceptions shall refer to each specification by page and paragraph.</p> <p>6. All bids must be valid for a minimum of thirty (30) days from bid opening date.</p>		

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<p>7. The District reserves the right to waive any non-material, informalities, omissions, oversights, or irregularities in any bid consistent with state law and to reject any and all bids. The District also reserves the right to revise this bid package or to specify to a form for bid submittal.</p> <p>8. All bidders shall submit a bid price for the apparatus, and an itemized bid price for any accessory equipment.</p> <p>VI. QUALITY AND WORKMANSHIP</p> <p>1. The apparatus and equipment herein specified shall be the manufacturer's latest model of production embodying, the latest improved automotive engineering practices. All materials, workmanship, and finish must be of superior quality and conform to the nature of service and the character to which the apparatus is intended, in order to insure long life, dependability, and low costs of maintenance and repair.</p> <p>VII. DESIGN CRITERIA</p> <p>1. The apparatus shall be designed, constructed, and equipment mounted with due consideration to the distribution of the load to be sustained and to the general type and character of service to which the apparatus will be subjected. All parts of the apparatus shall be sufficiently strong, with ample safety factors provided to withstand the general service under load, meeting both on and off-road requirements.</p> <p>2. The design of the apparatus must allow for ease of operation, symmetrical proportions, and ready access to the various parts requiring lubrication, inspection, adjustment, and repair.</p> <p>3. Welding that would prevent the removal of any component part for service or repair shall not be employed in the assembly of the apparatus.</p> <p>4. The electrical system shall be designed to meet and exceed the anticipated electrical load requirements of the devices indicated in the specifications. The manufacturer shall provide an amp load performance chart for the apparatus as specified.</p> <p>5. The chassis must be designed for fire apparatus use.</p> <p>VIII. WARRANTY REQUIREMENTS</p> <p>1. A standard one (1) year warranty applies to defects in materials and workmanship under normal use and service.</p> <p>2. A twenty (20) year warranty applies to the body structure.</p> <p>3. A ten (10) year non-prorated warranty applies to the paint.</p> <p>4. A ten (10) year warranty applies to the stainless steel plumbing/valving.</p> <p>5. A three (3) year warranty applies to the lettering and striping lamination.</p> <p>6. A five (5) year warranty applies to electrical components.</p> <p>7. A lifetime warranty applies to the water tank</p> <p>8. A copy of each of the above warranties shall be supplied with the bid for review.</p>		

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<p>IX. DELIVERY</p> <ol style="list-style-type: none"> 1. A qualified and responsible manufacturer's representative shall deliver the apparatus and equipment and shall remain at the District for a period of three (3) consecutive days or a sufficient period of time to instruct personnel in the operation, care, and maintenance of the apparatus and equipment. 2. Responsibility for the apparatus and equipment shall remain with the manufacturer until satisfactory completion of the acceptance tests and formal acceptance by the District. 3. The apparatus shall be delivered to the District under its own power by the manufacturer. The apparatus and equipment shall be ready for immediate use at the time of delivery. 4. The apparatus will be inspected upon delivery for compliance with the contract. Contractor shall provide written evidence of conformance to all specifications including factory acceptance testing. Deviations shall be cause for rejection of the apparatus or auxiliary equipment unless specified in the contract. 5. The contractor shall maintain comprehensive and liability insurance for the apparatus and auxiliary equipment during the delivery period until accepted by the District. Upon acceptance, the District will assume the insurance obligation. <p>X. INFORMATION REQUIRED FROM MANUFACTURER</p> <ol style="list-style-type: none"> 1. The manufacturer must supply at the time of delivery at least two (2) copies of the complete operation and maintenance manuals covering the completed apparatus and equipment as delivered, two (2) destination effective wiring diagrams, copies of electrical and mechanical component manuals for equipment purchased on or with the apparatus, and a sketch of the booster tank indicating all dimensions and baffle locations. <p>XI. INSPECTION TRIPS</p> <ol style="list-style-type: none"> 1. Three inspection trip(s) during the construction phase will be provided for three District personnel, with all reasonable travel and living expenses paid by the manufacturer. The trips shall allow the District's representative to inspect the apparatus and auxiliary equipment for quality, compliance with the contract and to make any and all necessary additions, corrections or deletions. <p>DESIGN SPECIFICATIONS</p> <ol style="list-style-type: none"> 1. Personnel Capacities - To meet the spirit of N.F.P.A. 1500 paragraph 6.3.1, this apparatus must be designed to transport not more than three (3) people. 2. Component Protection - Hydraulic lines, air system tubing, control cables, and electrical lines shall be clipped to the frame or body structure of the apparatus and shall be furnished with metal protective looms or grommets at each point where they pass through body panel or structural members. 		

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<p>3. Vehicle Stability</p> <p>a. The height of the fully loaded vehicle's center of gravity shall not exceed the chassis manufacturer's maximum limit.</p> <p>b. The front to rear weight distribution of the fully loaded vehicle as defined by NFPA shall be within the limits set by the chassis manufacturer. The front axle loads shall not be less than the minimum axle loads specified by the chassis manufacturer, under full load and all other loading conditions.</p> <p>c. The difference in weight on the end of each axle, from side to side, when the vehicle is fully loaded and equipped as defined by NFPA shall not exceed 7 percent (7%).</p> <p>XII. INFORMATION TO BE PROVIDED</p> <p>1. The successful bidder shall supply, at the time of delivery, the following documents:</p> <p>2. The manufacturer's record of apparatus construction details, including the following information:</p> <p>a. Owner's name and address.</p> <p>b. Apparatus manufacturer, model, and serial number.</p> <p>c. Chassis make, model, and serial number.</p> <p>d. GAWR of front and rear axles.</p> <p>e. Front tire size and total rated capacity in pounds.</p> <p>f. Rear tire size and total rated capacity in pounds.</p> <p>g. Chassis weight distribution in pounds with water and manufacturer mounted equipment.</p> <p>h. Engine make, model, serial number, number of cylinders, bore, stroke, displacement and compression ratio, rated horsepower and related speed, and no-load governed speed.</p> <p>i. Type of fuel and fuel tank capacity.</p> <p>j. Electrical system voltage and alternator output in amps.</p> <p>k. Battery make and model, capacity in CCA.</p> <p>l. Transmission make, model, and type.</p> <p>m. Pump to drive through the transmission (yes or no).</p> <p>n. Engine to pump gear ratio and transmission gear ratio used.</p> <p>o. Pump make, model, rated capacity in gpm, serial number, number of stages, and impeller diameter in inches.</p> <p>p. Pump transmission make, model, and serial number.</p> <p>q. Priming device type.</p> <p>r. Type of pump pressure control system.</p> <p>s. Auxiliary pump make, model, rated capacity in gpm, serial number, number of stages, and impeller diameter in inches.</p>		

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<ul style="list-style-type: none"> t. Water tank certified capacity in gallons. u. Aerial device type, rated vertical height in feet, rated horizontal reach in feet, and rated capacity in pounds. v. Paint numbers. w. Company name and signature of responsible company representative. x. If the apparatus has a fire pump, the pump manufacturer's certification of suction capability. y. If the apparatus has a fire pump, a copy of the apparatus manufacturer's approval for stationary pumping applications. z. If the apparatus has a fire pump, the engine manufacturer's certified brake horsepower curve for the engine shall be furnished, showing the maximum no-load governed speed. aa. If the apparatus has a fire pump, the pump manufacturer's certification of hydrostatic test. bb. If the apparatus has a fire pump, the certification of inspection and test for the fire pump. cc. If the apparatus has an aerial device, the certification of inspection and test for the aerial device. dd. If the apparatus has an aerial device, all the technical information required for inspections to comply with NFPA. ee. Weight documents from a certified scale showing actual loading on the front axle, rear axle(s), and overall vehicle (with the water tank full but without personnel, equipment, and hose) shall be supplied with the completed vehicle. ff. Written load analysis and results of the electrical system performance tests. gg. If the apparatus is equipped with a water tank, the certification of water tank capacity. hh. If the apparatus has a fire pump, two (2) copies of the pump operation and maintenance manual. ii. Two (2) destination effective wiring diagrams. jj. Copies of electrical and mechanical component manuals for equipment purchased on or with the apparatus. kk. A sketch of the booster tank indicating all dimensions and baffle locations. ll. If the apparatus has a pump, one (1) certification of third-party test. <p>XIII. CHASSIS</p> <ul style="list-style-type: none"> 1. The chassis shall be supplied by the apparatus manufacturer. The chassis shall be a Ford F550, Four Wheel Drive, Crew Cab with the following features: <ul style="list-style-type: none"> a. Engine: 6.7L 4V OHV Power Stroke - V8 Turbo Diesel b. Transmission: TorqShift 10-Speed Automatic c. Limited Slip w/4.88 Axle Ratio d. GVWR: 19,500 lb. Payload Plus Upgrade Package 		

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<ul style="list-style-type: none"> e. Tires: 225/70Rx19.5G BSW Traction f. [4] Factory Aluminum Wheels g. HD Vinyl 40/20/40 Split Bench Seat h. Monotone Paint Application i. 203" Wheelbase j. Radio: AM/FM Stereo w/MP3 Player k. Power Equipment Group l. Extra Heavy-Duty Front-End Suspension - 7,500 GAWR m. Engine Block Heater n. Transmission Power Take-Off Provision o. Operator Commanded Regeneration p. Upfitter Interface Module q. 397 Amp Alternator r. 50-State Emissions System s. Medium Earth Gray Interior t. Agate Black Metallic Exterior <p>XIV. CHASSIS MODIFICATIONS</p> <p>1. WHEEL FINISH:</p> <ul style="list-style-type: none"> a. The chassis supplied wheels will be painted to match the apparatus. b. Color: Red Wheels to match body with Black Lug Nuts <p>2. SEAT REMOVAL:</p> <ul style="list-style-type: none"> a. The center and left seats shall be removed from the rear of the cab. The Ford OEM seat on the right side shall remain as is. <p>3. THERE SHALL BE AN AIR PACK TREE MOUNTED ON THE BACK SIDE OF THE EMS COMPARTMENT FOR THE OCCUPANT'S AIR PACK</p> <p>4. EMS COMPARTMENT:</p> <ul style="list-style-type: none"> a. An EMS compartment shall be installed in the chassis cab, located behind the driver seat location. The compartment shall include two (2) adjustable shelves. The compartment exterior shall be finished Zolatone Silver Gray. The compartment interior shall remain natural finish aluminum. b. The compartment shall remain open on the left side for ease of access to the stored contents, accessible from the left rear crew cab door. The opening shall include die cut Hypalon cargo netting for content retention. 		

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<p>5. EMS COMPARTMENT LIGHTS - KRYSTAL-LITE:</p> <p>a. Each cab EMS compartment shall incorporate LED Krystal-Lite tube lighting to illuminate the entire area. The lights shall run the entire height of the compartment on each side of the door opening. A switch shall be provided on the exterior of the compartment on the left (driver's) side to activate the lights. The lighting shall meet the requirements of NFPA 13.10.5</p>		
<p>6. 120 VOLT POWER STRIP:</p> <p>a. One (1) 120-Volt power strip, model 681-77000N, shall be installed in the EMS compartment. Each power strip will have eight (8) on/off switch controlled, continuously powered outlets and a fifteen (15) amp circuit breaker. Each power strip shall be powered from the shoreline connection and hard wired to the apparatus for dependability.</p>		
<p>7. FUEL TANK:</p> <p>a. The chassis shall incorporate a rear fuel tank installed by the chassis manufacturer. The fill and vent shall be installed behind the left rear wheel. The fill shall be labeled with the type of fuel intended.</p> <p>b. THE FUEL FILL SHALL INCORPORATE A STAINLESS-STEEL SPLASH GUARD TO PROTECT THE PAINT AND BODY AREA</p>		
<p>8. DIESEL EXHAUST FLUID TANK:</p> <p>a. The chassis shall incorporate a DEF Fluid tank installed by the chassis manufacturer. The fill shall be installed in the right wheel well area. The fill shall be labeled with the type of fluid intended.</p> <p>b. THE DEF FILL SHALL INCORPORATE A STAINLESS-STEEL SPLASH GUARD TO PROTECT THE PAINT AND BODY AREA</p>		
<p>9. TRAILER HITCH REAR MOUNTED:</p> <p>a. One (1) Reese type trailer hitch shall be incorporated in the rear tail step area of the apparatus. The hitch assembly shall utilize 2" square tubing.</p> <p>b. ONE (1) HITCH RECIEVER AND A 1-7/8" BALL SHALL BE INCLUDED</p> <p>c. 12-volt electrical connections for a portable winch shall be provided.</p>		
<p>10. WARN XD9000i MULTI-MOUNT WINCH:</p> <p>a. One (1) Warn Part Number 37441 Multi-Mount 9000-pound winch kit shall be supplied with the apparatus. The winch features a no-load retrieval line speed of 38' per minute. Integrated solenoid. Runs cool with low amp draw for long winching duty cycles. Comes with 125' of 5/16" wire rope.</p>		

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<ul style="list-style-type: none"> i. Integrated control box provides excellent protection to electronics ii. Exclusive brake design provides superior control while winching iii. Durable 3-stage planetary gear train for smooth, reliable, operation iv. Series-wound, high-speed motor provides fast line speed and strong pulls v. Next-generation remote control with 12' (3.7m) lead vi. Chip-resistant, powder-coated finish vii. 125' of 5/16" (38m of 8mm) diameter wire rope viii. 4.6hp Series Wound motor delivers big torque and power <p>b. The Kit includes winch, remote, carrier, 7.5' power lead with quick connect plug for front of vehicle and hawse fairlead. Front receiver and rear power lead sold separately. Plugs into any standard 2" Class III receiver hitch.</p> <p>11. BUCKSTOP BRUSH GUARD:</p> <ul style="list-style-type: none"> a. One (1) Series II BUCKSTOP brush guard shall be installed on the front of the chassis. The brush guard shall be black in color and shall include one (1) FRONT REESE RECIEVER. THE RECIEVER SHALL INCLUDE THE ELECTRICAL CONNECTION FOR THE PORTABLE WINCH. b. The BUCKSTOP bumper is ¼" steel in the primary impact zone and winch center and 3/16" steel under the headlights. The Buckstop bumper features a removable grill guard for ease of maintenance access. A top winch access door protects the winch and provides a clean look for the truck. When using the winch, remove the Access Door for an ample 2-foot opening to get at winch controls and cable spool. c. The BUCKSTOP is sandblasted and feature a two-coat powder finish. The powder coat is an industrial strength baked on finish. All critical seams are welded inside and out. Two (2) tow loops are standard. <p>12. HELMET STORAGE:</p> <p>To meet the intent of NFPA 14.1.8.4.1, the apparatus shall provide exterior storage for each occupants helmet.</p> <p>XV. PUMP AND PIPING</p> <p>1. MIDSHIP PUMP:</p> <ul style="list-style-type: none"> a. MANUFACTURER: Hale Fire Pump Co. b. MODEL: DSD150 c. CAPACITY: 1500 gpm. @ 150 psi. d. SUCTION SIZE: 6" NST <p>2. PUMP ASSEMBLY</p>		

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<p>a. The pump shall be of a size and design to mount on the chassis rails of commercial and custom truck chassis and have the capacity of 1500 gallons per minute (U.S. GPM), NFPA-1901 rated performance.</p> <p>b. The entire pump shall be assembled and tested at the pump manufacturer's factory.</p> <p>c. The pump shall be driven by a driveline from the truck transmission. The engine shall provide sufficient horsepower and RPM to enable pump to meet and exceed its rated performance.</p> <p>d. The entire pump shall be hydrostatically tested to a pressure of 600 psi. The pump shall be fully tested at the pump manufacturer's factory to the performance spots as outlined by the latest NFPA Pamphlet No. 1901. Pump shall be free from objectionable pulsation and vibration.</p> <p>e. The pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 psi. (2069 bar.) All metal moving parts in contact with water shall be of high-quality bronze or stainless steel. Pump utilizing castings made of lower tensile strength cast iron not acceptable.</p> <p>f. Pump body shall be vertically split, on a single plane for easy removal of entire impeller assembly including clearance rings</p> <p>g. Pump shaft to be rigidly supported by two bearings for minimum deflection. The bearings shall be heavy-duty, deep groove ball bearings in the gearbox, and they shall be splash lubricated.</p> <p>h. 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 and be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.</p> <p>i. Impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body.</p> <p>j. The pump shaft shall be heat-treated, electric furnace, corrosion resistant stainless steel. Pump shaft must be sealed with double-lip oil seal to keep road dirt and water out of gearbox.</p> <p>3. GEARBOX</p> <p>a. Pump gearbox shall be of sufficient size to withstand up to 16,000 lbs. ft. of torque of the engine. The drive unit shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature.</p> <p>b. The gearbox drive shafts shall be of heat-treated chrome nickel steel and at least 2¾" in diameter, on both the input and output drive shafts. They shall withstand the full torque of the engine.</p> <p>c. All gears, both drive and pump, shall be of highest quality electric furnace chrome nickel steel. Bores shall be ground to size and teeth integrated and hardened, to give an extremely accurate</p>		

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<p>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. (No exceptions.)</p> <p>d. The pump ratio shall be selected by the apparatus manufacturer to give maximum performance with the engine and transmission selected.</p> <p>4. HALE ESP -12 PRIMING PUMP:</p> <p>a. The priming pump shall be a positive displacement, oil-less rotary vane electric motor driven pump conforming to the requirements of NFPA 1901. The pump body shall be manufactured of heat-treated anodized aluminum for wear and corrosion resistance.</p> <p>b. The pump shall be capable of producing a minimum 24 Hg vacuum at 2000 feet above sea level.</p> <p>c. The electric motor shall be a 12 VDC totally enclosed unit.</p> <p>d. The priming pump shall not require lubrication.</p> <p>e. The priming pump shall be operated by a single push-pull control valve mounted on the pump operator panel. The control valve shall be of all bronze construction.</p> <p>5. DRIVELINES:</p> <p>a. The chassis drivelines shall be modified to accept the pump drivelines. The pumping system drivelines shall be manufactured by the apparatus manufacturer. The drivelines shall be professionally balanced by the apparatus manufacturer to ensure complete system balance.</p> <p>6. 6" SUCTION:</p> <p>a. One (1) 6" NST suction shall be located on left side and rear of the apparatus body. The suction shall be open and not gated. An inlet screen and a 6" handle cap shall be included.</p> <p>7. BALL INTAKE VALVE</p> <p>a. One (1) Task Force Tips model #AB8NX-NX manually operated lightweight aluminum ball intake valve shall be provided. The unit shall be equipped with an adjustable pressure relief valve under the main valve body with an eight-position adjustable inlet elbow. The valve shall be controlled with an NFPA compliant hand wheel gear operator which can be configured for left- or right-hand operation. A 3/4" bleeder valve shall be provided to exhaust excess air or water from the valve and hoseline. A position indicator shall be provided to allow for quick visualization of the status of the valve in the open, closed, or partial positions. For maximum corrosion protection the polyimpregnated aluminum casting shall be hardcoat anodized, with a powder coat internal and external finish and all components facing the wet side of the valve shall be constructed from stainless steel.</p>		

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<p>b. The connections shall be: 6" male NH rigid with 30 degree swiveling detent elbow and a 6" female NH swivel long handle connection and include polymer bearing strips for prevention of galvanic corrosion.</p> <p>c. LOCATION: Left Side</p> <p>8. PIPING:</p> <p>a. The piping will be stainless steel material throughout the waterway system. The suction waterway shall be 6" 304 stainless steel material. The suction waterways shall be designed to flow a minimum of 17% in excess of the rated capacity from draft. The suction piping shall incorporate a 4" suction inlet to allow for full flow from the tank valve assembly. The suction piping shall be adapted from 6" TIPT to NST with a chrome adapter. The suction system shall be designed with 6" Victaulic couplings to allow ease of access for maintenance or removal of the pumping system.</p> <p>b. The discharge system shall incorporate stainless steel distribution system. The manifold shall be fed from the 4" piping system. The discharge system shall incorporate a 4" Victaulic system to allow ease of access for maintenance or removal of the pumping system. Each discharge shall be fed from above the manifold system.</p> <p>9. PUMP DRAINS:</p> <p>a. The entire pump and its controls shall be drainable with a master drain piped to the lowest points of the pump and its control piping. The master drain shall be of a threaded design that will seal all drain points without allowing recycle.</p> <p>10. HALE MECHANICAL SEAL:</p> <p>a. Optional mechanical seal in place of pump packing. One (1) only required on the suction (inboard) side of the pump. The mechanical seal must be 2" in diameter and shall be spring loaded, maintenance free and self-adjusting. Mechanical seal construction shall be a carbon sealing ring, stainless steel coil spring, Viton rubber cup, and a tungsten carbide seat with Teflon backup seal.</p> <p>11. AIR PUMP SHIFT:</p> <p>a. The shifting mechanism shall be a heat-treated, hard anodized aluminum power cylinder, with stainless steel shaft. The assembly shall be plumbed utilizing a 3/8" air line for maximum performance. An in-cab control for rapid shift shall be provided that locks in road or pump.</p> <p>b. For automatic transmissions, three 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 green lights to be located in the truck driving compartment and one green light on pump operators' panel adjacent to the throttle control. For manual transmissions, one green warning light will be provided for the driving compartment. All lights shall have appropriate identification/instruction plates.</p>		

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	Yes	No
<p>12. INTAKE PRESSURE RELIEF VALVE</p> <p>a. One (1) Task Force Tips model #A1860 pressure relief valve shall be provided. The valve shall have an easy to read adjustment range from 90 to 300 PSI with easy to read 90, 125, 150, 200, 250, 300 psi settings and an "OFF" position. Pressure adjustment can be made utilizing a ¼" hex key, 9/16" socket or 14mm socket. For corrosion resistance the cast aluminum valve shall be hardcoat anodized with a powder coat interior and exterior finish. The valve shall be configured for either a Waterous or Hale pump, and have a 2-1/2" male NH threaded discharge outlet and a "DO NOT CAP" label near discharge outlet. The valve shall meet NFPA 1901 requirements for pump inlet relief valve. The unit shall be covered by a five-year warranty.</p>		
<p>13. REQUIRED PUMP TESTING:</p> <p>a. If the fire pump has a rated capacity of 750 gpm or greater capacity, the pump shall be tested after the pump and all its associated piping and equipment have been installed on the apparatus. The tests shall be conducted at the apparatus manufacturer's facility and certified by an EVT Certified pump operator. The certification shall include (at least) the following tests: the pumping test, the pumping engine overload test, the pressure control system test, the priming device tests, and the vacuum test. If the apparatus is equipped with a water tank, the water tank to pump flow test shall be included.</p> <p>b. A test plate shall be provided at the pump operator's position that gives the following information: the rated discharges and pressures, the speed of the engine determined by the certification test for each unit, the position of the parallel/series pump as used, and the no-load governed speed of the engine stated by the engine manufacturer on a certified brake horsepower curve. The plate shall be completely stamped with all information at the factory and attached to the vehicle prior to shipping.</p>		
<p>14. PUMP CERTIFICATION:</p> <p>a. Upon final apparatus delivery, the original copy of the certificate of inspection by an independent third party shall be furnished.</p> <p>b. The pumping system shall be capable of delivering: 100 % of rated capacity at 150 psi. net pump pressure 70 % of rated capacity at 200 psi. net pump pressure 50 % of rated capacity at 250 psi. net pump pressure</p>		
<p>15. PUMP PANEL, LEFT SIDE OF BODY:</p> <p>a. The pump operator's panel shall be located on the apparatus left side, behind the chassis cab.</p> <p>b. An automotive rubber seal shall be adhered to the aluminum to reduce vibration that may occur during pump operation or road application. The panel shall be attached to the framing with 3/16" pin, 1" knuckle, and continuous stainless-steel hinges. The hinges shall be attached with stainless steel fasteners.</p>		

	Bidder Complies	
	Yes	No
<p>c. Each panel shall be secured with two Southco latches, located at the top and bottom of the door opening.</p> <p>16. PUMP OPERATOR'S PANEL: The pump operator's panel shall include the following:</p> <p>a. PRESSURE GOVERNOR and MONITORING DISPLAY</p> <p>i. One (1) Fire Research PumpBoss series PBA400-A00 pressure governor and monitoring display kit shall be installed. The kit shall include a control module, intake pressure sensor, discharge pressure sensor, and cables. The control module case shall be waterproof and have dimensions not to exceed 6 3/4" high by 4 5/8". The control knob shall be 2" in diameter with no mechanical stops, have a serrated grip, and a red idle push button in the center. It shall not extend more than 1 3/4" from the front of the control module. Inputs for monitored information shall be from a J1939 databus or independent sensors. Outputs for engine control shall be on the J1939 databus or engine specific wiring.</p> <p>ii. The following continuous displays shall be provided:</p> <p>a) Engine RPM; shown with four daylight bright LED digits more than 1/2" high</p> <p>b) Check engine and stop engine warning LEDs</p> <p>c) Engine oil pressure; shown on a dual color (green/red) LED bar graph display</p> <p>d) Engine coolant temperature; shown on a dual color (green/red) LED bar graph display</p> <p>e) Transmission Temperature; shown on a dual color (green/red) LED bar graph display</p> <p>f) Battery voltage; shown on a dual color (green/red) LED bar graph display</p> <p>g) Pressure and RPM operating mode LEDs</p> <p>h) Pressure / RPM setting; shown on a dot matrix message display</p> <p>i) Throttle ready LED.</p> <p>j) A dot-matrix message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator. All LED intensity shall be automatically adjusted for day and nighttime operation.</p> <p>iii. The program shall store the accumulated operating hours for the pump and engine to be displayed with the push of a button. It shall monitor inputs and support audible and visual warning alarms for the following conditions:</p> <p>a) High Battery Voltage</p> <p>b) Low Battery Voltage (Engine Off)</p> <p>c) Low Battery Voltage (Engine Running)</p> <p>d) High Transmission Temperature</p> <p>e) Low Engine Oil Pressure</p> <p>f) High Engine Coolant Temperature</p> <p>g) Out of Water (visual alarm only)</p> <p>h) No Engine Response (visual alarm only).</p> <p>i) The program features shall be accessed via push buttons located on the front of the control module. There shall be a USB port located at the rear of the control module to upload future firmware enhancements.</p>		

	Bidder Complies	
	Yes	No
<p>iv. The governor shall operate in two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between modes. A throttle ready LED shall light when the interlock signal is recognized. The governor shall start in pressure mode and set the engine RPM to idle. In pressure mode the governor shall automatically regulate the discharge pressure at the level set by the operator. In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi. Other safety features shall include recognition of no water conditions with an automatic programmed response and a push button to return the engine to idle.</p> <p>v. The pressure governor and monitoring pressure display shall be programmed at installation for a specific engine.</p> <p>17. MASTER GAUGES:</p> <p>a. One (1) 4½" compound gauge with a range of 30-0-600 PSI.</p> <p>b. One (1) 4½" pressure gauge with a range of 0-600 PSI</p> <p>18. WATER TANK INDICATOR</p> <p>a. One (1) Fire Research TankVision model WLA200-A00 tank indicator kit shall be installed. The kit shall include an electronic indicator module, a pressure sensor, and a 10' sensor cable. The indicator shall show the volume of water in the tank on nine (9) easy to see super bright LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be waterproof, manufactured of aluminum, and have a distinctive blue label.</p> <p>b. The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, and a datalink to connect remote indicators. Low water warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.</p> <p>c. The indicator shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted from the outside of the water tank near the bottom. No probe shall place on the interior of the tank. Wiring shall be weather resistant and have automotive type plug-in connectors.</p> <p>d. The gauge shall be located at the pump operator's panel.</p> <p>19. LINE READING GAUGES:</p> <p>a. One (1) line reading gauge supplied for each discharge. The gauge shall have a 2½ diameter face with a graduated output scale of 0-400 PSI with black print on a bright white background. The gauge shall be constructed with a Zytel housing, acrylic lens, and polished stainless-steel</p>		

	Bidder Complies	
	Yes	No
<p>bezel. The Zytel nylon case shall be temperature compensated with an internal breathing diaphragm to permit a fully filled case and to allow for a rigid lens with a distortion free viewing area.</p> <p>b. A 1/4" brass male NPT fitting shall be centrally located on the rear of the housing and feature the Kem-X socket and freeze protection system that isolates the gauge from contaminants. The gauge utilizes a phosphor bronze Bourdon tube filled with a freeze proof liquid isolated by a diaphragm. The gauge shall be filled with low temperature glycerin for an operating range of -40 to +150 degrees Fahrenheit, which prevents bouncing of the readout needle and provides for an accuracy rating of plus or minus 1% across the entire scale of the gauge.</p> <p>20. COLOR CODED TAGS:</p> <p>a. Color coded tags with chrome plated bezels shall be provided. Unless otherwise specified all tags shall be color coded to NFPA recommendations and shall be located at the control location, intake/discharge location, and at the drain port location.</p> <p>21. TEST PORTS:</p> <p>a. Vacuum and pressure test ports shall be provided on the pump operator's panel for connection of the pump test gauges.</p> <p>22. PUSH BUTTON ON PUMP PANEL FOR AIR HORNS:</p> <p>a. There shall be a push button provided on the pump panel to activate the air horns.</p> <p>23. STAINLESS STEEL PUMP PANELS:</p> <p>a. The pump operator's panel and discharge panels shall be manufactured of 12-gauge stainless steel and shall include a full width stainless steel light hood which shall have three (3) E10 Series LED lights.</p> <p>b. The side discharge panel on the passenger side of the apparatus shall be manufactured of 12-gauge stainless steel and shall include two (2) Eon E03 Series LED lights on the side panel above the discharge panel.</p> <p>24. PUMP SERVICE ACCESS:</p> <p>a. One (1) removable pump service access panel shall be installed in rear wall of the R1 compartment.</p> <p>25. 2 ½" DISCHARGE PIPING:</p> <p>a. There shall be two (2) 2 ½" discharges shall be located on the left side of the apparatus. The discharge valves shall be located behind the body panels and are to be controlled from the pump operator's panel. Each shall include a self-locking 2½" quarter-turn ball valve, a 2½" chrome cap with chain, and a sweep elbow of at least 30 degrees downward.</p>		

	Bidder Complies	
	Yes	No
<p>b. Each above valve shall be manually controlled.</p> <p>26. 2 ½" DISCHARGE, APPARATUS REAR:</p> <p>a. Two (2) 2½" discharge shall be located on the rear of the apparatus. Each discharge shall be controlled from the side control pump operator's panel. Each shall include a self-locking 2½" quarter-turn ball valve, a 2½" chrome cap with chain, and a sweep elbow of at least 30 degrees downward.</p> <p>b. Each above valve shall be manually controlled.</p> <p>c. LOCATION: Right Side</p> <p>27. TANK TO PUMP LINE:</p> <p>a. One (1) 3" tank to pump line shall be installed into the tank to the suction side of the pump. It shall have 4" piping and valved with a 3" full flow valve. The valve shall be controlled from the pump operator's panel. The tank line shall incorporate a check valve in the line to meet NFPA 1901.</p> <p>28. REAR SUCTION:</p> <p>a. One (1) 5" suction shall be located at the apparatus rear. It shall be piped with 5" butterfly valve, adapted as described below. An inlet screen and a long handle cap shall be included. The operator has an "Open/Closed" indicator device showing the valve position at all times. The butterfly valve shall be made of lightweight aluminum alloy with a bronze valve disc and one (1) piece rubber seat. It shall be rated at 250 psi. working pressure. The electric actuator shall have a worm gear drive system with emergency manual override. All of the controls shall be within a single panel mountable package, which utilizes current limiting for fully open and closed stopping. There shall be no switches in the gear actuator housing.</p> <p>29. INTAKE RELIEF VALVE:</p> <p>a. One (1) TFT A1860 intake relief valve shall be installed on the auxiliary intake of the pump. The minimum range shall permit control from 75 to 250 psi. (per NFPA 4-5.1).</p> <p>30. One (1) 5" NPTF x 6" NSTM with screen, chrome plated.</p> <p>31. ONE (1) 6" NST LONG HANDLE X 4" STORTZ WITH BLIND CAP</p> <p>32. MATTYDALE PRECONNECT MODULE - (1) 1½" AND (1) 2½":</p> <p>a. One (1) preconnect system shall be located at the front of the midship walkway directly behind the chassis cab, above the frame rails. The module shall be manufactured of stainless-steel</p>		

	Bidder Complies	
	Yes	No
<p>material, self-supported, and shall incorporate two (2) deep cut single lay preconnect hose beds. On each side of the module, outboard of the frame rails, an area shall be provided to facilitate nozzle storage. Each nozzle shall be retained in the storage area behind the preconnect cover.</p> <p>b. One (1) 1½" preconnect shall be provided in the module. The preconnect shall incorporate a 1½", 180° Elkhart 348 swivel adapted to 1½" fire hose thread. The waterways shall be 2" i.d. and include a 2" full flow quarter turn ball valve that is controlled from the operator's panel (NFPA 4-7.2).</p> <p>c. The 1½" preconnect shall have the capacity to contain a minimum of 200 ft. of 1¾" hose with nozzle. The preconnect shall be designed as to allow the extension of hose to the left or right side of the apparatus body.</p> <p>d. One (1) 2½" Mattydale preconnect shall be provided in the module. The preconnect shall include a 3" full flow waterway and a 2½" full flow quarter turn ball valve that is remote controlled from the operator's location.</p> <p>e. The 2½" preconnect shall have the capacity to contain a minimum of 200 ft. of 2½" hose. The Mattydale preconnect shall be designed to allow the extension of hose to the left or right side of the apparatus body.</p> <p>f. Each above valve shall be manually controlled.</p> <p>33. MATTYDALE PRECONNECT COVER - HYPALON:</p> <p>a. The Mattydale preconnect area shall be covered with a fire and chemical resistant material. It is to be retained to the apparatus with a shock cord and nylon clip system.</p> <p>b. The Hypalon cover shall be red in color.</p> <p>34. TANK FILL RECYCLE:</p> <p>a. One (1) 2" waterway shall be incorporated from the pressure side of the pump to the tank. The line shall be controlled from the pump panel and valved with a 2" ball valve to allow a pump cooling recycle or tank fill when pumping from draft. When fully opened, it shall have the capacity to refill the tank at 750 gpm when pumping at 100 psi.</p> <p>35. VALVING:</p> <p>a. Each and every apparatus valve must be an Akron Stainless Steel Ball Valve, per the following specifications.</p> <p>b. An Akron Brass Generation II Swing-Out™ Valve, shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve body shall be of universal design and accept multiple actuators. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The stainless-steel ball shall</p>		

	Bidder Complies	
	Yes	No
<p>have HydroMax™ technology. All stainless-steel parts must be 316 grade for increased resistance to corrosion. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be compatible with a slow closing devise. This valve shall be actuated using a manual handle. The handle shall be quickly adjustable to one of eight handle positions and require only 90° travel. The valve shall be manufactured and assembled in the United States. Product must carry a 10-year manufacturer's warranty.</p> <p>36. PIPING:</p> <p>a. All waterways described herein shall be of schedule 40 threaded stainless steel pipe, schedule 40 welded stainless steel. Each shall be installed with the proper couplings to allow apparatus twisting, flexing, and complete removal for service or replacement.</p> <p>37. PIPING CERTIFICATION:</p> <p>a. Upon final apparatus delivery, a certification sheet shall accompany the unit stating that all piping and the pump have been hydrostatically tested to 250 psi.</p> <p>XVI. BODY</p> <p>1. STAINLESS STEEL BODY OR EQUIVALENT: NO POLY BODY WILL BE EXCEPTED</p> <p>a. The Stainless Steel body system is a lightweight, corrosion-resistant body designed for emergency service application. The body is manufactured of 304 #4 finish stainless steel to give the product superior strength and dependability. The unit is designed with a 84" cab to axle to provide excellent maneuverability and flexibility.</p> <p>2. BODY</p> <p>a. The body shall be constructed of 14 gauge 304 #4 finish stainless steel for dependability in the application of rapid intervention.</p> <p>b. An independent custom structural stainless-steel sub-frame supports the body. The sub-frame floats independent of the chassis frame.</p> <p>c. The subframe is designed for emergency service application by using stainless steel structural tubing. It provides each compartment with total support to prevent the body from prematurely cracking under the extreme conditions common to the emergency service field.</p> <p>d. The body is held in position by the U-Bolt method recommended and approved by the chassis manufacturer.</p> <p>3. FRONT BODY PANELS:</p>		

	Bidder Complies	
	Yes	No
<p>a. The front of the body is manufactured of 14 gauge 304 #4 finish stainless steel</p> <p>4. REAR BODY PANELS:</p> <p>a. The rear of the body is manufactured of 14 gauge 304 #4 finish stainless steel for ease of maintenance.</p> <p>5. ROOF OF THE APPARATUS:</p> <p>a. The roof area of the apparatus body shall be manufactured of 304 #4 finish stainless steel material. The material shall break over the sides 2".</p> <p>6. STAINLESS STEEL WHEEL WELLS:</p> <p>a. The rear wheel housing shall be constructed of 304 #4 finish stainless steel material, which shall incorporate a polished stainless steel fenderette. The circular inner liner shall be manufactured of 3/16" polymer material.</p> <p>b. The wheel well shall be a bolt in wheel well assembly for ease of maintenance in the apparatus.</p> <p>c. The polymer material is a chemical and corrosion resistant material, thereby preventing excess wear and corrosion from occurring due to wintertime road chemicals. The polymer material shall be held in place by the use of polymer retainers or bolts for ease of repair and access to the wheel well area.</p> <p>7. TAILSTEP:</p> <p>a. The tailstep shall be constructed of 12-gauge star punched stainless steel material. The material meets NFPA standard 13-7.3: all exterior surfaces have a minimum slip resistance of .68.</p> <p>b. The tailstep shall be 8" deep.</p> <p>8. FENDERETTE FINISH - BLACK FINISH:</p> <p>a. The body fenderettes shall be coated in black reflex material</p> <p>9. REAR TOW EYES:</p> <p>a. Two (2) ¾" thick steel tow eyes shall be securely fastened to the rear frame rails, one (1) each side.</p> <p>10. TIE-OFF POINTS LEFT & RIGHT SIDE:</p> <p>a. Two (2) hitch receiver assemblies shall be incorporated on the apparatus, with one (1) on each side behind the rear wheels under the body. Each hitch assembly shall utilize 2.0" square tubing.</p>		

	Bidder Complies	
	Yes	No
<p>b. 12-volt electrical connections for a portable winch shall be provided.</p> <p>11. AIR BOTTLE COMPARTMENT:</p> <p>a. Two (2) Model 101252-1X air bottle storage compartment(s) shall be located in the apparatus wheel well assemblies. For ease of access, each bottle shall be stored within an individual storage tube manufactured of poly material. The compartment shall incorporate a vertically hinged stainless steel door with a black push button latch. Each compartment shall have the capacity to carry one (1) air bottle.</p> <p>b. LOCATION: One (1) Each Side</p> <p>12. HOSE BED:</p> <p>a. The hose bed shall be located over the booster tank and must be accessible from the tail step and from its open top. The hose bed compartment shall have a minimum capacity of 22 cu. ft. and a minimum width of 48".</p> <p>b. The hose bed shall have the capacity to carry the following hose:</p> <p>i. 500' of 4" LDH Hose</p> <p>ii. 600' of 2½" Double Jacket Hose</p> <p>iii. 100' of 1¾" Double Jacket Hose</p> <p>13. HOSE BED DIVIDERS:</p> <p>a. Two (2) dividers shall be located in the hose bed. They shall be constructed of 3/16" aluminum plate. The dividers shall be designed for future adjustability with locking blocks in aluminum channels at the front and the rear of the hose bed.</p> <p>14. HOSE BED COVER:</p> <p>a. One (1) custom tailored 22 oz. Hypalon hose bed cover shall be included with the apparatus body. It shall be manufactured of a flame-retardant material with a grab tensile of 480 x 500 lbs. and a tongue tear of 160 x 150 lbs. It shall be crack resistant to -40° Fahrenheit and have an adhesion lbs./in of 10.0 lbs. The hose bed cover shall be fitted to the hose bed and retained with a double woven shock cord on the front and both sides. The shock cord system shall utilize nylon hooks spaced every 10"-12". The cover shall be sand weighted across the rear flap and shall also include two (2) 2" wide nylon straps with Teflon buckle to meet NFPA requirements.</p>		

	Bidder Complies	
	Yes	No
<p>b. The hosebed cover shall include a 3-year warranty.</p> <p>c. The end flap shall include reflexite striping in a chevron pattern. The striping shall alternate red and fluorescent lime yellow in color.</p> <p>d. The end flap shall feature sewn in lettering centered on the rear flap. The lettering shall be white reflective material (maximum 8 characters.)</p> <p>e. The Hypalon cover shall be red in color.</p> <p>XVII. COMPARTMENTATION</p> <p>1. COMPARTMENT DESIGN:</p> <p>a. The compartmentation shall be fabricated of bolted 14-gauge 304 stainless steel walls and 12 gauge 304 stainless steel floors. The compartmentation is designed to be an intricate part of the body and subframe for maximum compartment support. The compartment tops shall be fabricated of smooth stainless-steel material and shall meet the intent of the latest edition of NFPA 15.7 regarding stepping, standing, and walking surfaces. The material shall be formed over each compartment top to act as drip protection over each compartment opening. The compartment flooring will be sweep out design. The front and rear corners of the body shall remain natural finish #4 stainless steel. The material be full height and shall wrap around each corner to the compartment door frame.</p> <p>b. The specified lighting in each compartment shall be switched automatically with the doors. The lighting shall meet the requirements of NFPA 13.10.5</p> <p>2. PAINTED ROLL-UP DOORS:</p> <p>a. The side compartments shall have ROM Series IV Roll-up Shutter Doors with a painted finish. The doors shall be made of an anodized aluminum slat incorporating an exclusive seal that prohibits water intrusion, absorbs shock, eliminates clatter, and provides quiet, vibration-free performance. The lift bar shall be a D-shaped bar for strength and ease of use.</p> <p>b. The rear compartment shall have ROM Series IV Roll-up Shutter Door with a satin finish. The door shall be made of an anodized aluminum slat incorporating an exclusive seal that prohibits water intrusion, absorbs shock, eliminates clatter, and provides quiet, vibration-free performance. The lift bar shall be a D-shaped bar for strength and ease of use.</p> <p>3. DOOR GUARD:</p> <p>a. There shall be a .125" aluminum treadplate door guard located at the top of the compartment to protect the painted surface of the ROM door from damage while the door is open. The door opening height as stated will be reduced by approximately 2" to accommodate the door guard.</p> <p>4. TALL BOTTOM RAIL:</p>		

	Bidder Complies	
	Yes	No
<p>a. Each ROM door shall incorporate a tall bottom rail for improved accessibility.</p> <p>b. The roll-up door sidetracks, and top drip rail shall remain satin finish.</p> <p>5. LEFT SIDE:</p> <p>a. Compartment L1</p> <ul style="list-style-type: none"> i. A roll-up door compartment assembly with a door opening of 19" wide x 50" high x 21" deep shall be provided ahead of the rear wheels on the left side. ii. The compartment shall include the following: iii. Unistrut Tracking iv. One (1) full depth adjustable shelf v. LED Krystal-Lite tube lighting to illuminate the entire area. The lights shall run the entire height of the compartment on each side of the door opening. <p>b. Compartment L2</p> <ul style="list-style-type: none"> i. A roll-up door compartment assembly with a door opening of 41" wide x 27" high x 21" deep shall be provided over the rear wheels on the left side. ii. The compartment shall include the following: iii. Unistrut Tracking iv. One (1) hinged PACTRAC tool board. v. LED Krystal-Lite tube lighting to illuminate the entire area. The lights shall run the entire height of the compartment on each side of the door opening. <p>c. Compartment L3</p> <ul style="list-style-type: none"> i. A roll-up door compartment assembly with a door opening of 40" wide x 50" high x 21" deep shall be provided behind the rear wheels on the left side. ii. The compartment shall include the following: <ul style="list-style-type: none"> a) Unistrut Tracking b) One (1) up to 21" deep Roll Out Drop-Down Tray c) Each above roll out tray shall be stationary. 		

	Bidder Complies	
	Yes	No
<p>d) One (1) up to 21" Deep 250 # Roll Out Tray</p> <p>e) Each above roll out tray shall be stationary.</p> <p>f) One (1) additional up to 21" Deep 250 # Roll Out Tray</p> <p>g) Each above roll out tray shall be stationary.</p> <p>6. RETENTION SYSTEM FOR FLOWHARD FAN:</p> <p>a. One (1) Blowhard fan shall be mounted L3 compartment. The fan shall be mounted vertically and retained with a strap system.</p> <p>b. LED Krystal-Lite tube lighting to illuminate the entire area. The lights shall run the entire height of the compartment on each side of the door opening.</p> <p>7. RIGHT SIDE:</p> <p>a. Compartment R1</p> <p>i. A roll-up door compartment assembly with a door opening of 28"/26" wide x 48" high x 21" deep shall be incorporated on the apparatus right side ahead of the rear wheels.</p> <p>ii. The compartment shall include the following:</p> <p>iii. Horizontal Unistrut Tracking on the floor/ceiling or rear wall</p> <p>iv. Unistrut Tracking</p> <p>v. One (1) full depth adjustable shelf</p> <p>vi. Two (2) Flame Fighter walk-away air pack brackets.</p> <p>b. DROP DOWN DOOR AND STEP:</p> <p>i. The compartment shall incorporate a drop door/step at the bottom. The lower 18" of the door opening shall incorporate a treadplate pan style door with stainless steel hinge and cable retention. When in the up position, the roll-up door shall close at the top of the step. When in the down position, the door shall serve as a step for ease of access to the Mattydale preconnect hose beds. The door shall be designed in a manner that maintains the 21" compartment depth.</p> <p>ii. The step shall match treadplate on the inside match the apparatus on the outside</p> <p>iii. LED Krystal-Lite tube lighting to illuminate the entire area. The lights shall run the entire height of the compartment on each side of the door opening.</p>		

	Bidder Complies	
	Yes	No
<p>c. Compartment R2</p> <ul style="list-style-type: none"> i. A roll-up door compartment assembly with a door opening of 19" wide x 50" high x 21" deep shall be provided ahead of the rear wheels on the right side. ii. The compartment shall include the following: iii. Unistrut Tracking iv. One (1) up to 21" Deep 250 # Roll Out Tray v. Each above roll out tray shall be stationary. vi. One (1) additional up to 21" Deep 250 # Roll Out Tray vii. Each above roll out tray shall be stationary. viii. LED Krystal-Lite tube lighting to illuminate the entire area. The lights shall run the entire height of the compartment on each side of the door opening. <p>d. Compartment R3</p> <ul style="list-style-type: none"> i. A roll-up door compartment assembly with a door opening of 41" wide x 27" high x 21" deep shall be incorporated on the apparatus right over the rear wheels. ii. The compartment shall include the following: <ul style="list-style-type: none"> a) Four (4) extinguisher brackets shall be mounted in the compartment, two (2) on the front wall and two (2) on the rear wall of the compartment. b) The extinguishers shall be mounted with vehicular heavy-duty rubber strap extinguisher brackets. PART NUMBER 811 c) LED Krystal-Lite tube lighting to illuminate the entire area. The lights shall run the entire height of the compartment on each side of the door opening. <p>e. Compartment R4</p> <ul style="list-style-type: none"> i. A roll-up door compartment assembly with a door opening of 40" wide x 50" high x 21" deep shall be provided behind the rear wheels on the right side. ii. The compartment shall include the following: <ul style="list-style-type: none"> a) Unistrut Tracking b) One (1) full depth adjustable shelf c) One (1) up to 21" Deep 250 # Roll Out Tray 		

	Bidder Complies	
	Yes	No
<p>d) Each above roll out tray shall be stationary.</p> <p>e) One (1) additional up to 21" Deep 250 # Roll Out Tray</p> <p>f) Each above roll out tray shall be stationary.</p> <p>g) LED Krystal-Lite tube lighting to illuminate the entire area. The lights shall run the entire height of the compartment on each side of the door opening.</p> <p>f. REAR COMPARTMENT SHALL BE AS FOLLOWS</p> <p>i. A roll-up door compartment assembly with a door opening of 32" wide x 20" high x 35" deep shall be located at the rear of the apparatus.</p> <p>ii. One (1) 500 # Roll Out Tray</p> <p>g. MOUNTING OF HURST COMBI TOOL:</p> <p>i. The new Hurst Combi tool shall be mounted on the pull-out tray. The charger system shall be mounted on the rear wall of the compartment adjacent to the power strip for the additional Hurst batteries.</p> <p>ii. LED Krystal-Lite tube lighting to illuminate the entire area. The lights shall run the entire height of the compartment on each side of the door opening.</p> <p>h. RUB RAILS:</p> <p>i. Bolt on aluminum rub rails shall be installed, below the compartment doors. Said rub rails will be fabricated of a polished "C" channel aluminum, mounted to the body surface utilizing ¼" plastic spacers. The channel designed rub rail shall incorporate a highly reflective red and fluorescent yellow green reflective stripe to aid in apparatus protection.</p> <p>ii. The rub rails shall incorporate the LED ground lights and LED lower warning lights. Each light strip shall run the full length of each rub rail.</p> <p>i. DURATILE TILE ON FLOOR:</p> <p>i. The floor of each main body compartment shall be covered with black Duratile Tile.</p> <p>j. DURATILE TILE ON SHELVING:</p> <p>i. The shelves and/or trays in each compartment shall be covered with black Duratile Tile.</p> <p>k. VERTICAL UNISTRUT IN COMPARTMENT:</p>		

	Bidder Complies	
	Yes	No
<p>i. The Unistrut tracking as previously specified shall be vertically installed on the compartment walls for use with adjustable shelving. The tracking will allow the shelving to be adjustable to height with an eight (8) bolt lock. The tracking shall be installed from the floor of the compartment to approximately 4" below the ceiling of the compartment, allowing full height adjustability.</p> <p>I. ADJUSTABLE SHELVING:</p> <p>i. The adjustable shelving as previously specified shall be installed in the apparatus compartmentation, utilizing the Unistrut tracking. Each shelf shall be manufactured in a "U" break design, with 2" lip on front and rear of shelf. Each shelf shall be manufactured from a .190 material.</p> <p>m. ROLL OUT TRAY:</p> <p>i. The roll-out tray as previously specified shall be up to 21" deep and manufactured of 3/16" (.1875") smooth aluminum. Each tray shall utilize Grant slides, have a capacity of 250 lb., and shall have a lock to secure the tray in the stowed and extended position. Each roll-out tray shall incorporate a highly reflective red and white stripe on all three (3) exposed sides to aid in apparatus protection.</p> <p>n. ROLL OUT TRAY:</p> <p>i. The roll out tray(s) in the rear compartment as previously specified shall be manufactured of 3/16" (.1875") smooth aluminum. Each tray shall utilize Accuride Zinc slides and have a capacity of 500 lb. of distributed load. Each tray shall be capable of 100% extension and shall have a lift bar latching system across the full width at the front of the tray to secure the tray in the stowed and extended position. Each roll-out tray shall incorporate a highly reflective red and white stripe on all three (3) exposed sides to aid in apparatus protection.</p> <p>o. HINGED TOOL BOARDS:</p> <p>i. One (1) hinged PAC TRAC SO74-350 tool board shall be provided in the specified compartment. The tool board shall be feature dual sided PAC TRAC. Each board shall be up to 17" high x 50" wide. The hinge and lock assembly shall utilize PAC PM1000 components. Each board shall lock in the stowed and open position and incorporate a highly reflective red and fluorescent yellow reflective stripe on both sides to aid in apparatus protection.</p> <p>p. PAC MOUNTS FOR PAC BOARD</p> <p>i. An allowance will be given to the customer for mounts on the mounted PAC board system</p> <p>XVIII. TANK</p> <p>1. BOOSTER TANK:</p>		

	Bidder Complies	
	Yes	No
<p>a. The tank shall have a capacity of 300 US gallons complete with a lifetime warranty. The tank manufacturer shall mark the tank and furnish notice that indicates proof of warranty. The purpose of the markings and notice is to inform District personnel who store, stock, or use the tank that the unit is under warranty. Markings may be brief but should include a short statement that a warranty exists, the substance of the warranty, its duration, and who to notify if the tank is found to be defective.</p> <p>b. The tank shall be constructed of ½" thick PT2E polypropylene sheet stock. This material shall be non- corrosive stress relieved thermo-plastic and U.V. stabilized for maximum protection.</p> <p>c. The booster tank shall be of a specific configuration and so designed to be completely independent of the body and compartments. All joints and seams shall be nitrogen welded and tested for maximum strength and integrity. The top of the booster tank is removable. The transverse swash partitions shall be manufactured of 3/8" PT2E polypropylene (natural in color) and extend from approximately 4" off the floor to just under the cover. The longitudinal swash partitions shall be constructed of 3/8" PT2E polypropylene (natural in color) and extend from the floor of the tank through the cover to allow for positive welding and maximum integrity. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow. All swash partitions interlock with one another and are welded to each other as well as to the walls of the tank.</p> <p>2. FILL TOWER AND COVER</p> <p>a. The tank will have a combination vent and manual fill tower. The fill tower will be constructed of ½" PT2E polypropylene and shall be a minimum dimension of 8" x 8" outer perimeter. The tower will be located in the left front corner of the tank. The tower will have a ¼" thick removable polypropylene screen and a PT2E polypropylene hinged type cover. Inside the fill tower, approximately 4" down from the top, shall be fastened a combination vent overflow pipe. The vent overflow shall be a minimum of schedule 40 polypropylene pipe with a minimum I.D. of 4" that is designed to run through the tank and shall be piped behind the rear wheels.</p> <p>b. The tank cover is constructed of ½" thick PT2E polypropylene and UV stabilized, to incorporate a multi three-piece design which allows for individual removal and inspection if necessary. The tank cover will be recessed 3/8" from the top of the tank and shall be welded to both sides and longitudinal partitions for maximum integrity. Each one of the three covers will have hold-downs consisting of 2" polypropylene dowels spaced a maximum of 30" apart. These dowels will extend through the covers and be welded to the transverse partitions. This will assist in keeping the cover rigid under fast filling conditions. A minimum of two (2) lifting dowels shall be drilled and tapped ½" x 13" to accommodate the lifting eyes.</p> <p>3. SUMP</p>		

	Bidder Complies	
	Yes	No
<p>a. There will be one (1) sump standard per tank. The sump shall be constructed of ½" PT2E polypropylene and be located in the left front quarter of the tank. The sump will have a minimum 3" NPT threaded outlet on the bottom for a drain plug. This shall be used as a combination cleanout and drain. All tanks shall have an anti-swirl plate located approximately 2" above the sump.</p>		
<p>4. OUTLETS</p> <p>a. There will be two (2) standard tank outlets: one for the tank to pump suction line which will be a minimum of a 3" NPT coupling and one for a tank fill line which will be a minimum of a 2" NPT coupling. All tank fill couplings will be backed with flow deflectors to break up the stream of water entering the tank and be capable of withstanding sustained fill rates of up to 1000 GPM. All auxiliary outlets and inlets must meet all NFPA guidelines in effect at the time of manufacture.</p>		
<p>5. MOUNTING</p> <p>a. The poly tank shall rest on the body cross members with an unsupported area not to exceed 530 sq. inches on tanks up to 40" in height. On tanks over 40" in height, an unsupported area of not more than 400 sq. inches must be maintained. All tanks shall be isolated from the cross members through the use of hard rubber strips with, a minimum thickness and width dimension of .250 x 2" and a minimum Rockwell hardness of 60 durometer. Additionally, the tank must be supported around the entire bottom outside perimeter and captured both front and rear as well as side to side to prevent the tank from shifting during vehicle operation. A picture frame type cradle mount shall be utilized with a minimum of 2" x 2" x .250 structural material.</p> <p>b. Although the tank is designed on the free-floating suspension principle, it shall be required that the tank have hold down restraints halfway between the front and the rear of the tank. These restraints shall be made of 3" x 3" x ¼" angle approximately 6" long. The restraints shall be mounted to the side walls of the hose bed and extend down so that they rest approximately ½" above the top of the tank. The tank shall be completely removable without disturbing or dismantling the apparatus structure.</p> <p>c. Upon final apparatus delivery, proper evidence and certifications shall be presented indicating the tank has the capacity of flow to the pump 80% of its rated capacity at a flow rate of 300 GPM.</p>		
<p>XIX. 12 VOLT ELECTRICAL SYSTEM</p> <p>1. SYSTEM</p> <p>a. The 12-volt apparatus wiring shall be completely independent of the chassis electrical system. The system shall incorporate a state-of-the-art electrical distribution center. The</p>		

	Bidder Complies	
	Yes	No
<p>center shall include a microprocessor, automatic reset circuit breakers, and switching relays.</p> <p>b. The microprocessors are housed in a weather resistant enclosure. All processors are fully tested, and modern production processes guarantee long-term reliability in the most rigorous environments. The microprocessors handle the numerous switching functions without the excessive use of relays and the need for excess wiring.</p> <p>c. The system can be expanded by adding additional processors and required components to meet desired specifications.</p> <p>d. The weather tight modular service center shall be placed in a water-tight compartment in the apparatus body. The service center housing shall be manufactured of aluminum and shall incorporate an access door. Since the microprocessor is of weather resistant design and enclosed in the service center, the electrical system has redundant protection against moisture and corrosion. Redundant protection from the elements dramatically improves reliability and durability.</p> <p>e. Wiring harnesses shall be custom made for each truck. Each harness shall be encased in a split barrel, nylon type loom which will be moisture resistant and flame resistant to a minimum of 280° F. Loop outs shall be made at the harness factory utilizing sealed sonic weld technology instead of open-ended butt splicing. The harnesses shall feature Deutsch heavy duty all metal connectors.</p> <p>f. Unlike terminal strips, binding post and other open-wiring systems, the Deutsch HD series is a completely sealed unit. The elimination of open wiring systems does away with contamination from moisture, dust, lubricating oils, road salt, and other environmental hazards encountered in heavy duty use. The connector shall provide a multiple keying system that positively prevents mis-mating and makes plug/receptacle coupling quick and easy. The modular harness system will allow for quick and efficient complete body transfer if needed.</p> <p>g. An independent switching station shall be centrally located in the apparatus cab. The switches shall be of a rocker type illuminating design. Each switch shall be color coded, and include a description indicating its intended use. Each switch shall be removable for service and replacement. Each switch shall be rated at 10 amp at 250 volts AC and shall act as inputs for the microprocessor.</p> <p>h. All electrical circuit feeder wiring supplied and installed by the apparatus manufacturer shall be stranded copper alloy conductors of a gauge rated to carry 125% of the maximum current for which the circuit is protected. Insulation shall be in accordance with SAE J1128, low tension primary cable, type SXL or GXL, and wired to SAE J1292, automobile, truck, truck-tractor, trailer, and motor coach wiring, for such loading at the potential employed. Voltage drops in all wiring from the power source to the using device shall not exceed 10%. Overall covering of conductors shall be 280° F (143° C) minimum flame retardant, moisture resistant loom or braid. All connections shall be made with lugs or terminals mechanically secured to the conductors. Wiring shall be thoroughly secured in place and suitably</p>		

	Bidder Complies	
	Yes	No
<p>protected against heat, oil, and physical damage. Wiring shall be color coded and printed with a circuit function code over each conductor's entire length.</p> <p>i. Circuits shall be provided with properly rated low voltage over-current protective devices. Such devices shall be readily accessible and protected against excessive heat, physical damage and water spray, switches relays, terminals, and connectors shall have a direct current rating of 125% of maximum current for which the circuit is protected.</p> <p>j. Wiring Diagrams: Two (2) destination effective wiring diagrams shall be furnished with the apparatus. The wiring diagrams shall incorporate notations to assist an individual with limited electrical experience in the service of the apparatus electrical system.</p> <p>k. NOTE: All wiring and components shall meet or exceed current N.F.P.A. codes.</p> <p>2. LOAD MANAGEMENT:</p> <p>a. The 12-volt load management functions shall be incorporated within the microprocessor based 12-volt electrical system without the need for a separate load manager.</p> <p>3. ELECTRICAL SYSTEM PERFORMANCE TESTS:</p> <p>a. The apparatus low voltage electrical system shall be tested and certified per the current NFPA standard. The certification shall be delivered to the purchaser with the apparatus.</p> <p>4. DOCUMENTATION:</p> <p>a. At the time of delivery, the manufacturer shall provide the following:</p> <p>b. Documentation of the electrical system performance tests;</p> <p>c. A written load analysis, including:</p> <ul style="list-style-type: none"> i. The nameplate rating of the alternator ii. The alternator rating iii. Each component load comprising the minimum continuous load iv. Additional loads that, when added to the minimum continuous load, determine the total connected load v. Each individual intermittent load <p>5. BATTERY CHARGER/AIR COMPRESSOR:</p> <p>a. One (1) Progressive Dynamics PD2140 battery charger shall be installed on the vehicle. The unit shall be located in the L1 compartment.</p> <p>b. The PD2140 is a 40-amp Electronic Marine Converter/Charger capable of charging up to three separate banks of batteries at the same time. It incorporates a microprocessor that constantly monitors battery voltage, then automatically selects one of four operating modes to ensure safe, rapid recharging cycles. The Storage Mode and the Equalize Mode of operation ensures minimum battery gassing and water loss while preventing battery stratification and sulfation. All Intelli-Power chargers are designed to meet the stringent</p>		

	Bidder Complies	
	Yes	No
<p>requirements of the Marine environment and are UL listed for safety. A digital meter displays current, voltage, operation mode, blown fuse indication, and battery type.</p> <p>c. One (1) Viair Model 460C air compressor shall be installed on the vehicle. The air compressor is a fully automatic system which is powered from the chassis battery bank through the PD2140 charger system.</p> <p>d. The Viair compressor shall supply air to facilitate the air pump shift. The compressor shall be plumbed to one (1) manufacturer supplied auxiliary air tank.</p> <p>6. KUSSMAUL SUPER AUTO EJECT SHORELINE CONNECTION - 120V:</p> <p>a. One (1) Kussmaul super auto eject Model 091-55-20-120 with a RED weather cover shall be installed on the apparatus. The super auto eject is a completely sealed automatic power line disconnect. One (1) 120-Volt shoreline shall be supplied between the fire station power and the apparatus.</p> <p>b. The shoreline connection shall be located in the left rear wheel well area, ahead of the wheels.</p> <p>7. MASTER SWITCH:</p> <p>a. A 12 Volt On/Off Rocker switch shall be installed. When in the OFF position, the master switch system shall isolate all electrical power from the apparatus. It shall not interrupt any primary battery/starter wiring originally furnished by the chassis manufacturer.</p> <p>8. EMERGENCY WARNING SWITCH:</p> <p>a. There shall be an emergency warning switch installed on the unit. The entire warning system shall be activated by a single switch.</p> <p>9. FLOOR MOUNTED CONSOLE FOR EMERGENCY SWITCHES:</p> <p>a. One (1) 12-volt floor mounted console shall be installed in the apparatus. The console shall be manufactured of 14 gauge 304 #4 finish stainless steel material and shall incorporate a #4 finish smooth stainless-steel top. The top of the console shall be hinged for access to the internal electrical components.</p> <p>10. MAP/BINDER STORAGE:</p> <p>a. There shall be a map/binder storage area incorporated into the console at the rear. The storage area shall incorporate one (1) divider, providing two (2) slots for map/binder storage.</p> <p>11. RADIO:</p> <p>a. Radio(s) shall be installed by the customer after receipt of the completed apparatus.</p> <p>b. A dedicated 12-volt power circuit shall be provided for radio(s) in the console and tagged</p>		

	Bidder Complies	
	Yes	No
<p>12. TIRE PRESSURE MONITORING DEVICE:</p> <ul style="list-style-type: none"> a. One (1) set of Real Wheels LED Air Guard tire pressure indicators shall be shipped loose with the completed apparatus. Features and benefits of the LED Air Guards include b. Safety – Improper tire pressure has a detrimental effect on handling, braking and control. c. Longer Tire Life – According to the D.O.T., 95% of all premature tire wear is caused by underinflation. d. Self-calibrating – LED Air Guard Set & Go memorizes pressure when initially installed and can be easily recalibrated by simply removing and reinstalling. e. Improved Fuel Economy – Proper tire inflation can save an estimated 3% to 5% in fuel costs. <p>13. CHASSIS HIGH IDLE:</p> <ul style="list-style-type: none"> a. The Ford chassis shall incorporate a high idle system installed by the apparatus manufacturer. The high idle system shall utilize the chassis PCM to increase the engine RPM and shall be controlled by a single switch in the chassis cab. The high idle system shall be interlocked to the park brake, service brake, park (automatic transmissions) or the clutch (manual transmissions). <p>14. LED HEADLIGHTS:</p> <ul style="list-style-type: none"> a. The headlights shall be converted from halogen to an LED headlight system. <p>15. CUSTOMER SUPPLIED KNOX BOX:</p> <ul style="list-style-type: none"> a. One (1) customer supplied Knox Box shall be installed in the chassis cab. The customer will supply the Knox box system. <p>16. OPTICAL WARNING SYSTEM:</p> <ul style="list-style-type: none"> a. The optical warning system on the fire apparatus shall be capable of two separate signaling modes during emergency operations. One mode shall signal to drivers and pedestrians that the apparatus is responding to an emergency and is calling for the right-of-way. The other mode shall signal that the apparatus is stopped and is blocking the right-of-way. <p>17. EMERGENCY WARNING LIGHTS:</p> <ul style="list-style-type: none"> a. For the purpose of defining and measuring the required optical performance, the apparatus shall be divided into four warning zones. The four zones shall be determined by drawing lines through the geometric center of the apparatus at 45° to a line lengthwise of the apparatus through the geometric center. The four zones shall be designated A, B, C, and 		

	Bidder Complies	
	Yes	No
<p>D in a clockwise direction with zone A to the front of the apparatus. Each zone shall have an upper and lower warning level.</p> <p>b. Effective coverage of all four zones, both upper and lower, as required by the latest NFPA Edition shall be provided.</p> <p>18. LED LIGHTBAR:</p> <p>a. One (1) Whelen Model F4N2VLED 55" LED lightbar shall be mounted on the cab roof. The lightbar shall be switched from the in-cab switch panel. This lightbar fills the requirements of Zone A Upper, Zone B Upper, and Zone D Upper.</p> <p>19. OPTICOM 795H STROBE LIGHTS</p> <p>a. One (1) GTT Opticom 792H HIGH PRIORITY shall be installed in the lightbar. The Opticom shall be switched independent of the light bar.</p> <p>20. WARNING LIGHTS (FRONT):</p> <p>a. One (1) Whelen Model 50G02ZGR Green right and one (1) Whelen Model 50R02ZRR Red Super Linear LED lights shall be mounted on the front cab grill, one (1) on each side. These lights shall be switched from the in-cab switch panel. These lights fill the requirements of Zone A Lower.</p> <p>21. WARNING LIGHTS (FRONT):</p> <p>a. Two (2) Whelen Model 90RR5FRR red Super Linear LED lights shall be mounted on the front cab face, one (1) on each side. These lights shall be switched from the in-cab switch panel. These lights fill the requirements of Zone A Upper.</p> <p>22. WARNING LIGHTS (SIDE):</p> <p>a. One (1) Whelen Model 50R02ZRR Red LED lights shall be mounted on the right (officer's) side of the vehicle. These lights are placed inside chrome flanges. These lights shall be switched from the in-cab switch panel. These lights fill the requirements of Zone B Lower.</p> <p>b. One (1) Whelen Model 50R02ZRR Red LED lights shall be mounted on the left (driver's) side of the vehicle. These lights are placed inside chrome flanges. These lights shall be switched from the in-cab switch panel. These lights fill the requirements of Zone D Lower.</p> <p>c. The rub rails on each side of the body shall incorporate integral outward facing Red LED strip lights. In addition to the Red LED strip light, the rub rail on each side ahead of the rear wheels shall incorporate one (1) Whelen Model MCRNTRR Red Micron LED light. These lights shall be switched from the in-cab switch panel.</p> <p>23. WARNING LIGHTS (SIDE):</p>		

	Bidder Complies	
	Yes	No
<p>a. Two (2) Whelen Model 90RR5FRR Red Super Linear LED lights shall be mounted on the right (officer's) side of the vehicle, in the upper area. These lights shall be switched from the in-cab switch panel.</p> <p>b. Two (2) Whelen Model 90RR5FRR Red Super Linear LED lights shall be mounted on the left (driver's) side of the vehicle, in the upper area. These lights shall be switched from the in-cab switch panel.</p> <p>c. These lights fill the requirements of Zones B & D Upper.</p> <p>24. WARNING LIGHTS (REAR UPPER):</p> <p>a. Two (2) Whelen Model 90RR5FRR Red Super Linear LED lights shall be mounted on the rear of the vehicle, in the upper area. The lights shall be switched from the in-cab switch panel. These lights fill the requirements of Zone C Upper.</p> <p>25. WARNING LIGHTS (REAR):</p> <p>a. Two (2) Whelen Model 60B02FBR Blue Super Linear LED lights shall be mounted on the lower rear area of the vehicle. These lights shall be switched from the in-cab switch panel. These lights fill the requirements of Zone C Lower.</p> <p>26. REAR DRIVING SIGNALS- WHELEN:</p> <p>a. The rear driving signals shall consist of six (6) lights; three (3) on each side of the apparatus. The signals shall be Whelen LED Series 60BBT: Red-Brake/Tail, Whelen Series LED60A00TAR: Amber Arrow-Turn. The backup light shall be Whelen LED Series 60C00VCR. They shall be surface mounted in a 4-position housing with the lower level warning lights.</p> <p>27. ARROW STIK:</p> <p>a. One (1) Whelen Model TAL65 LED traffic advisor (arrow stik) shall be surface mounted at the rear of the apparatus. The unit shall be controlled from the in cab switching station.</p> <p>28. FEDERAL E-Q2B SIREN:</p> <p>a. One (1) Federal Model E-Q2B electronic siren shall be installed. The e-Q2B combines Digital Signal Processor (DSP) technology with a true 200 watts of speaker output to reproduce genuinely and accurately the distinctive sound of the "Q" siren.</p> <p>b. The e-Q2B is a modular system comprised of a 200-watt speaker, an Amplifier / DSP, and a Digital Output Controller. These components work together to generate the characteristic sound of Federals "Q" siren.</p> <p>29. RUMBLER:</p>		

	Bidder Complies	
	Yes	No
<p>a. One (1) Federal Rumbler shall be installed on the apparatus</p> <p>b. There shall be two (2) Federal Signal Rumbler-3 siren speakers. The Rumbler-3 speakers are designed for use in heavy traffic, intersections or other high ambient noise conditions to add a penetrating burst of deep, low frequency siren sound to the high frequency siren sound provided by a separate primary siren speaker system. Each speaker shall measure approximately 7.30 inches in diameter X 8.50 inches deep.</p> <p>30. AIR HORNS:</p> <p>a. One (1) air horn kit shall be provided. The air horn kit shall consist of two (2) 24" x 6" brass air horns with a premium chrome plated finish (emergency tone,) 3-gallon air tank, 380C HD oil less Viair compressor, 90-120 PSI pressure protection switch, 12 Volt air solenoid, fittings and poly tubing. The air horns shall be mounted under the front bumper and shall be controlled from a push button switch located on the console in the chassis cab.</p> <p>31. BACKUP ALARM:</p> <p>a. One (1) 12-volt electronic backup alarm shall be incorporated on the apparatus. The backup alarm shall be a minimum of 97db and switched with the backup light circuitry.</p> <p>32. ICC LIGHTING:</p> <p>a. Tecniq S34 Series LED Clearance lights shall be installed on the apparatus. They shall be hermetically sealed cartridge lights for ease of service and durability.</p> <p>33. HAZARD LIGHT:</p> <p>a. A red, LED flashing light located in the driving compartment shall be illuminated automatically whenever the apparatus parking brake is not fully engaged and any passenger or equipment compartment door is open, any ladder or equipment rack is not in the stowed position, a stabilizer system is deployed, a powered light tower is extended, or any other device is opened, extended, or deployed that creates a hazard or is likely to cause damage to the apparatus if the apparatus is moved. The light shall be marked "Do Not Move Apparatus When Light Is On".</p> <p>34. LED COURTESY LIGHTS (UNDER CARRIAGE LIGHTING):</p> <p>a. A 5" 12-volt T41 Series LED light shall be located under each cab door. All ground area lighting shall be controlled by the master switch and shall be switched with the parking brake.</p> <p>b. In addition to the 5" lights, clear LED strip lights shall be provided integral to the rub rails on each side. The strip lights shall face downward and be activated with the balance of the undercarriage lighting.</p>		

	Bidder Complies	
	Yes	No
<p>35. LED REAR BUMPER COURTESY LIGHTS:</p> <p>a. Two (2) S34 Series LED courtesy lights shall be mounted one (1) each side low on the rear panel. The lights shall illuminate the rear tailboard. They shall be switched with the parking brake.</p> <p>36. SCENE LIGHTS:</p> <p>a. Six (6) LED scene light(s), Whelen Model 9SC0ENZR, shall be mounted in the specified location(s). Each scene light shall be switched from the cab console.</p> <p>b. LOCATION Two (2) each side and two (2) rear</p> <p>37. 12 VOLT BROW LIGHT - LED:</p> <p>a. One (1) 21" FireTech Model FT-MB-2.18-TR-FT-W shall be mounted above the center of the windshield. The light shall be switched from the in-cab switching console.</p> <p>38. BACK-UP CAMERA:</p> <p>a. There shall be one (1) Audiovox Color Observation back-up camera system installed on the apparatus. The system includes one (1) 7" color video monitor, monitor mount, color camera, three (3) camera input receiver, and camera cable.</p> <p>XX. 120 VOLT ELECTRICAL</p> <p>1. 120 VOLT POWER STRIPS:</p> <p>a. Two (2) 120-Volt power strip, model 681-77000N, shall be installed on the apparatus. Each power strip will have eight (8) on/off switch controlled, continuously powered outlets and a fifteen (15) amp circuit breaker. Each power strip shall be powered from the shoreline connection and hard wired to the apparatus for dependability.</p> <p>b. The power strip(s) shall be located:</p> <p>i. ONE (1) IN L4 FOR THE BLOW HARD QUICKEE FAN</p> <p>ii. ONE (1) IN THE REAR COMPARTMENT FOR THE COMBI RESCUE BATTERY TOOL</p> <p>XXI. BRACKETING</p> <p>1. FOLDING STEP(S):</p> <p>a. Four (4) large folding step(s) shall be furnished on the apparatus. Each step shall be mounted in the specified location.</p> <p>b. LOCATION: Two (2) each side at the rear</p>		

	Bidder Complies	
	Yes	No
<p>2. GRAB HANDLES:</p> <p>a. Four (4) 1¼" o.d. 18" knurled bright stainless-steel grab rail(s) shall be provided as grab handles.</p> <p>b. LOCATION: Two (2) each side on the compartment top at the rear</p> <p>3. GRAB HANDLES:</p> <p>a. Two (2) 18" knurled bright stainless-steel 1¼" O.D. grab rails shall be installed at the rear of the apparatus.</p> <p>4. UPPER STORAGE LEFT SIDE:</p> <p>a. One (1) upper storage compartment shall be designed into the left upper compartment area. The stored equipment shall be accessible from the rear of the apparatus through a drop-down door with a single point latch. The compartment shall be an integral part of the compartment area.</p> <p>b. The Fresno ladder shall be stored in the compartment</p> <p>5. UPPER STORAGE RIGHT SIDE:</p> <p>a. One (1) storage compartment shall be designed into the right upper area. The compartment shall be accessible from the rear of the apparatus through a vertically hinged door with a single point latch.</p> <p>6. LADDER STORAGE:</p> <p>a. The ladders shall be installed in a compartment located on the left side of the hose bed. The compartment shall be manufactured of .190" aluminum treadplate material. The stored equipment shall be accessible from the rear of the apparatus through an aluminum treadplate drop down door. The door shall incorporate a stainless-steel continuous hinge at the bottom of the door opening and one (1) D-Ring single point latch.</p> <p>b. The ladder storage shall have the capacity to contain the following: One (1) 16' 3-Section ladder, one (1) attic ladder, one (1) stokes basket and two (2) pike poles</p> <p>7. PIKE POLE TUBE:</p> <p>a. Two (2) 6' pike pole tube(s) shall be installed on the apparatus.</p> <p>b. LOCATION: Hose bed ladder storage compartment</p> <p>8. WHEEL CHOCKS:</p>		

	Bidder Complies	
	Yes	No
<p>a. One (1) pair of Worden Safety Model 211001 one-piece rubber wheel chocks shall be provided with the apparatus. Each chock features a molded in grab handle, an elbow fixture for rope or chain attachment, and utilizes a very sticky live rubber to ensure high coefficient of friction.</p> <p>XXII. FINISH</p> <p>1. APPARATUS BODY FINISH:</p> <p>a. The final finish of the apparatus shall conform to fire apparatus standards, exhibiting excellent gloss durability and color retention properties.</p> <p>2. PREPARATION:</p> <p>a. Since the removal of all contaminates and oxidation is essential to the final effect of a finish system, the apparatus shall be pre-cleaned with wax and grease remover and towel dried prior to evaporation.</p> <p>b. After proper drying, the excess body filler shall be removed and sufficient applications of Spray Polyester (up to 20 mils. in 5 coats) shall be applied. After a 2-hour drying (68° F), the sprayable filler shall be sanded to a smooth finishable surface.</p> <p>c. When the substrate is prepared, the entire body shall be cleaned by washing again with wax and grease remover and towel dried.</p> <p>3. PRETREAT AND PRIMERS:</p> <p>a. The pretreat and primer applications shall be made in two (2) independent steps. Application of a combined pretreat/primer product will not be allowed as a substitute.</p> <p>b. The prepared substrate shall be pretreated with Acid Curing 2 component Transparent Primer. This pretreat shall be designed to provide corrosion protection and to create an adhesive bond between the substrate and the surface applications.</p> <p>c. To enhance surface smoothness and topcoat gloss, a 2 component Acrylic Risin Zinc Chromate free surfacer shall be applied. Then 1.2 mils, (1-2 coats) of non-sanding surfacer or 2.5 to 5.5 mils (1½ to 2½ coats) of sanding surfacer shall be applied.</p> <p>d. All the primed surfaces shall be sanded smooth, thus removing all texture and surface imperfections and creating a finish base that will meet the rigid requirements of the fire and emergency services.</p> <p>e. One to two coats (2 + mils minimum) Hi-Solid Acrylic Urethane 2 part top coat shall be applied in a professional manner. The paint, when ready for use, shall be less than 3.5 pounds per gallon in Volatile Organic Compounds.</p> <p>4. COMPARTMENT INTERIOR FINISH:</p>		

	Bidder Complies	
	Yes	No
<p>a. The interior of the compartments shall be natural finish aluminum</p> <p>5. CHASSIS FINISH:</p> <p>a. The chassis shall be finished Ford OEM black over red.</p> <p>6. CAB LETTERING:</p> <p>b. Vinyl lettering as described below shall be applied to the chassis cab door, one (1) each side. Each letter shall be 2½" to 3½" high and hand applied.</p> <p>c. Vinyl letters/numbers shall be applied to the chassis cab fender area, one (1) each side. Each letter/number shall be 2½" to 3½" high and hand applied.</p> <p>d. The lettering vinyl style shall be simulated gold leaf.</p> <p>e. The lettering font style shall be Eurostile Bold.</p> <p>f. The lettering font highlight type shall be shadow.</p> <p>7. REFLECTIVE STRIPING:</p> <p>a. The finished apparatus shall be striped <u>Black</u> with reflective Scotchlite striping. There shall be a 6" stripe and two (2) 1" stripes.</p> <p>8. SHADED 'S':</p> <p>a. There shall be a shaded 'S' design within the reflective stripe on each side of the apparatus.</p> <p>9. REFLECTIVE STRIPING IN THE CAB:</p> <p>a. Two-inch red and Black striped retro-reflective material shall be placed on the inside of each opening cab door. The material will be at least 96 square inches, meeting current NFPA standards.</p> <p>10. DIAMOND GRADE CHEVRON STRIPING:</p> <p>a. The rear of the apparatus shall be striped with Diamond Grade retro-reflective striping. The striping shall be applied in a chevron pattern sloping downward and away from the centerline of the apparatus at a 45° angle. The striping shall be single color alternating between red #3992 and fluorescent yellow-green #3983.</p> <p>b. The Chevron striping shall be applied in the following locations: vertical surfaces of the body at the rear, outboard of the rear compartment door.</p> <p>XXIII. EQUIPMENT</p>		

**Bidder
Complies**

Yes

No

1. One (1) Hurst SC758EWXT combi unit.
2. One (1) Blowhard Quickee Fan shall be furnished with the apparatus.
The fan is 21" x 21" x 9.75"
3. One (1) Duo-Safety #10-585A aluminum folding 10' attic ladder(s).
4. One (1) Duo-Safety #12-701, 12' Fresno Ladder
5. One (1) Duo-Safety #912-16, 16' 3 Section ground ladder(s).

XXIV. NFPA EQUIPMENT CLARIFICATION

Any equipment specified in the "Minor Equipment" section (e.g. hose, nozzles, adapters, AED, traffic cones, traffic safety vests, etc.) of NFPA 1901 for each apparatus classification (see below) which is not specified in this bid shall be considered to be customer supplied and installed.

Apparatus Type	NFPA Section
Pumper	5.8
Initial Attack	6.7
Mobile Water Supply	7.7
Aerial	8.8
Quint	9.8
Special Service	10.5
Mobile Foam	11.9