TOWN OF MONTVILLE

LEGAL NOTICE AND INVITATION TO BID

BID #2024-11

The Town of Montville is soliciting sealed proposals for a Pumper Truck for the Montville Fire Department.

Please see the Town's website at www.montville-ct.org for bid specifications and particular terms and conditions.

All proposals must be sealed and received at the Finance Dept, Town Hall, 310 Norwich-New London Tpke, Uncasville, CT 06382 by the due date and time. All bids are due no later than July 16, 2024 at 10:00 a.m. The bids will be opened publically and read aloud in the Town Hall Finance Office. All bids must be in a sealed envelope marked **"Montville Fire Department Pumper."** All bids must be signed by company official.

The Town of Montville reserves the right to reject any or all bids and waive any informalities or irregularities in the bid procedure or bids.

Barbara Griffin
Director of Finance

Bid Disclosure

In addition to other reservations and conditions contained in the proposal documents, the Town of Montville reserves the right to waive any technical defects in the proposals received; to waive any formalities or irregularities; to reject any and all proposals for any reason, including that it or they do not conform to the terms and conditions described herein, as determined by the Town in its sole discretion; to accept or reject any part of any proposal received; to present and negotiate terms of a contract together or separately with any party submitting a proposal; to determine qualifications exclusively and finally; to request additional qualifications; and to select any proposal or part thereof based on any combination of factors, including the amount proposal, the time of completion, and the Town's best interests. The Town further reserves the right to retain all proposals submitted and to use any ideas in a proposal regardless of whether or not that proposal is selected.

The Town may hold the bids for a period not to exceed sixty (60) days from the date of the bid opening to review the bids and investigate the bidders' qualifications prior to awarding the contract.

All bidders are advised the Town of Montville has enacted through resolutions the following special conditions concerning Town bids and purchases.

1. For all Town purchases of goods and services not utilizing State or Federal funds, any Town bidder that has submitted a bid not more than 15% (fifteen percent) higher than the low bid may be awarded the project provided such Town based bidder agrees to accept the award of the bid at the amount of the low bid. If more than one Town based bidder has submitted bids not more than 15% (fifteen percent) higher than the low bid, and have agreed to accept the award of the low bid, the lowest responsible bidder shall be the one of such Town based bidders that submitted the lowest bid. That within the bidding process that all businesses claiming to be Montville businesses, provide the Finance Department (Assessor's Section) with sufficient documentation to prove that they are in compliance with property tax assessments, including motor vehicle tax assessments.

2. Seller agrees that as a condition of his sale of goods and/or services to the Town of Montville, the Town of Montville will be authorized to deduct from the proceeds due Seller an amount not to exceed 25% of the total amount due Seller. Said amount is to be applied against any unpaid and overdue taxes, assessments, fees, or other charges levied by the town of Montville or any agency thereof against the Seller. The Seller further agrees that Seller shall insure that Seller has the right to withhold an amount not to exceed 25% from each subcontractor working for the Seller, and providing goods and/or services to the Town of Montville, and to remit such withheld money to the Town in full or partial satisfaction of any unpaid and overdue taxes, assessments, fees, or other charges levied by the Town of Montville or any agency thereof against such subcontractor.

Montville Bid Specifications

	Bidder Complies	
	YES	NO
INTENT OF PROPOSAL SPECIFICATIONS It is the intent of these PROPOSAL specifications to cover the furnishing and delivery a complete pumper apparatus equipped as hereinafter specified. These proposal specifications exceed the minimum requirements of the Fire Department and are intended to provide details of construction and materials, and where not otherwise specified are left to the discretion of Ferrara Fire Apparatus, Inc. If an L9 engine is **NOT** available or cannot be provided for that specific quote or build slot at time of production, you will **automatically be upgraded and charged for an X12 (or the X10 engine) with all costs associated with the upgrade being passed on to the end user. No exceptions.** Ferrara Fire Apparatus, Inc. shall be solely responsible for the design and construction of all non-specified features. The apparatus shall conform to the current edition of the National Fire Protection Associations Pamphlet. Ferrara Fire Apparatus, Inc. as an established manufacturer with a certainty of being capable of furnishing parts, service and technical assistance for the next TWENTY (20) Years. Ferrara Fire Apparatus, Inc. is furnishing, satisfactory evidence of its ability to construct the specified apparatus and certifies that the location of the factory where the apparatus is to be built is at 27855 James Chapel Road, Holden, LA 70744. This bid is accompanied by a set of manufacturer's specifications consisting of a detailed description of the apparatus and equipment proposed and to which the apparatus furnished under contract must conform.		
QUALITY AND WORKMANSHIP The design of the apparatus proposed shall embody the modular design and construction technique as outlined. The workmanship is of the highest quality in its respective field. Special consideration has been given to the following points: accessibility of the various components, which require periodic maintenance operations for ease of operation, including both pumping and driving operations and symmetrical proportioning of the overall apparatus. Construction utilized shall be rugged and safety factors have been provided to carry loads as specified and to meet the road requirements and speed conditions as set forth under "Performance Tests and Requirements". Welding shall not be employed in the assembly of the apparatus in a manner that shall prevent the removal of major component parts for service and/or repair. This includes the following but is not		

	Bidder Complies	
	YES	NO
limited to compartment doors, hinges, fender liners, running boards, hose beds, and pump panels, etc. **VEHICLE STABILITY** The height of the fully loaded vehicle center of the gravity shall not exceed the chassis manufacturer maximum. The front to rear weight distribution of the fully loaded vehicle 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. Difference in weight on the end of each axle, from side to side, when the vehicle is fully loaded and equipped shall not exceed 7%.		
PERFORMANCE TEST AND REQUIREMENTS The apparatus will meet the performance requirements at elevations of 2000 feet (610m) above sea level. The apparatus will meet the performance requirements while stationary on any grade of up to and including 6% in any direction. From a standing start, the vehicle will attain a true speed of 35 mph (56 km/h), within 25 seconds on a level road. The apparatus will obtain a minimum top speed of 50 mph (80 km/h) on a level road. The apparatus will be able to maintain a speed of at least 20 mph (32 km/h), on any grade up to and including 6%. The apparatus will be tested and approved by Underwriters Laboratories Incorporated in accordance with the standard practices for pumping engines.		
ROAD TEST Each manufacturer will conduct road test to verify that the complete apparatus is capable of compliance: The test will be conducted on a dry, level, paved road that is in good condition. The engine will not operate in excess of the maximum no load governed speed. Acceleration test will consist of two runs in opposite direction over the same route. The vehicle will attain a true speed of 35 mph (56 km/h) from a standing start within 25 seconds.		

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	Bidder Complies	
	YES	NO
The vehicle will attain a minimum top speed of not less than 50 mph (80 km/h). If the apparatus is equipped with an auxiliary braking system, the apparatus manufacturers will road test the system to confirm that the system is functioning as intended by the auxiliary braking system manufacturer. The service brakes will bring the fully laden apparatus to a complete stop from an initial speed of 20 mph (32 km/h) in a distance not exceeding 35 feet (10.7M) by actual measurement, on a substantially hard, level surface road that is free of loose material, oil, or grease.		
FAILURE TO MEET TESTS In the event the apparatus fails to meet the test requirements of these specifications on the first trials, second trials may are made at the option of the Ferrara Fire Apparatus, Inc. within thirty-(30) days of the date of the first trials. Such trials shall be final and conclusive and failure to comply with changes, as the purchaser may consider necessary to conform to any clause of the specifications within thirty-(30) days after notice is given to Ferrara Fire Apparatus, Inc. of such changes shall also because of rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the purchaser or its use by the Fire Department during the above-specified period with the permission of the Ferrara Fire Apparatus, Inc. shall not constitute acceptance.		
PRODUCT LIABILITY INSURANCE Due to the high cost of replacement of said Fire Apparatus and to protect the customer of his full rights, Ferrara Fire Apparatus, Inc. carries garage liability insurance equal to or in excess of $1,000,000.00.		
INFORMATION SUPPLIED AT TIME OF DELIVERY Information required at time of delivery to be supplied by Ferrara Fire Apparatus, Inc. shall include: (1) The manufacturer's record of apparatus construction details, including the following information: (a) Owner's name and address (b) Apparatus manufacturer, model, and serial number (c) Chassis make, model, and serial number (d) GVWR of front and rear axles (e) Front tire size and total rated capacity in pounds (kilograms) (f) Rear tire size and total rated capacity in pounds (kilograms)		

	Bidder Complies	
	YES	NO
(g) Chassis weight distribution in pounds (kilograms) with water and manufacturer-mounted equipment (front and rear) (h) Engine make, model, and serial number, rated horsepower, related speed and governed speed (i) Type of fuel and fuel tank capacity (j) Electrical system voltage and alternator output in amps (k) Battery make, model, and capacity in cold cranking amps (CCA) (l) Chassis transmission make, model, and serial number; and if so equipped, chassis transmission PTO(s) make, model, and gear ratio (m) Pump make, model, rated capacity in gallons per minute (liters per minute where applicable), and serial number (n) Pump transmission make, model, serial number, and gear ratio (o) Auxiliary pump make, model, rated capacity in gallons per minute (liters per minute where applicable), and serial number (p) Water tank certified capacity in gallons or liters (q) Foam tank (if provided) certified capacity in gallons or liters (r) Paint manufacturer and paint number(s) (s) Company name and signature of responsible company representative		
(2) Certification of slip resistance of all stepping, standing, and walking surfaces		
(3) If the apparatus has a fire pump or an industrial supply pump, the pump manufacturer's certification of suction capability		
(4) If the apparatus has a fire pump or an industrial supply pump, a copy of the apparatus manufacturer's approval for stationary pumping applications		
(5) If the apparatus has a fire pump or an industrial supply pump, the engine manufacturer's certified brake horsepower curve for the engine furnished, showing the maximum governed speed		
(6) If the apparatus has a fire pump or an industrial supply pump, the pump manufacturer's certification of the hydrostatic test		
(7) If the apparatus has a fire pump or an industrial supply pump, the certification of inspection and test for the fire pump or the industrial supply pump		
(8) If the apparatus has a fixed line voltage power source, the certification of the test for the fixed power source		
(9) If the apparatus is equipped with an air system, test results of due air quality, the SCBA fill station, and the air system installation		
(10) Weight documents from a certified scale showing actual loading on the front axle, rear axle(s), and overall fire apparatus (with the water tank full but without personnel, equipment, and hose)		

	Bidder Complies	
	YES	NO
(11) Written load analysis and results of the electrical system performance tests required in Chapter 13		
(12) When the apparatus is equipped with a water tank, the certification of water tank capacity		
The Fire Apparatus Manufacture will also provide documentation of the following items for the entire apparatus and each major operating system or major component of the apparatus:		
(1) Manufacturer's name and address		
(2) Country of manufacture		
(3) Source for service and technical information		
(4) Parts replacement information		
(5) Descriptions, specifications, and ratings of the chassis, pump (if applicable), and aerial device		
(6) Wiring diagrams for low voltage and line voltage systems to include the following information: (a) Pictorial representations of circuit logic for all electrical components and wiring (b) Circuit identification (c) Connector pin identification (d) Zone location of electrical components (e) Safety interlocks (f) Alternator-battery power distribution circuits (g) Input/output assignment sheets or equivalent circuit logic implemented in multiplexing systems		
(7) Lubrication charts		
(8) Operating instructions for the chassis, any major components such as a pump or aerial device, and any auxiliary systems		
(9) Precautions related to multiple configurations of aerial devices, if applicable		
(10) Instructions regarding the frequency and procedure for recommended maintenance		
(11) Overall apparatus operating instructions		
(12) Safety considerations		
(13) Limitations of use		
(14) Inspection procedures		
(15) Recommended service procedures		

	Bidder Complies	
	YES	NO
(16) Troubleshooting guide (17) Apparatus body, chassis, and other component manufacturer's warranties (18) Special data required by this standard (19) Copies of required manufacturer test data or reports, manufacturer certifications, and independent third-party certifications of test results (20) A material safety data sheet (MSDS) for any fluid that is specified for use on the apparatus (21) One-(1) copy of the latest edition of FAMA's Fire Apparatus Safety Guide The Fire Apparatus Manufacture shall deliver with the apparatus all manufacturers' operations and service documents supplied with components and equipment that are installed or supplied.		
LIABILITY Ferrara Fire Apparatus, Inc. if deemed the successful bidder shall defend any and all suits assume all liability for the use of any patented process, advice or article forming a part of the apparatus or any appliance furnished under contract.		
PAYMENT TERMS Full payment shall be made upon delivery and acceptance of the apparatus. The vehicle(s) shall not be released to the BUYER until payment is made. If the selling price is subject to any taxes, the taxes added will be that which are prevailing at the time of delivery. Payment shall be made directly to Contractor. Payment shall be made in United States Currency. No checks or any other form of payment shall be made to any sales representatives, dealer, agents, etc. If these payment terms are not strictly adhered to, Contractor shall assess a daily interest charge based on an annual percentage rate of 18% on the unpaid balance. If more than one vehicle is covered by this contract and the vehicles are shipped on different dates, the terms stated above shall apply to each vehicle.		
PERFORMANCE BOND The successful apparatus manufacturer shall furnish a Performance Bond equal to one hundred (100%) percent of the total contract amount. The Performance Bond shall insure the prompt and complete performance of any contract entered resulting from the award of this bid.		
SINGLE SOURCE MANUFACTURER		

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	Bidder Complies	
	YES	NO
To provide the customer with a single point of contact for service, warranty, and parts, proposals shall only be accepted from manufacturers who assemble the complete apparatus in their own facility.		
VIRTUAL MANUFACTURING The manufacturer will have a web site available for the customers to watch their unit being produced. The "Trucks in Production" photos shall be updated as progress has been made to the unit. Customer shall be able to access the web site without the requirement of a password.		
PRINCIPAL DIMENSIONS The apparatus shall have the following dimensions: Overall Length: NOT TO EXCEED 34' Overall Height: NOT TO EXCEED 9' 10"		
CERTIFIED WELDERS The manufacturer shall employ individuals that are certified aluminum and stainless steel welders. The welders shall be certified by an outside testing laboratory. The certifications shall be available for viewing through the Human Resources office upon request.		
DRAWING, PROPOSAL There shall be a proposal drawing submitted to the Fire Department. This drawing shall be a visual interpretation of the apparatus proposed.		
DRAWING, APPROVAL Prior to construction, the contractor shall provide three-(3) approval drawings of the apparatus for the fire department's review. The drawings shall show such items as the chassis being utilized, lights, horns, sirens, pump panels, and all compartment locations and dimensions. The blueprint shall be a visual interpretation of the unit as it is to be constructed, In the event of discrepancies on the print the specifications shall prevail. The buying authority shall sign all drawings. One-(1) print shall be retained by the Fire Department, the dealer/sales representative shall retain one-(1) print, and one-(1) print shall be returned to the manufacturer.		
ORDER REVIEW CONFERENCE		

	Bidder Complies	
	YES	NO
An order review conference shall be held prior to the actual construction of the vehicle(s). The conference shall be held in the Fire Departments' facility with representatives of the Fire Department and appropriate representatives of the manufacturer.		
INSPECTION TRIP, FINAL There will be a final inspection for Four (4) representatives of the buying authority at the facility where the apparatus is being constructed. The inspection trip will be completed when the apparatus is complete. Factory and Sales representatives will be available at the time of inspection. The final inspection will include the following: *Safety brief and general housekeeping *Pre-inspection walk around *Spec review with shop order, excluding under body, siren or horn operation. *Visual inspection interior and exterior *Review and layout any loose equipment, microphone clip(s), consoles(s), etc. *Aerial Operation (if applicable) *Road test. *Warranty documentation. *Review discrepancies and shortages with QRT, dealer and customer. Safety Overview- While visiting the facility, it is important that all guests follow the below safety guidelines when on the production floor. * All visitors must be accompanied by a Holden employee. *No open-toed shoes are allowed. *Safety glasses and hearing protection will be provided and must be worn at all times. *Mobile device usage is not permitted while on the production floor. Transportation, lodging and meals will be the responsibility of Bulldog Fire Apparatus. Note: The apparatus will not be accepted by the customer until the apparatus is lifted and inspected at the dealers facility.		
VEHICLE DELIVERY/TRANSPORTATION To insure proper break-in of all components while still under warranty, the apparatus shall be delivered over the road under its own power (Rail and/or truck freight shall not be acceptable).		
DELIVERY TIME The pumper / tanker apparatus will have the following delivery schedule after receipt of the order. Commercial Pumper / Tanker: 780 Days		

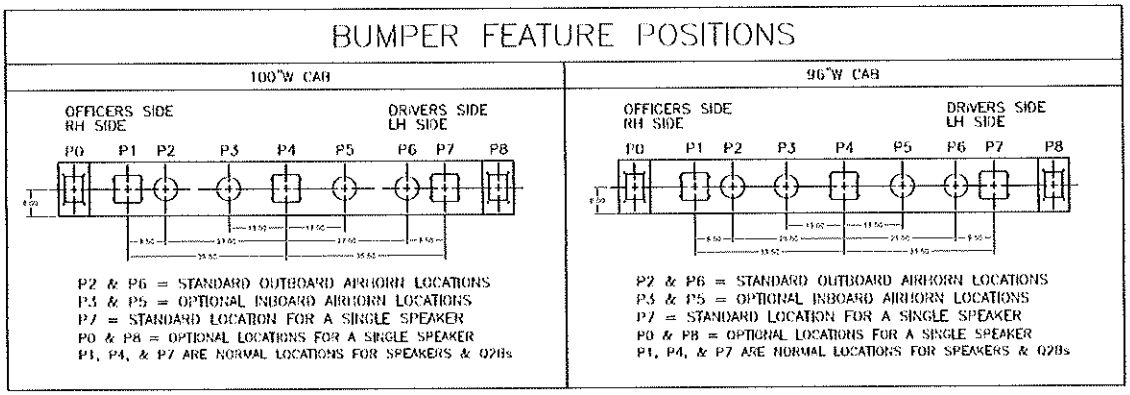
	Bidder Complies	
	YES	NO
Custom / Commercial Industrial Pumper / Tanker: 810 Days Custom Pumper / Tanker: 720 Days The manufacturer will not be held liable for changes arising from its failure to make or delay in making delivery because of fire, flood, strike, riot, supply chain, work force shortages, accidents, acts of God or any circumstances beyond our control.		
VEHICLE FAMILIARIZATION & DEMONSTRATION Familiarization and demonstration of the vehicle shall be by a competent and qualified person as defined in the current standard of NFPA 1901 standard. Familiarization of the vehicle shall include the following: How to locate gauges or indicators and check all fluid levels and operational issues of the vehicle How to tilt the chassis cab or hood assembly for access to the engine, fire pump, or aerial control, or any other device to allow access to fluids or for required maintenance Interior cab controls, instruments, mirrors, safety devices or alarms, brake operations, transmission control, pump controls, exhaust regeneration (if provided), seat adjustments, warning light engagement, and other operational equipment If the apparatus is provided with a fire pump system, the following minimum instructions: a) Setting of parking brake, proper transmission gear, and fire pump engagement operations b) Throttle control c) Primer and tank-to-pump operation d) Use of pressure control devices e) Tank refilling operations f) Proper operation of discharge controls g) Proper shutdown and draining of system If the apparatus is provided with a generator, the following minimum instructions a) Proper engagement if driven by the chassis b) Startup, operation, and shutdown of generator c) Monitoring of controls and instruments If the apparatus is provided with a foam system, the following minimum instructions: a) Startup, operation, and shutdown of foam system b) Setting of foam percentages and other operational settings c) Proper flushing and draining of the system If the apparatus is provided with a water tower or aerial device, the following minimum instructions:		

	Bidder Complies	
	YES	NO
a) Positioning and locating the vehicle for safe operations b) Chassis parking brakes and engagement of hydraulic system c) Deployment of stabilization devices and use of ground pads d) Operation of elevation, extension, and rotation of the aerial device e) Operation of waterway, nozzle, and other firefighting devices of aerial device f) Operation and use of breathing air system (if provided) g) Specific aerial device maintenance and service areas for operators h) Shutdown and return to service operations i) Operation of tip controls and platform controls j) General familiarization and demonstration of aerial device k) Review of all safety devices, interlocks, and operational Hazards		
CUSTOM CHASSIS It is the intent of the technical specifications contained herein to ensure the custom cab and chassis specified will be engineered, designed and manufactured exclusively for heavy-duty continuous use in extreme environments and rigorous adverse conditions. Each custom cab and chassis will be manufactured in strict compliance with all applicable requirements as set forth in the current edition of the NFPA (National Fire Protection Association) pamphlet 1901 with maximum safety as the key focus throughout the design and development phase of each fire and rescue chassis.		
CHASSIS WHEELBASE The chassis wheelbase will be _____ inches.		
CHASSIS FRAME RAILS, FULL LENGTH DOUBLE The chassis frame rails shall be constructed of 110,000-PSI minimum yield steel that has been formed into a "C" channel shape with dimension of 10.50" x 3.50" x .375 inches. A full length inner frame liner of 110,000 Pound minimum yield with dimension of 9.69" x 3.13" x .313" shall be provided for additional strength and to reduce deflection. The resulting frame system shall have a minimum section modulus of 28.50 cubic inches with a resisting bending moment of 3,135,498-inch pounds per rail. The frame rails shall be powder coated in order to insure superior paint adhesion. Frame cutouts for the engine shall be made with a plasma torch in order to minimize the heat-affected zone caused by the cut. The left and right side frame systems shall be fastened together using cross members and Grade 8 fasteners.		

Montville Bid Specifications

	Bidder Complies	
	YES	NO
PAINT, FRAME RAIL The frame rails shall be hot dip galvanized prior to assembly and attachment of any components. The components that shall be galvanized shall include: Main frame "C" channel or channels, cross members amd cross member gussets. The frame parts which are not galvanized shall be powder coated prior to any attachment of components. Parts which shall be powder coated shall include but are not limited to: Steering gear bracket Front splayed rails and fish plates Bumper extensions Fuel tank mounting brackets Fuel tank straps (unless material/finish is specified in 3130 subcat) Air tanks (unless color coded tanks are specified in 3205 subcat) Air tank mounting brackets Exhaust mounting brackets Air cleaner skid plate Radiator skid plate (if applicable) Battery supports, battery trays and battery covers Other non-galvanized under carriage components which are received from the suppliers with coatings already applied shall include but are not limited to: Suspension components Front and rear axles All powder coatings, primers and paint used on the non-galvanized components shall be compatible with all metals, pretreatments and primers used. The cross hatch adhesion test per ASTM D3359 shall not have a fail of more than ten (10) squares. The pencil hardness test per ASTM D3363 shall have a final post-curved pencil hardness of H-2H. The direct impact resistance test per ASTM D2794 shall have an impact resistance of 120.00 inches per pound at 2 mils.		
PAINT, FRAME RAIL The frame and running gear shall be painted gloss enamel black. The running gear shall consist of the axles, drive lines, air tanks, steering gear, frame mounted brackets, drag link, and fuel tank. The air system piping and electrical harnesses shall not be installed until after the paint has cured. This shall insure complete coverage behind those items as well as that air piping and wiring harnesses are not.		

Montville Bid Specifications

	Bidder Complies	
	YES	NO
PAINT, FRAME RAIL The frame and running gear shall be painted gloss enamel black. The running gear shall consist of the axles, drive lines, air tanks, steering gear, frame mounted brackets, drag link, and fuel tank. The air system piping and electrical harnesses shall not be installed until after the paint has cured. This shall insure complete coverage behind those items as well as that air piping and wiring harnesses are not.		
TOW EYES, FRONT Two-(2) chrome plated tow eyes shall be mounted thru the front bumper fabricated from 1" thick C1018 cold drawn steel. The tow eye shall have an inside diameter of 3" with a radius inside edge. The tow eyes shall be attached with Grade 8 bolts.		
FRONT BUMPER There shall be an 100,000 psi high tensile strength painted steel bumper provided fabricated from 10-1/2" x 3-1/2" x .375" steel bolted to the chassis frame rails utilizing grade 8 hardware protecting the front of the apparatus during head-on or angled collisions. The bumper will be painted job color.		
FRONT BUMPER POSITIONS  		
FRONT BUMPER EXTENSION There will be a 24" front frame extension provided. The extension will be made from heavy-duty steel in both C-channel and tubular shapes. The frame rail extension material will measure 7" high x 3-1/2" wide x .375" wall thickness.		

Montville Bid Specifications

	Bidder Complies	
	YES	NO
The extension rails will be bolted to the chassis frame rails through reinforcement plates with Grade 8 hardware, backed by the engine mounting cross member.		
GRAVELSHIELD A gravelshield constructed of 1/8" non-skid aluminum tread plate will be installed between the bumper and the front face of the cab affixed using stainless steel bolts.		
BUMPER COMPARTMENT, DRIVER'S SIDE The front bumper will include a compartment in the bumper gravelshield located on the driver's side which may be used as a hose well or equipment storage compartment. The compartment will be constructed 1/8" smooth aluminum and will include drain holes in the bottom corners to allow excess moisture to escape. A safety sign FAMA22, which warns of the need to secure hose, will be visible to personnel at the hose storage area. The compartment will be 18" wide x 18" long x 2" deep for storage of a floating strainer.		
BUMPER COMPARTMENT, CENTER The front bumper will include a compartment in the bumper gravelshield located in the center between the frame rails which may be used as a hose well or equipment storage compartment. The compartment will be constructed 1/8" smooth aluminum and will include drain holes in the bottom corners to allow excess moisture to escape. A safety sign FAMA22, which warns of the need to secure hose, will be visible to personnel at the hose storage area.		
STRAP(S), DRIVER'S FRONT BUMPER COMPARTMENT There will be one (1) restraining strap(s) installed over the driver's side bumper compartment to secure the contents.		
COVER, CENTER FRONT BUMPER COMPARTMENT The center bumper compartment will have a heavy-duty reinforced hypalon cover to secure the contents. The cover will be secured in the closed position with J style hooks and bungee cords. Color: Red		
MECHNICAL SIREN		

Montville Bid Specifications

	Bidder Complies	
	YES	NO
There will be a Federal Signal Q2B electro-mechanical siren surface mounted on the front bumper. The Q2B siren siren be a streamlined and designed to provide reliable and long-life operation. The siren will be surface mounted on the front bumper in position P7. The siren brake switch will be located within reach of the driver.		
SIREN WIRING The siren activation switch will be wired thru the chassis park brake and operate in the "Response Mode" only.		
SIREN FOOT SWITCH A foot operated switch will be installed on the driver's side wired to the mechanical siren.		
AIR HORN, DRIVER'S SIDE There will be one-(1) Hadley E-Tone air horn installed in compliance with NFPA thru the driver's side front bumper outboard of the frame rails. The air horn will be plumbed to the chassis air supply system thru an air protection valve. The air horn shall be trumpet style with a chrome finish on the exterior and a painted finish deep inside the trumpet. The air horn will be located on the driver's side of the front bumper in position P6.		
AIR HORN, PASSENGER'S SIDE There will be one-(1) Hadley E-Tone air horn installed in compliance with NFPA thru the passenger's side front bumper outboard of the frame rails. The air horn will be plumbed to the chassis air supply system thru an air protection valve. The air horn shall be trumpet style with a chrome finish on the exterior and a painted finish deep inside the trumpet. The air horn will be located on the passenger's side of the front bumper in position P2.		
AIR HORN WIRING The air horns shall be active in both the "Scene" and "Response Mode".		
SWITCH, HORN / AIR HORN SELECTOR There will be a horn / air horn selector switch installed in the cab pr the approved dash layouts to operate either air horn(s) or chassis electric horn through the horn ring button.		

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	Bidder Complies	
	YES	NO
SIREN SPEAKER(S) There will be one (1) Cast Products model SA2401 100-watt speaker(s) provided wired to the electronic siren. The speaker will be located on the officer's side of the front bumper in position P1.		
FRONT AXLE The front axle shall be a Hendrickson Steertek fabricated box beam axle with an 22,000-pound rating. The axle shall be equipped with removable kingpins & oil seals with transparent covers for oil level inspection.		
STEERING SYSTEM The vehicle shall be equipped with a Sheppard M110 power steering gear, used in conjunction with a M90 power assist gear. The steering assembly shall be rated to statically steer up to a maximum front axle load of up to 23,500-pounds. Relief stops shall be provided to reduce system pressure upon full wheel cut. The system shall operate mechanically should the hydraulic system fail.		
CHASSIS ALIGNMENT The chassis frame rails shall be measured to insure the length is correct and cross checked to make sure they run parallel and are square to each other. The front and rear axles shall be laser aligned. The front tires and wheels shall be aligned and toe-in set on the front tires by the chassis manufacturer. Cramp angle is set to achieve the greatest turning radius possible with the selected components of the vehicle. Each front wheel is set to zero degrees. The wheel is then turned until it reaches the steering stops. This measurement is the cramp angle.		
FRONT SUSPENSION The front suspension shall be parabolic (taper leaf) spring type, with three-(3) leaves with an 22,000-pound serving rating. The leaves shall be a minimum of 4" wide x 56.4" long (flat), with grease fittings for lubrication installed in the spring pins. Axle stops with energy absorbing bumpers shall be attached to the chassis frame. Two-(2) ZF Sachs twin-tube shocks shall be provided with the front suspension assembly. The shocks shall feature multi-stage piston and base valves.		
FRONT BRAKES The front axle shall be equipped with EX-225 air operated disc brakes and ventilated rotors.		
CRAMP ANGLE		

	Bidder Complies	
	YES	NO
The cramp angle of the front axle shall be 45 degrees.		
FRONT TIRES The front tires shall be Michelin 425/65R22.5 Load Range "L" all-weather tread. The Intermittent Fire Service load capacity shall be 22,800 pound with a speed rating of 65 miles per hour when properly inflated to 120 pounds per square inch with steel or aluminum wheels. The Michelin Intermittent Fire Service Rating limits the operation of the emergency vehicle to one-(1) hour of loaded travel with a one-(1) hour cool down prior to another loaded run.		
WHEELS, FRONT STEEL The front wheels shall be Accuride hub piloted, 22-1/2" x 12-1/4" steel wheels. The hub piloted mounting system shall provide easy installation and shall include two-piece flange nuts.		
WHEEL FINISH, FRONT The outside surface of the wheels will be painted job color with silver outside trim.		
MUD FLAPS, FRONT The front axle mud flaps shall be constructed from hard black rubber and installed behind the tires.		
REAR AXLE The rear axle shall be a Meritor RS-26-185 with a 27,000-pound service rating. The axle shall be equipped with oil seals. The rear axle ratio will be 5.86 (reference H5747).		
REAR SUSPENSION The rear axle suspension shall leaf spring type rated at 27,000 pounds capacity. The main spring pack shall have fourteen (14) leaves with a four (4) leaf auxiliary pack. The suspension shall be a torque leaf, variable rate, self-leveling slipper type.		
DIFFERENTIAL LOCK, DRIVER CONTROLLED		

Montville Bid Specifications

	Bidder Complies	
	YES	NO
The rear axle shall have a driver controlled differential lock. This feature allows the main differential to be locked and unlocked when the vehicle is stationary providing maximum wheel end traction.		
VEHICLE TOP SPEED The rear axle shall be geared for a top speed of 65-68 MPH at governed engine speed. The rear axle ratio will be 5.86 (reference H5747).		
REAR BRAKES The rear axle shall be equipped with 16-1/2" x 8-5/8" S-Cam air operated brakes with automatic slack adjusters.		
REAR TIRES The rear tires will be Michelin 12R22.5 Load Range "H" XDN 2 all weather drive tire. The Intermittent Fire Service load capacity will be 27,000 pound with a speed rating of 75 miles per hour when properly inflated to 120 pounds per square inch with steel or aluminum wheels. The Michelin Intermittent Fire Service Rating limits the operation of the emergency vehicle to one-(1) hour of loaded travel with a one-(1) hour cool down prior to another loaded run.		
WHEELS, REAR STEEL The rear wheels shall be Accuride hub piloted, heavy duty, 22-1/2" x 8-1/4" steel wheels. The hub piloted mounting system shall provide easy installation and shall include two-piece flange nuts.		
WHEEL FINISH, REAR The outside surface of the wheels will be painted job color with silver outside trim.		
EXTENSIONS, VALVE STEM A set of valve stem extensions will be provided to allow for visual inspection of the LED tire pressure caps on the single rear wheels.		
REAR DUAL TIRE EQUALIZATION SYSTEM The dual rear tires will be supplied with Crossfire tire equalization valves and stainless braided balance lines. This system will provide dual tire blowout protection, as well as, slow leak		

	Bidder Complies	
	YES	NO
protection between the rear tires.		
WHEEL TRIM The front and rear axle wheels shall be trimmed with stainless steel hub and lug nut covers. The front axle's hub cover shall be equipped with holes for oil level viewing.		
TIRE CHAINS, AUTOMATIC The rear axle shall be equipped with a RUD Rotogrip automatic tire chain system. The system shall provide instant traction at the touch of a switch, without having to stop the vehicle. The driver's dash shall have an electric control switch, clearly labeled for operation of the tire chains. The switch shall be provided with a guard to prevent accidental deployment of the tire chains. The switch when activated shall open a frame mounted solenoid, allowing air from the chassis air system to enter the spring loaded air cylinder and lower the chain wheel. The rubber covered chain wheel shall contact the inside of the tire causing the chain wheel to rotate and deploy the chains. The RUD chains shall be operable in either forward or reverse. When the chains are no longer needed the process is reversed, the dash board switch is turned off and the air is exhausted from the cylinder. The return springs in the air cylinder brings the chain wheels back to their resting position.		
TIRE CHAIN SWICH / LIGHT The specified tire chains will be equipped with a red guarded toggle switch. In addition to the switch a light will be provided near the switch to indicate the chains are activated.		
HOSE AND HARNESS ROUTING Battery cables, hydraulic hoses and air lines shall be routed through the vertical face of the chassis frame rails using bulkhead connectors. The use of grommets through frame rails, as well as running hoses or cables under, over or ahead of the chassis frame rails to achieve positive connections shall not be acceptable. For ease of maintenance, the wiring harnesses, hydraulic hoses and air hoses shall be divided down each frame rail. The hydraulic and air hoses shall be run, primarily, down the inside of the right side frame rail, while the electrical harnesses shall be run, primarily, down the left side frame rail. Harnesses and hoses shall be mounted using rubber coated, stainless steel holders and, where necessary, heat resistant zip loom.		
AIR BRAKE SYSTEM		

	Bidder Complies	
	YES	NO
The air brake system shall meet the requirements of FMVSS-121. The system shall consist of three-(3) reservoirs with a total capacity of 5100 cubic inches. The system shall be of dual circuit and quick build up design powered by an engine mounted gear driven air compressor. The system shall be protected by a heated air dryer with heated automatic moisture ejector on the wet tank and quarter turn brass drain valves on the other tanks. The entire chassis air system shall be plumbed utilizing reinforced nylon air lines in conformance to SAE J 844-94, Type B and USDOT standards. All of the airlines shall be color coded to correspond with an air system schematic and shall be adequately protected from heat and chafing. Color coding shall be as follows: Blue: Supply Lines Green: Primary Lines Red: Secondary Lines Orange: Park Brake Lines Yellow: Accessory Lines Purple: Pump Shift - Supply Line White: Pump Shift / Road Mode Line Black: Pump Shift / Pump Mode Line The compressor discharge shall be plumbed with stainless steel braided hose lines with a Teflon lining. The system will be plumbed using color-coded nylon airlines with brass compression fittings.		
COMPRESSOR Air compressor shall be a Wabco brand, minimum of 18.7 cubic feet per minute capacity. Air brake system shall be the quick build up type. The air compressor discharge line shall be stainless steel braid reinforced Teflon hose. A pressure protection valve shall be installed to prevent the use of air horns or other air operated devices should the air system pressure drop below 80 psi (552 kPa). The chassis air system shall meet NFPA 1901 latest edition for rapid air pressure build-up within sixty-(60) seconds from a completely discharged air system. This system shall provide sufficient air pressure so that the apparatus has no brake drag and is able to stop under the intended operating conditions following the sixty-(60) seconds build-up time.		
FRONT AXLE SERVICE BRAKE LOCKING SYSTEM The chassis will be equipped with a front axle service brake locking system. This system will be independently operated with a separate selector on the dash. This selector will be labeled "Front		

	Bidder Complies	
	YES	NO
Brake Lock". The control circuit for this system will only allow application of the front axle service brake engagement when the rear axle parking brakes are applied.		
ANTI-LOCK BRAKES W/ATC & ELECTRONIC STABILITY CONTROL The apparatus shall have a Wabco ABS-based Electronic Stability Control (ESC), which offers another level of vehicle control. This automatic braking management system reduces the possibility of a side rollover and assists in the directional stability of apparatus. Upon reaching critical lateral acceleration thresholds, the system intervenes to regulate the vehicles deceleration and braking functions. Reducing the engine's RPM by overriding the foot throttle input and applying the engine retarder (if equipped) to slow the apparatus giving the driver added control and maneuverability. The ESC shall also apply braking power to selective wheel of the front and rear axles to assist in stabilizing the apparatus to its intended direction. This selective braking application and reduction of speed and torque reduces the possibility of spinouts and side rollovers even in adverse conditions. The system includes a Wabco 4-channel Anti-Lock Braking System shall be installed which includes four-(4) wheel sensors and four-(4) modulators to control and compensate braking force at each wheel. This system shall monitor all wheel ends regardless of suspension type, and which axle it sees braking forces first. An ABS warning light shall be installed on the driver's dash that remains illuminated until the vehicle is moving at least four-(4) miles per hour. An ABS test switch shall be installed in the "Diagnostic Information Panel" that when pressed, sends the system into diagnostic mode causing the ABS light to blink (I/O) indicating a flash code. A listing of flash code definitions is listed in the Wabco Owner's Manual. Automatic Traction Control (ATC) shall be installed to sense wheel slip, apply air pressure to brakes, and reduce engine torque to provide improved traction. An ATC indicator light shall illuminate when the system is active. A mud and snow switch shall be provided. When the switch is in the "ON" position, it shall allow momentary wheel slip to obtain traction under extreme mud and snow conditions. The system also includes a Steering Angle Sensor (SAS), which informs the system of the degree in which the steering is turned to one side or the other. Along with the SAS, an ESC module is mounted mid frame at the rear of the chassis cab to detect roll, pitch, and yaw angles and computes which wheel(s) brake(s) shall be acted upon. **NOTE:** The following restriction apply to the ESC system: 160" - 176" wheel base range with 1500-gallon maximum water on non-aerial units. 177" - 304" wheel base range with 2200-gallon maximum water on non-aerial units. 177" - 304" wheel base range with 2200-gallon maximum water on aerial units.		

	Bidder Complies	
	YES	NO
If the proposed unit does not fall in these parameters then it will have to be tilt table tested.		
DEDICATED AIR HORN RESERVOIR One-(1) 1700 cubic inch additional reservoir will be connected to the chassis air system to provide an air supply for the chassis air horns. This reservoir will include a pressure protection valve on the inlet side to allow full use of this tank without draining air from the chassis air system.		
AIR DRYER The air system shall include a Bendix AD-9 air dryer with integral 12-volt heated moisture ejector. The air dryer shall have a desiccant cartridge and incorporate an integral turbo cutoff valve. The turbo cutoff allows the air dryer to purge water and contaminants without any loss of turbo boost or engine horsepower.		
ENGINE The vehicle shall be equipped with a model year 2022 Cummins L9 450 horsepower turbo charged diesel engine. Model: L9 Number of Cylinders: Six Bore and Stroke: 4.49 x 5.69 Displacement Liter: (Cu. In.) 8.9 (543) Rated BHP: 450 @ 2100 RPM Torque: 1250 ft .lb. @ 1200 RPM Governed RPM: 2200 Oil Capacity / Type 7.3 gallons / SAE CJ-4 Fuel Requirement Ultra low sulfur diesel (15 ppm max.) Standard equipment on the engine shall include the following: Selective Catalytic Reduction (SCR) after treatment Cooled Exhaust Gas Recirculation system Charge air cooling High Pressure, Common Rail Fuel System Fuel Filter with Check Valve and Water Separator Fuel Strainer Governor – Electronic, interact system Injectors – Electronically controlled full authority injection Lube Oil Cooler – Integral Lube Oil Filter – Full Flow Turbocharger – Variable geometry type If a pre-2027 emission engine is **NOT** available at the time of build ***(starting production on January 1, 2026)*** your order will **automatically be upgraded and charged for either the 2027**		

	Bidder Complies	
	YES	NO
engine compliant Cummins X-10 or X-15, with all associated costs being passed on to the end user. No exceptions.		
ENGINE COMPRESSION BRAKE The engine shall come equipped with a Jacobs "C-Brake" compression brake controlled by two-(2) switches located in the cab, an on/off and low/medium/high. The compression brake shall interface with the anti-lock brake controller to prevent engine brake operation during adverse braking conditions. A pump shift, interlock circuit shall be provided to prevent the engine brake from activating during pumping operation.		
ENGINE COOLING SYSTEM The engine cooling system shall have the capacity to cool the engine according to the engine manufacture's requirements.		
RADIATOR The engine radiator shall be of a bolted design and have a minimum core area of 1570 square inches. The top and bottom tanks shall be stamped 11-gauge steel. The tanks shall be attached to the header assemblies with a minimum of fifty-(50), 5/16" bolts. The spacing between fasteners shall not exceed 2.00 inches in order to minimize the possibility of leaks. The header plates shall be made of 16-gauge brass while the tubes shall be .0068-inch thick brass and .076 by .625 inches in size. The tubes shall have a smooth bore with welded seems which allows for cleaning of the radiator. The radiator shall contain three rows of tubes with a minimum of 98 tubes per row for a total of not less than 294 tubes. The tubes shall be arranged in an inline profile across the core. Louvered serpentine fins constructed of copper with a density not greater than 16 fins per inch shall be used in the construction of the radiator. The radiator tubes shall be attached to the header plates with a Beta-Weld dual bonding process. The coolant side connection shall be welded, while the airside shall be soldered. The top tank shall include an integral deaeration tank, which removes air from the engine water. The top tank shall include a sight glass for coolant level inspection without removing the radiator cap. A low coolant warning shall be incorporated to alert the driver.		

	Bidder Complies	
	YES	NO
The bottom tank of the radiator shall incorporate oil to water plate-type cooler for the transmission. The cooler is designed to cause a turbulent flow of the transmission oil through the core to force heat transfer. The cooler shall be sufficient to cool an Allison Transmission without output retarders. To minimize stress from road and engine vibrations on the radiator, a shock mount shall be used. This mounting system shall consist of .375" outside diameter long threaded rods, washers and bolts plus heavy rubber shock absorbers. A high efficiency fan shall be surrounded by a formed welded fan shroud. The sweep of the fan shall not exceed the width of the radiator core. Fan diameters that exceed the width of the radiator core shall not be acceptable.		
CHARGE AIR COOLER The charge air cooler shall be constructed of aluminum with cast, aluminum side tanks. The cooler shall have a frontal core area of not less than 1033 square inches. The exterior fins shall be louvered serpentine design constructed of .006-inch thick aluminum and have a density no greater than seven-(7) fins per inch. The internal fins shall be designed to create air turbulence in order to increase heat transfer efficiency. The charge air cooler shall be mounted directly ahead of the radiator and to the radiator headers. Rubber isolators shall be used at the mounting points to reduce transmission of vibrations. The piping between the charge air cooler and engine shall use four-(4) ply silicone woven Nomex hoses with stainless steel bands. The bands are used to maintain the shape of the hose during changing turbo boost pressures. The hoses shall be attached with stainless steel constant tension hose clamps.		
SKID PLATE, RADIATOR The radiator installation shall include a heavy-duty radiator skid plate to protect the radiator from debris or obstructions under the chassis. The skid plate shall be designed so the angle of approach is not effected. The skid plate shall be integral with the chassis frame and constructed from 3/8" thick steel plate.		
COOLING SYSTEM FAN The engine cooling system shall incorporate a thermostatically controlled fan clutch. When the fan clutch is disengaged, the vehicle shall have improved vehicle performance, cab heating in cold climates, and fuel economy.		

	Bidder Complies	
	YES	NO
The fan shall automatically lock-up when the vehicle is placed in pumping mode. A shroud and recirculation shields system shall be used to ensure that once air has passed through the radiator, the same air is not drawn through again.		
RADIATOR COOLANT, LONG LIFE The coolant system shall contain a mixture to keep the coolant from freezing to a temperature of -34 degrees F. The coolant supplied shall be Long Life Coolant compatible with the engine manufacturer's requirement.		
COOLANT HOSES The chassis shall be equipped with silicone hoses for the radiator and heater circuits.		
COOLANT HOSE CLAMPS Gates PowerGrip clamps shall be provided for all coolant and heater hoses. The maintenance-free clamps retain dynamic tension and never need re tightening. These clamps stop leaks, even on out-of-round applications. The clamps are made from a heat sensitive thermoplastic with memory to prevent over or under tightening. The clamps shall have a temperature range of -40 degrees F to -302 degrees F.		
AUXILIARY ENGINE COOLER The cooling system shall have a tube and bundle engine cooler mounted in the upper radiator water pipe. Water from the fire pump shall be circulated through 1/2" tubing to the cooler. A valve located on the pump panel shall control the cooling circuit.		
ALTERNATOR The alternator shall be a Delco Remy model 55SI 430 amp. The alternator shall be engine driven via a poly-groove power belt with an automatic tensioner. The alternator shall be a brush less design. The alternator shall meet all current applicable NFPA 1901 Edition requirements for performance.		
BATTERY SYSTEM The battery system shall be a single system consisting of six-(6) Exide Group 31, 12-volt DC, heavy-duty, high cycle automotive batteries. The battery bank shall have a group rating of 4500 cold cranking amperes (CCA) and a reserve of 1080 minutes at zero degrees Fahrenheit.		

	Bidder Complies	
	YES	NO
All battery wiring shall be welded battery cable capable of handling 125% of the actual load. It shall be run through a heat resistant flexible nylon "HTZL" loom rated at a minimum of 300 degrees Fahrenheit. All cable connections shall be machine crimped and soldered.		
BATTERY BOXES The chassis batteries shall be mounted in welded and bolted stainless steel battery box. The battery hold-downs shall be made of structural, stainless steel angle. Painted carbon steel battery boxes shall not be acceptable.		
STAINLESS STEEL BATTERY BOX COVERS Each battery box shall include a stainless steel cover which protects the top of the batteries from road spray. Each cover shall include flush latches which shall keep the cover secure as well as a handle for convenience when opening.		
BATTERY JUMPER STUDS One-(1) set of battery jumper studs shall be provided on the chassis. The studs shall be connected to the chassis batteries with 1/0 color coded cables, red for the positive cable and black for the negative cable. The studs shall be protected with color coded plastic covers when not being used. A tag shall be provided for positive/negative terminals. The battery jumper studs shall terminate at the front step well area driver's side.		
SWITCH, MASTER BATTERY DISCONNECT The chassis batteries shall be wired in parallel to a single 12-volt electrical system, controlled through a heavy-duty, Blue Sea brand rotary type, master disconnect switch. The master disconnect switch shall be located within easy access of the driver upon entering or exiting the cab. All electrical circuits shall be disconnected when the switch is in the "OFF" position.		
AIR COMPRESSOR/BATTERY CHARGER A Kussmaul Pump Plus 1200 air compressor and battery charger package Model 091-9-12V-1200 shall be installed. The Auto Pump 12 volt driven air compressor shall ensure that the air brake system is properly pressurized for immediate response of the unit. A pressure switch shall regulate operation and shall automatically sense low air pressure in the brake system and restore the proper pressure. The unit shall have no interference with the vehicle mounted air compressor. The compact compressor shall have sealed bearings and a 15 amp circuit breaker installed in pressure switch assembly. The air compressor power mode selector switch shall select: 1) DC power full		

	Bidder Complies	
	YES	NO
time from vehicle battery 2) AC powered only from the battery when vehicle is plugged into shore power and automatically shuts off air compressor when disconnected from shore power. The air compressor shall have the following ratings: 1) 100 PSI maximum rating 2) Pre-set at 75 PSI "ON" and 95 PSI "OFF" 3) Adjustable differential range of 20 PSI to 100 PSI 4) Output: 0.30 SCFM @ 80 PSI 0.35 SCFM @ 60 PSI 5) Rating: 12 volt at 11 amps The battery charger shall be a Pump Plus 1200 Series 40 amp high output battery charger shall be installed. The charger shall have the following operational specifications: a) 120 volts AC input at 10 amps b) 12 volts DC output at 40 amps The battery charger shall supply a 'single battery bank' with automatic operation and with an aluminum enclosure. The system shall have a built-in sense circuit to check battery voltage 120 times a second; the system shall compensate for voltage drop in charging wires and provide quick recharging with no over-charging. The unit shall include front panel connections for a remote display and auxiliary loads.		
SUPER AUTO-EJECT(S), 20 AMP one (1) Kussmaul Super Auto-Eject type receptacle(s) model 091-55-20-120, 20 amp 120 volt shore power assembly shall be installed. A solenoid wired to the vehicle starter is energized when the engine is started. This instantaneously drives the plug from the receptacle. The receptacle shall be provided with a weatherproof cover. The cover shall be spring loaded to close, preventing water from entering when the shoreline is not connected. The super auto eject receptacle shall be mounted in a location specified by the department and is designed to accept a 120V AC from a shoreline plug. The UL maximum allowable amperage draw on receptacles is generally 80% of their listed rating, for example, the 20-amp receptacle should not carry more than 16-amp continuous load. When adding the different amperage draws of the components being installed on the chassis, be sure to figure in whether the components shall draw a continuous load or intermittent load. The receptacle shall be located in the driver's side cab wheel well area. The Auto Eject cover(s) shall be a Kussmaul 091-55-234-YW, yellow in color. The cover shall include a built in easy to see bar graph indicator display for charging status.		

	Bidder Complies	
	YES	NO
SHORE POWER INLET PLATE A shore-power "Inlet Plate" shall be permanently affixed at or near the power inlet. The plate shall indicate the following: • Type of Line Voltage • Current Rating in Amps • Power Inlet Type (DC or AC)		
TRANSMISSION The chassis shall be equipped with an Allison 3000 EVS automatic transmission. It shall have 4th gear operating controls and programmed for Fire Apparatus vocation. An electronic oil level indicator shall be provided as well as a diagnostic reader port connection. The transmission shall be geared to provide one-to-one ratio in fourth gear for fire pump applications. This dedicated "lockup" circuit is provided for pump operation. The transmission fifth gear shall be an overdrive ratio, permitting the vehicle to reach its top speed at the governed engine speed. The transmission shall be equipped with an automatic neutral feature. Applying the parking brake shall command the transmission to neutral, regardless of drive range requested on the shift selector which shall require re-selecting the drive range to shift out of neutral. The transmission shall be equipped with dual PTO ports with engine speed capabilities. The transmission shall be cooled by the radiator-mounted heat exchanger. The transmission fluid shall meet Allison specification TES-295.		
TRANSMISSION SHIFTER, PUSH BUTTON The transmission shall be controlled by an Allison push button shifter internally illuminated for night operation. The shifter shall be mounted on the dash to the right of the steering column. The transmission shall be capable of four-(4) speed operation with overdrive. When activated the "Mode" switch shall provide the five-(5) speed overdrive condition. The transmission shall be equipped with the oil level sensor (OLS); this sensor shall allow the operator to obtain an indication of the fluid level the shift selector. The sensor display shall provide the following checks, correct fluid level, low fluid level and high fluid level.		
DRIVELINES The chassis shall be equipped with Neapco 1710 series drive shaft with full round yokes and universal joints. The drive shaft tubing shall be a minimum of 4.00" diameter with .134" wall thickness. The drive lines shall be balanced at a minimum of 3000 RPM.		

	Bidder Complies	
	YES	NO
FIRE PUMP MOUNTING Extra heavy-duty mounting brackets shall be bolted to the chassis frame rails for the installation of the fire pump. The mounting brackets shall be positioned aligning the pump insuring the angular velocity of the drive line joints are the same at each end allowing for full capacity performance with minimal vibration.		
FUEL TANK The chassis shall be equipped with a 50-gallon rear mounted fuel tank. The tank shall be constructed of stainless steel with stainless steel mounting straps and rubber isolators secured to the bottom flange of the chassis frame rails. The tank shall be baffled to prevent sloshing, vented, and have a drain plug installed on the bottom. A 240-33 ohm fuel-sending unit shall be provided and broadcast across the SAE J1939 data link. The tank shall be certified to meet FMCSR 393.65 and 393.67.		
FUEL LINES The fuel lines shall be wire braid reinforced fuel grade hose. They shall have reusable fittings and be routed along the inside of the frame rails. Fuel lines shall be protected against chaffing by non-conductive, frame mounted standoff fasteners and, where necessary, with heavy-duty plastic zip loom.		
FUEL SHUTOFF VALVE(S) One (1) fuel shutoff valve(s) shall be installed in the suction side of the fuel lines near the fuel filters to prevent the loss of prime during fuel filter maintenance.		
ELECTRIC FUEL RE-PRIME PUMP An electric fuel re-prime pump shall be mounted near the fuel tank in the suction line. It shall be equipped with a check valve to prevent the fuel from draining back to the tank. A momentary contact switch shall be clearly labeled and mounted on the cab dash.		
FUEL/WATER SEPARATOR, PRIMARY FILTER The Cummins ISL engine shall be supplied with a primary fuel water separator with a bottom drain valve mounted in the chassis frame. The LMC will display "WATER IN FUEL" and an alarm will sound when the water needs to be drained from the fuel water separator.		
FUEL FILTER, SECONDARY The Cummins engine shall be supplied with a secondary fuel filter mounted to the engine.		

	Bidder Complies	
	YES	NO
UREA STORAGE TANK There shall be a 5-gallon urea tank located in the left side of the pump house. There shall be access for filling this tank. There shall be a urea level gage located in the cabs main instrument panel.		
EXHAUST SYSTEM The apparatus shall contain a single module devise that houses a particulate filter and SCR (Selective Catalytic Reduction) downstream of the engine's turbo. This single module devise is required to maintain US 2022 Emissions Certification. This filter and SCR device replaces the conventional style filter. The location has been engineered, tested, and set to allow for proper regeneration. Therefore, this filter cannot be removed, altered, or relocated. A LMC (Lightbar Message Center) shall include lights for this system and shall be located in the cab informing the driver of the systems status. At times a forced regeneration may be required, which would be indicated by a combination of illuminating and/or flashing lights depending on the engine model. A dual momentary switch labeled "REG. INHIBIT / NORMAL / REG. FORCED" shall be located within reach of the driver's seated position. The momentary REG. FORCED position initiates the forced regeneration if a regeneration is required. The momentary REG. INHIBIT position prevents the vehicle from having the ability to regenerate. Once the inhibit feature has been activated the ignition switch must be cycled off/on to return the vehicle to normal regen. All vehicles equipped with pumping applications shall allow for passive regeneration whenever the system requires and the engine is at its proper parameters unless inhibited by the DPF inhibit switch. In no way shall this feature affect the RPM of the engine being controlled by the pump operator. The engine exhaust system shall be horizontal in design using stainless steel tubing mounted under the frame rail right side extending forward of the rear wheels. An exhaust temperature mitigation device shall be installed. The temperature mitigation device shall lower the temperature of the exhaust by combining ambient air with the exhaust gasses at the exhaust outlet.		
HEAT SHIELDS EXHAUST SYSTEM Heat shields shall be provided as needed to prevent damage to body and wiring from excessive exhaust temperatures. The exhaust pipe shall be wrapped in multi-layered insulation blankets, from just aft of the turbo down to inlet side of the DPF. Each blanket shall have a fiberglass inner layer and a silicone impregnated fiberglass cloth outer layer. All harnesses and cables, in proximity to exhaust system components, shall be protected with insulation.		

	Bidder Complies	
	YES	NO
DPF REGENERATION PROCESS NFPA 12.2.6.7.1 the regeneration process shall be activated by two methods: 1) Automatically by the engine system but only when the transmission is in gear and the speedometer indicates a speed above 5 mph (8km/hr) whether the apparatus is in motion or is operating in stationary pump mode with an engine rpm sufficient to register 5 mph (8 km/hr) on the speedometer. 2) Manually when initiated by activation of a switch located in the driver's area of the driving compartment. There shall also be an inhibit switch placed near the driver to inhibit an automatic Regen. The LMC shall include the following three lights. HIGH EXHAUST TEMP, REGEN INHIBIT and DIESEL PART FILTER. The dual momentary switch labeled "REG. INHIBIT / NORMAL / REG. FORCED" shall be installed to the right of the steering column, momentary up shall be Regen Inhibit, middle shall be Normal, and momentary down shall be Reg. Forced. The LMC will light up indicating the regeneration is inhibited whenever the Inhibit has been selected.		
TAIL PIPE ADAPTER There shall be a Plymovent tailpipe adapter, magnetic conical kit installed on the apparatus. The apparatus exhaust system shall be modified to accept the collar.		
CUSTOM CAB The cab shall be custom, fully enclosed, engine forward full tilt cab. The cab shall be an "Open Interior" roll cage design requiring no inner walls or vertical interior supports. All storage areas inside the cab shall fully comply with NFPA 1901 restraint requirements of 9G's. Crash Test The cab shall exceed the strict and detailed requirements of the Economic Commission for Europe Structural Standard, ECE-29R. The test shall consist of an impact load test and a vertical load test to the cab. The cab shall have a frontal impact tests via pendulum, with an impact load in excess of 127% of the ECE-29R Standard. The estimated speed of the 3736-lb (1698-kg) pendulum shall be a minimum of 18.2 mph. The cab doors shall be closed during the impact test but be able to open		

	Bidder Complies	
	YES	NO
after impact. There shall be no passenger intrusions or any structural component failures. The cab shall meet or exceed all criteria of this portion of the test. In conjunction with the frontal impact test, a vertical load test shall be implemented to the cab. The cab roof shall be loaded with a minimum of 65,979 lbs. (29.53 metric tons). There shall be no failure to the cab structure or mountings, any passenger compartment intrusion or degradation of occupant survival space, or any other structural failure. The cab shall meet or exceed all criteria of this portion of the test. A complete photographic, video, data, and dimensional record of these tests shall be available and placed on record for customer evaluations. <u>Cab Material</u> The cab shall be constructed entirely of aluminum alloy extrusions and 3/16" (.188) thick, 5052-H32 alloy, marine grade aluminum sheets. The corner posts, door slam posts, roof rails and doorframes shall be made of custom extrusions designed specifically for this cab with slots for inserting the skin. The rear wall and roof shall be reinforced with a grid of rectangular extrusions, which are welded to the overall cab extrusion framework. The front corner caps shall consist of castings designed specifically for this cab with relief areas cast in place for attachment of roof skin and intersecting structural extrusions. Overlapping formed corner caps are not acceptable. <u>Cab Face, Double Wall</u> The cab front shall be of double wall construction resulting in a sealed firewall. The inner and outer shall both be formed from 3/16" thick, 5052 H32 alloy aluminum with structural aluminum reinforcements. This design provides for increased structural integrity, crew safety, and reduced road noise in the passenger area. The outer wall is used for mounting forward lighting, grill and windshield wipers. The inner portion shall be treated with a heavy black undercoating material for corrosion prevention. <u>Cab Floor</u> Cab floors shall be constructed from an aluminum extruded frame and 3/16" thick aluminum plate. Floor mats and insulation are detailed later in this specification. The forward cab floor shall be as large as possible for both the driver and officer. Floorboards shall extend in width from the side of the engine tunnel, all the way to the cab door inner panel. They shall extend forward from the seat riser to the inner portion of the double wall cab face. The officer shall have approximately 28" of foot room. The entire rear floor of the cab, to reduce trip and fall hazards, shall be a single plane. In applications requiring the use of a top-mounted PTO, a raised area in the floor may be required.		

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	Bidder Complies	
	YES	NO
For maximum crew comfort and eliminate leg fatigue during emergency responses, the floor beneath the rear facing jump seats shall be large enough for a seated firefighter to rest both feet side-by-side. Cab floor designs that are wide enough for only one foot shall not be accepted. Cab Corrosion Protection A corrosion preventative material shall be applied during cab construction. A ten-(10) year warranty against corrosion perforation shall be provided for the cab. Wheel Well Liners Full wheel well liners shall be installed beneath the cab to protect the bottom of the cab from road splash. The liners shall be constructed of aluminum and be full width. The wheel well liners shall be attached with threaded fasteners and be easily removable for service. Windshield Wipers, Intermittent Two-(2) electric "Pantograph" style windshield wipers shall be installed on the front face of the cab. The motors shall operate through a 72-degree sweep and include 24-inch blades to give superior wiper coverage. A washer reservoir of not less than 70 ounces shall be mounted a latched door recessed in the officer's step. A switch located on the turn signal control arm shall operate the intermittent wipers. Cab Interior, Extreme Duty Cab floors shall be covered with a pebble grain rubber matting with barrier type insulation. Edges of the insulation shall be trimmed with a cast aluminum foot plate for a pleasing appearance. An insulated covering shall be fitted over the engine tunnel. Made from the same material as the cab floor insulation, this covering shall insulate the cab from engine heat and noise. A Cast Products aluminum door on the engine tunnel shall provided access for fluid checks. The back side of the engine cover, as well as a 2" to 3" return on the top side, shall be covered with a sprayed aluminum panel and be of sufficient strength to allow for 9G resistant mounting of any optional hand lights, entry tools, or other fire rescue equipment specified by the customer.		

Montville Bid Specifications

	Bidder Complies	
	YES	NO
The cab shall have a custom built, smooth aluminum plate dashboard, overhead console, glove box, instrumentation panel and switch panel. The front overhead shall include room for the three sun visors and the door open indicator light. The front door posts shall be trimmed with styled aluminum covers that conceal any wiring, as well as including a mounting area for rubberized grab handles. The center windshield post shall be covered F-Shield paint finish. Prior to installing the headliner and rear wall padding, minimum R-7 insulation, shall be installed between the interlocking extrusions. These covers serve to finish the interior, cover wiring harnesses and insulate the interior from sound and heat. <u>Cab Steps</u> All cab steps shall be of a stationary, fixed design that use no moving parts and requires no periodic maintenance other than cleaning. There shall be an open-grip, bright finish step at each cab door opening. The area under the step shall be enclosed to prevent road dirt from entering the cab. There shall be provisions made at the front of the step for easily flushing out any dirt accumulation. At each door, opening there shall also be an intermediate cab step. Intermediate steps shall be full width of the doorstep area and overlaid with embossed aluminum tread plate. <u>Cab Step Heights</u> The distance from level ground to the first cab step shall be 19-21 inches without using swing-down style or under-cab stirrup auxiliary steps. The distance from first cab step to intermediate step shall be approximately 12-1/2 inches front and rear. The distance from intermediate step to cab floor shall be approximately 9-1/2 inches in the front and 12 inches in the rear. <u>Cab Style</u> The cab will be a SMFD (short medium four door) with seating up to six-(6) seating positions. <u>Cab Dimensions</u>		

	Bidder Complies	
	YES	NO
The exterior width of the cab will be 100" wide (skin to skin) and 120" wide with standard mirrors. The overall cab length will be 119" with a dimension of 45" from the centerline of the front of the axle to the back of the cab. Sealed Engine Tunnel The engine tunnel shall be a structural part of the passenger cab, constructed from welded 3/16" aluminum plate and reinforced with aluminum extrusions. The rear of the engine tunnel shall be no less than 40" inches from the rear wall of the cab, allowing maximum legroom for forward facing passenger. After welding, the seams shall be completely sealed with silicone caulking. Engine enclosures that are not an integral part of the cab structure are not acceptable. The interior of the engine tunnel shall be insulated with 1" thick foil backed insulating foam, attached with stud and button method. A cross-section analysis of the insulation shall reveal a 1/8" thick barrier material for additional noise and heat insulation. The engine tunnel height will not exceed 27-1/2" front to back and side to side.The driver will have no less that 24-1/2" hip room and the officer no less that 23-1/2" of hip room. Windshield The standard windshield shall have approximately 4200 square inches of unobstructed viewing area. It shall be a two-(2) piece design with tinted automotive safety glass, with a wraparound design. A .030-inch thick vinyl layer shall separate the laminated glass. All other cab glass shall be tinted and tempered. Cab Roof The cab roof will be flat. The cab will offer an interior height of 60" from the front floor to the headliner and a rear floor to headliner height of 58".		
CAB DOORS All cab doors shall be full length, designed to cover the step well area. Each cab door shall be flush type with a minimum opening of 85 degrees. The front doors shall be approximately 40" inches wide by 78-1/2" inches tall. The doors shall have a two-piece window, one operational and one fixed. The combined viewing area shall be no less than 796 square inches. For added safety, the front door windows shall slant down for maximum visibility.		

	Bidder Complies	
	YES	NO
The rear doors shall be approximately 34" inches wide by 78-1/2" inches tall. The doors shall have a two-piece window, one operational and one fixed. The combined viewing area shall be no less than 694 square inches. The crew area windows shall have a dark tint. The doors shall include a bulb style rubber seal around the perimeter of each door frame ensuring a weather tight fit. The cab entry doors shall be equipped with exterior paddle handles, suitable for use while wearing firefighter gloves. The handles shall be made of aluminum with a chrome plated finish. The interior latch shall be cast aluminum, oversized for easy access with a gloved hand.		
HINGES, CAB DOOR Each cab door will be attached to the cab with full length stainless steel piano hinge with restraining strap.		
CAB DOOR LOCKS There shall be individual manual twist type door locks at each door interior handle. In accordance with FMVSS 206 all exterior door locks shall be keyed alike.		
CAB DOOR WINDOWS, ELECTRIC All cab door windows shall be electrically operated. The driver shall have four-(4) switches located overhead to control the operation of each door. All remaining doors shall contain one-(1) heavy-duty switch to control the window operation located on top of the door panel. NOTE: On the E2020 electrical system the power windows can't be wired to direct battery power.		
DELETE LEFT SIDE FIXED CAB WINDOW The left sidewall cab window between the front and rear door will be deleted to accommodate an exterior access door for the crew cab EMS compartment or a smooth exterior surface.		
DELETE RIGHT SIDE FIXED CAB WINDOW The right sidewall cab window between the front and rear door will be deleted to accommodate an exterior access door for the crew cab EMS compartment or a smooth exterior surface.		
CAB TILT LOCK The cab shall be supported at four points. At the front, there shall be two center bonded bushings. At the rear, there shall be two hydraulic locking latches.		

	Bidder Complies	
	YES	NO
The cab shall tilt 45 degrees by means of a pair of hydraulic cylinders driven by the electric pump. The tilt system geometry shall be designed in such a way that the maximum hydraulic pressure in the system does not exceed one-half the pressure rating of the cylinders or pump when the cab is empty. This allows the Fire Department to leave some equipment in the cab when maintenance is required (although this equipment must be secured). Once the cab is fully tilted, a safety latch shall automatically engage and act as a positive lock. The lock is released by a pull cable. The hydraulic cylinders shall be equipped with velocity fuses to prevent the cab from falling, should the hydraulic system fail. The front of the cab pivots and rides on the center bonded bushings by means of lubricated pivot pins that retain the cab yoke in the bushings. The bushings allow limited movement of the cab, and isolate the cab from noise and vibration. The rear mounts consist of a pair of hydraulic cab latches mounted on rubber cushioned mounting brackets. Latches release when the pressure in the tilt system exceeds 500 PSI. An ignition interlock system shall be installed for cab tilt operation. Cab tilt operation requires the master battery switch to be in the on position with the parking brake applied.		
CAB TILT PUMP An electric over hydraulic cab lifting pump shall be provided to tilt the cab for engine and transmission service. The pump shall be operated by a remotely wired control box with coiled cord, weather resistant plug, and receptacle. An interlock shall be provided preventing the cab from inadvertently rising until the transmission is placed in the neutral position and the parking brake is set. The entire cab shall be capable of tilting approximately 45-degrees to allow for easy maintenance of the engine and transmission.		
FRONT GRILLE, CAST ALUMINUM The front grille will be a cast aluminum assembly with 470 square inches of open area on 100" wide cabs and 430 square inches of open area on 96" wide cabs. The grille will be backed with an aluminum honeycomb mesh to protect the radiator.		
FRONT GRILLE LOGO The front grille will have a custom logo that reads MONTVILLE with backlit red LED lights that area activated by the battery on/off switch.		
INTAKE GRILLE, RIGHT SIDE W/EMBER SEPARATOR		

	Bidder Complies	
	YES	NO
A right stainless steel grille shall be installed approximately 70" above ground level on the right side of the cab between the front and rear cab doors. The grille shall have a minimum open area of not less than 119 square inches serving as an air intake and warm air dispersant system. An Ember Separator shall be installed between the stainless steel grill and the air filter system allowing fresh air to pass through to the engine while preventing particles of .039 inches (1.0 mm) or larger from entering the system in accordance with the latest version of NFPA easily accessible through the exterior stainless steel grille. The grille shall be notched to allow easy access without removing the cab handrail.		
HEATED/REMOTE CAB MIRRORS Two-(2) Lang-Mekra 300 series AERO side-mounted rear view mirrors shall be installed with a 14-1/2 x 7" mirror head and a separate 6" x 8" parabolic mirror. The mirror head shall be heated and remotely adjustable by the driver. The mirrors shall be aerodynamically designed to reduce wind buffeting and resultant vibration. The mirrors support tubes shall be 7/8" stainless steel, with breakaway mounting brackets. The cab mirror rear housings shall be chrome.		
MIRROR, EYEBALL A Rosco 801DSSP, 8" diameter stainless steel convex mirror shall be installed. The mirror shall be mounted on the right front of the cab above the windshield on a stainless steel mounting bracket, suitable for viewing front of apparatus from cab interior. The mirror shall be designed and installed in a manner that prevents vibration.		
EXTERIOR HANDRAILS, CAB Four-(4) exterior handrails shall be installed on the cab, one-(1) each side just rearward of the front doors and one-(1) each side just rearward of the rear doors. The handrails shall be 24" in length and constructed from knurled stainless steel with a slip-resistant finish. The handrails shall be mounted with chrome plated end stanchions and will have a molded rubber gasket shall be mounted between the handrails and the cab in order to prevent corrosion.		
FENDERETTES, POLISHED STAINLESS STEEL The cab fenderettes will be bright polished stainless steel securely fastened to the cab wheel wells on each side. A rubber gasket will be installed between the fenderettes and cab to eliminate contact of dissimilar metals.		

	Bidder Complies	
	YES	NO
EXTERIOR TRIM, REAR CAB STEP WELL The rear cab door stepping surfaces shall be trimmed with aluminum tread plate. There shall be tread plate covers that provide access to the chassis battery system.		
TREAD PLATE BACK OF CAB The entire back wall of the cab shall be covered with 1/8" (.125") thick aluminum tread plate. The tread plate shall be fastened to the cab with stainless steel fasteners. A bead of caulking shall be applied to the perimeter of the tread plate.		
UNDER CAB INSULATION The underside of the cab tunnel surrounding the engine and the underside of the entire cab floor shall be lined with multi-layer insulation, engineered for application inside diesel engine compartments. The insulation shall act as a noise barrier, absorbing noise thus keeping the decibel level in the cab well within NFPA recommendations. As an additional benefit, the insulation shall assist in sustaining the desired temperature within the cab interior. The engine tunnel insulation shall measure approximately 0.75 inch thick including a vertically lapped polyester fiber layer, a 1.0 lb/ft2 PVC barrier layer, an open cell foam layer, and a moisture and heat reflective foil facing reinforced with a woven fiberglass layer. The foil surface acts as protection against moisture and other contaminants. The insulation shall meet or exceed FMVSS 302 flammability test. The cab floor insulation shall measure .56 inch thick including a 1.0#/sf PVC barrier and a moisture and heat reflective foil facing, reinforced with fiberglass strands. The foil surface acts as protection against moisture and other contaminants. The insulation shall meet or exceed MVSS 302 flammability test. The insulation shall be cut precisely to fit each section and sealed for additional heat and sound deflection. The insulation shall be held in place by 3 mils of acrylic pressure sensitive adhesive and aluminum pins with hard hat, hold in place fastening heads.		
CAB CORROSION PROTECTION AND SOUND DEADENING The apparatus cab shall be completely covered in one of two types of paint, prior to installation of any interior or exterior components, including insulation and floor mats. This process shall be required to guard against corrosion as well as to keep the cab as quiet as possible for firefighters. The entire underside and double wall area at the front of the cab shall be cleaned, primed and sprayed with black F-Shield as a finish coat. This shall include any areas that are not normally visible after the cab is complete.		

	Bidder Complies	
	YES	NO
The entire cab interior shall be sprayed with F-Shield, as described later in these specifications. F-Shield shall be sprayed over the ceiling, floor, side walls, forward fire wall, rear wall, dash, engine tunnel, interior cab doors and both sides of the cab door panels. The cab exterior shall be completely finish painted as described later in these specifications. This shall include the areas under any optional rear wall or cab roof diamond plate overlays. The fire department shall, through the Virtual Manufacturing feature described earlier in these specifications, have the ability to see these areas covered with F-Shield prior to installation of items such as engine tunnel insulation, cab interior insulation and headliners, engine tunnel covering, floor mats, cab inner door panels, etc. As a result of these cab corrosion protection measures, a ten-(10) year warranty against cab corrosion shall be provided to the fire department.		
INTERIOR CAB FINISH The interior of the cab will be painted with a black "F-Shield". The cab metal finish will be covered with a coat of adhesion promoting primer. The headliner (front and rear) and rear wall (if applicable) will be covered with heavy-duty black vinyl.		
FLOOR MATS/ENGINE TUNNEL COVERING The floor mats and engine tunnel shall be covered with black pebble grain vinyl with 1/4" (.250") foam backing. The edges of the floor mats shall be trimmed with a cast aluminum foot plate for a pleasing appearance.		
INTERIOR TRIM, REAR WALL ALUMINUM PANEL The entire interior rear wall of the cab shall be covered with 3/16" (.1875") smooth aluminum plate coated with "F-Shield". The color of the rear wall panel shall match the interior of the cab.		
CAB GRAB HANDLES, INTERIOR Two-(2) interior grab handles installed in the cab on the "A" posts, one-(1) each side. The grab handles shall be constructed of rubberized steel. Four-(4) interior grab handles installed in the cab, one-(1) each side on top of the front door panels adjacent to fixed window and one-(1) each side on the rear door panels mounted		

	Bidder Complies	
	YES	NO
diagonally. The grab handles shall be constructed of 1-1/4" knurled stainless steel. The gab rails shall be mounted with chrome plated end stanchions. There shall be one-(1) interior grab handle installed on the inside of each rear cab door. The handles shall extend horizontally with width of the window just above the window sill. The grab handles shall be constructed of bright stainless steel.		
DASH AREA, OFFICER'S SIDE The officer's dash area will be recessed down to allow for mounting of a MDT. This option will remove the standard glove box.		
GRAB RAIL, OFFICER'S DASH A knurled stainless steel handrail will be provided on top of the dash in front of the officer.		
SUN VISORS The cab shall be equipped with three-(3) sun visors. The visors shall be installed on the overhead panel and provide approximately 90 percent coverage across the width of the cab. The visors shall be approximately 26" wide and 6" tall		
UPPER DOOR PANELS, INTERIOR There shall be four-(4) interior upper front and rear door panels installed covered with "F-Shield" extending from the window down to the lower kick plate. The color of the panels shall match the interior of the cab.		
LOWER DOOR PANELS, INTERIOR There shall be four-(4) interior lower front and rear door panels installed covered with "F-Shield" extending from bottom of the upper panel to the bottom of the door. The color of the panels shall match the interior of the cab.		
INTERIOR DOOR STRIPING, REFLECTIVE There will be a minimum 96 square inches of a single color reflective material installed on the inside lower panel of each cab door. Color: White		
EQUIPMENT MOUNTING PLATE, ENGINE TUNNEL There shall be one-(1) equipment mounting plate installed on the engine tunnel constructed of 3/16" smooth aluminum plate covered with "F-Shield".		

	Bidder Complies	
	YES	NO
The mounting plate will be raised up 1" from the top of the engine tunnel.		
INSTRUMENTATION For easy viewing, gauges shall be white faced with black lettering and adjustable intensity LED backlighting. The gauges shall meet SAE J-1939 protocol to eliminate redundant sending units. The gauge crystal shall be flat glass with rubber o-ring seal. The panels shall be divided into groups of instruments that make identification sensible and easy to view. The following instruments shall be included in the gauge panel in front of the driver: Left Side- An all in one gauge that contains; dial type tachometer, dial type engine oil pressure with warning light and alarm and dial type engine coolant temperature with warning light and alarm. Center- -Driver information display panel with alarm output for gauge warning lights -Dial type transmission temperature gauge with warning light -Dual diesel fuel/DEF level gauge with low level indicators Right Side- An all in one gauge that contains; dial type speedometer, dial type primary air pressure gauge with warning light and alarm and dial type secondary air pressure gauge with warning light. The following indicator lights shall be provided in the gauge panel: -Air cleaner restriction light -High beam indicator -Parking brake indicator -Turn signal indicators -Low primary air -Low secondary air -Battery voltage error -Door ajar -Auto chassis lubrication system (if equipped) -Emergency engine shutdown (if equipped) -Diagnostic indicators for airbag (if equipped), engine, transmission and ABS The electronic diagnostic connections for the engine, transmission, and ABS brakes shall be located in the lower left firewall. Service Access The driver's instrumentation area shall be made of textured black non-glare panels affixed to the aluminum dash. There shall be a single gauge panel, secured with a bottom hinge and four-(4) quarter-turn fasteners. Access to the gauge clusters shall be accomplished simply by releasing the latches and pulling the panel outward. Other gauge access designs are not acceptable.		

	Bidder Complies	
	YES	NO
The chassis electrical access panel shall be located in the center of the aluminum dash, between the switch panel and the windshield. There shall be a lift up cover, with two-(2) recessed lift-and-turn latches for quick access to the panel. The opening to the electrical shall measure approximately 15" wide near the switch panel and 37" wide toward the windshield.		
DRIVER'S INFORMATION DISPLAY There shall be a 10.8" x 2.44" display panel on the driver's gauge cluster that will illuminate various caution and warning indicator lamps. This display also contains a 340 x 90 monochrome LCD for display of specific and user selectable data. The display unit reads data from the J1939-11 power train communications network. Display will be capable of but not limited to the following features: -Auto Self-Test -Viewing the state of each digital or analog input to the unit -Viewing the state of each output -Allows users ability to set service reminders by distance or hours of operation -Allows users ability to set data screens in various formats i.e. bar graph / text -Viewable active and stored power train ECU fault data. -Diagnostics screen allows user to select and view a specific source such as engine / transmission -Display is selectable between English and metric readings. -Messages and Icons will pop up in display when a condition exists such as: transmission oil life, filter or other service needed as reported by the Allison Transmission ECU engine conditions: low oil pressure, high coolant temperature, low coolant level, water in fuel, check / stop engine, regeneration needed, high exhaust temperature Indicator lights may also accompany pop up messages: Door ajar indicator will also pop up a "Do Not Move Vehicle, Check all doors and Items that Raise or extend beyond apparatus cab or body" message		
ELECTRICAL SYSTEM, CHASSIS The electrical system shall consist of all solid-state components contained inside sealed aluminum castings and/or weatherproof Deutsch enclosures. Each module is to have a set of diagnostic LED indicators. All inputs and outputs shall be configured into a scalable electrical harness utilizing Deutsch connectors. The modules shall not have special mounting requirements. The system shall consist of a main solid-state control module and the appropriate combination of solid-state distribution modules, switch modules, and other solid-state modules as required for the application. The system will also include a 5-inch screen mounted in the driver side overhead area. This screen will display door ajar & seat belt warnings, electrical system diagnostics and informational screens. The electrical system will also utilize programable Smart Switches, these switches will utilize both ICON and text engraved covers. The switches will be backlit Red when the system is		

	Bidder Complies	
	YES	NO
powered up & the switch is not active. When the switch is activated, the ICON on the switch will change color to either, Green, Blue or Cyan, depending on the switch function. The system, at a minimum, shall be capable of performing the following functions: -Load management and sequencing -Switch loads -Receive digital and analog signals -Perform and report diagnostics -Continuously report vehicle status -System is expandable The main solid-state control module shall have an integrated Load Manager. The Load Manager Sequencer shall assure that loads are applied and removed gradually, thus eliminating the possibility of inducing failures in the vehicle's equipment. The load manager shall be a precision, solid state controller which sequentially switches "ON" multiple circuits at 1/2 second intervals. The sequencer shall be initiated by the "Emergency Master" switch. The sequencer priority shall be set at the apparatus pre-build conference. The Load Manager shall monitor the vehicles battery voltage. Loads may be shed at any voltage at one tenth of volt increments. A low voltage warning may be set at any set point (usually 11.5 volts). The load manager can shed any output that is controlled by the system (there is no limit to the number of loads that may be managed by the network).The load shed priority shall be set by the circuit significance, followed closely by circuit draw. The Load Manager shall shed loads until the voltage level begins to rise. A voltage monitor shall be built into the electrical system. It shall activate a warning when the alternator output voltage falls below any desired voltage (usually 11.8 volts). Placement of modules within the cab enables a reduction in wire harness bundles. Elimination of redundant harnessing and separate circuit boards, relay and circuit breakers & electrical hardware. Reducing separate electrical or interlock subsystems and associated electronics for controlling various electrical loads and inputs. The electrical system shall utilize a Controller Area Network (J1939) protocol to provide control signals for "real time" operation. The electrical system shall be field reprogrammed and re-configurable by an authorized service center. This complete system eliminates the need for the following separate components or devices: load manager, load sequencer, warning lamp flasher, headlamp flasher, door open notification system, interlock modules, and VDR. The base system includes: -Total Load Management -Load Shedding Capabilities		

	Bidder Complies	
	YES	NO
-Load Sequencing Capabilities -On- Board Diagnostics Readout -Very reliable, solid- state hardware -Error Reporting -Continuous system monitoring and reporting -Emergency warning lamp flasher -Field Configurable -Expandability Capabilities -Advanced PC Diagnostics -VDR The wiring harness shall conform to SAE J-1128 with GXL temperature properties. All exposed wiring shall be run in loom with a minimum 289 °F rating. All wiring looms shall be properly supported and attached to body members along the entire run. All wiring shall be mounted as to provide protection from water and heat. All connections shall be crimp type with heat shrink tubing with insulated shanks to resist moisture and foreign debris such as grease and road grime. Weather resistant connectors shall be provided throughout to ensure the integrity of the electrical system. Gold contacts shall be used where required for superior connectivity and improved performance. All wiring looms shall be properly supported and attached along the entire run. At any point where wire or looms must pass through metal, rubber grommets shall be installed to protect the wire from abrasion. Wiring shall be individually and permanently numbered, function and color-coded using an indexing numbering system in which all circuits are categorized by function and shall be permanently marked every three-(3) inches on the insulation to allow for easy identification. All internal wire end terminals, including locking bulkhead connectors, shall be mechanically affixed to the wire ends by machine terminal crimping presses. No hand-crimped terminals shall be acceptable. All internal splices shall be ultrasonically welded connections - no butt style connections shall be acceptable. All internal wiring shall be of the high temperature GXL type wire and shall be protected by wiring duct wherever possible. As programmed electrical system reports shall be generated by the electrical system software and furnished in the apparatus manuals. A master circuit list of electrical circuits that the apparatus builder installs shall be furnished in the delivery manuals.		
MAIN CENTER DASH The main center dash area will include three-(3) removable panels located one-(1) to the right of the driver position, one-(1) in the center of the dash and one-(1) to the left of the officer position. The dash layout will as close as possible to H5747.		

	Bidder Complies	
	YES	NO
DASH APPROVAL DRAWING A dash layout drawing will be provided for customer approval.		
STEERING COLUMN The steering column shall be a Douglas Autotec tilt and telescope. A lever mounted on the side of the column shall control the tilt and telescope features. A Signal-Stat (self-canceling) turn signal switch shall be mounted to the column. The steering shaft from the column to the meter box shall have a rubber boot to cover the shaft slip and a second rubber boot to seal the passage hole in the floor. The steering wheel shall be 18 inches in diameter. The Signal-Stat turn signal switch shall include the following functions: • Left and right turn signals • High beam dimmer control • Hazard warning switch • Two speed with intermittent windshield wiper control • Windshield washer control		
HEATING/AIR CONDITIONING SYSTEM The climate control system shall use three-(3) heater-air conditioner units. The front circuits shall use two-(2) heater-air conditioning units, mounted under the dash on the driver's side and under the officer's side. These units are each rated at 14,700 BTU heating and 19,200 BTU cooling. The units shall blow up toward the windshield through four-(4) fixed vents in the dash. Additionally, there shall be two-(2) adjustable vents each side to direct air at the lower portion of the driver and officer seating areas. Two-(2) switches, including low/med/high and heat/off/ ac, shall control the front system. A DEFROST / DEFOG switch shall be installed to operate both the front heating, systems in the DEFROST selection to provide pure heat for defrosting. In the DEFOG selection the front heating, and cooling systems are activated. This provides hot and dry air for defogging purposes. In either postion the hot and dry air shall vent through the fixed vents in the dash. The two-(2) front systems shall combine to put out a total of 688 CFM air flow. The rear circuit shall use one large heater-air conditioner unit with a rating of 34,150 BTU cooling and 36,000 BTU heating. It shall be mounted under the forward facing rear seats. Ducting shall run up the rear wall to adjustable vents (minimum of six) running along the center of the ceiling toward the front of the cab. Two-(2) switches including high/med/low and		

	Bidder Complies	
	YES	NO
heat/off/AC shall control the unit. In addition to the rear control switches, there shall be an ON/OFF switch located near the driver to disable the rear unit if needed. The rear system shall put out a total of 640 CFM air flow. The total system shall have a capacity of 72,550 BTU cooling, 65,400 BTU heating and a total in-cab air flow of 1,328 CFM. The entire roof and back wall shall be heavily insulated with 1" foam to enhance the cooling system. All three-(3) heaters shall be plumbed with a shut off valve at the engine. The air conditioning system shall be powered through two-(2) engine driven 9-1/2 cubic inch compressors. Two-(2) roof top condensers, each rated at 38,700 BTU, shall be provided. The two-(2) roof top condenser housings will be painted a color other than the standard black. The Fire Department will specify the exact paint color. Job Color White		
SEAT MATERIAL The seats shall be covered with VALORTech XD upholstery.		
SEAT COLOR The cab seats shall be black in color.		
SEAT BELTS, ABTS w/DUAL RETRACTORS The seats shall be equipped with a red integrated 3-point shoulder harness with lap belt, and a dual retractor belt configuration with ready reach built into the seat assembly.		
IMMI KOMFOR LATCH Each seat belt will be equipped with an IMMI Komfort Latch.		
BRACKETS, SCBA SEATS There shall be one-(1) IMMI Smartdock SCBA Locking System provided with each SCBA seat. The bracket system shall be free of straps and clamps that may interfere with auxiliary equipment on SCBA units. A patented spring loaded release mechanism within the docking system, allows		

	Bidder Complies	
	YES	NO
the occupant to disengage the SCBA from the seat by simply standing with SCBA on their back. NFPA 1901, 2016 compliant and third party tested to exceed NFPA 9G standard. Smartdock fits most SCBAs with only minor adjustments.		
NO FILLER PANELS REQUIRED No SCBA seat filler panels shall be provided with the apparatus.		
DRIVER'S SEAT The driver's seat shall be a USSC Valor air suspension, race back bucket seat. The seat shall have a contoured and padded seat cushion with adjustable lumbar support. The seat shall have a 6" horizontal slide adjustment, and 3" vertical height adjustment with back recline. The seat air suspension shall be pneumatically controlled from a switch on the forward lower edge of the seat.		
OFFICER'S SEAT The officer's seat will be a USSC Valor fixed base SCBA seat. The seat will have a contoured and padded seat cushion. The seat shall include a dynamic SCBA storage area with integral headrest. The seat shall be equipped with magnetic SCBA strap holders which secure the SCBA straps.		
CREW SEAT, DRIVER'S SIDE REAR FACING The outboard rear facing seat installed behind the driver shall be a USSC Valor fixed base SCBA seat. The seat will have a contoured and padded seat cushion. The seat shall include a SCBA storage area with integral headrest. The seat shall be equipped with magnetic SCBA strap holders which secure the SCBA straps.		
CREW SEAT, OFFICER'S SIDE REAR FACING The outboard rear facing seat installed behind the officer shall be a USSC Valor fixed base SCBA seat. The seat will have a contoured and padded 20" seat cushion. The seat shall include a SCBA storage area with integral headrest. The seat shall be equipped with magnetic SCBA strap holders which secure the SCBA straps.		
ACCESSORY PANEL, BLUE SEA There shall be a blue sea model 4365 12-volt accessory panel. The panel shall be equipped with one-(1) 12-volt socket outlet and two-(2) 2.1 amp USB connections. The panel shall be wired to direct battery power with the appropriate wire size and fuse. The panel shall be in the center emergency switch panel below the Whelen siren.		

Montville Bid Specifications

	Bidder Complies	
	YES	NO
12-VOLT FUSE BLOCK(S) There shall be two (2) Blue Sea fuse block(s) 5025 installed in a location determined by the customer. The unit shall include a six-(6) 12 volt constant power supply ports and grounding buss with easily changeable fuses. The unit shall have a 100 amp total operating range. There will be one-(1) fuse block located on the side of the engine tunnel behind the driver's seat and one-(1) on the driver's side upper outboard corner of the interior rear cab wall The fuse blocks will be wired battery direct.		
MAP BOOK HOLDER A map book holder shall be installed in the cab as directed by the Fire Department. The map book holder shall be constructed of smooth aluminum with a Velcro retaining strap. The map book holder shall be painted to match the interior color of the cab. The exact location of the map box will be located at Final Inspection.		
RADIO ANTENNA / WIRING four (4) antenna base(s), for use with an NMO type antenna, will be mounted on the cab roof so not to interfere with light bars or other roof mounted equipment. The antenna base will include 17' of RG58 A/U cable with no connector at the radio end of the cable. The antenna base design provides the most corrosion resistance and best power transfer available from a high temper all brass construction and gold plated contact design. The coaxial cable will be run to the area behind the officer seat.		
RADIO POWER CIRCUIT A 50 amp switched battery power circuit with manual reset will be installed behind the officer's seat to activate the radio. Location: In the area behind the officer seat.		
ACCESSORY POWER The electrical distribution panel shall include two-(2) power studs. The studs shall be size #10 and each of the power studs shall be circuit protected with a fuse of the specified amperage. One-(1) power stud shall be capable of carrying up to a 40 amp battery direct load and one-(1) power stud shall be capable of carrying up to a 20 amp ignition switched load. The two-(2) power studs shall share one-(1) #10 ground stud.		
ELECTRONIC SIREN		

	Bidder Complies	
	YES	NO
There shall be one-(1) Whelen model 295SLSA1 siren provided in the cab. The siren amplifier shall incorporate a 12V/200W siren installed on an aluminum alloy chassis covered by a black polycarbonate powder coated housing for maximum protection. The 295SLSA1 shall have the ability for either 100 or 200 watt output. The front overlay shall be made of velvet Lexan™ with a matte finish. The lettering and artwork on the overlay shall be illuminated with adjustable backlighting of soft LED non-glaring green. The operating controls will consist of a power switch, manual button, PA volume switch, horn button, and rotary switch. The 295SLSA1 PC board shall have input polarity protection, output short circuit protection. The siren amplifier shall include a 20A/32V fuse. The solid state siren speaker amplifier shall be vibration resistant. The microphone shall be hardwired to the 295SLSA1. The 295SLSA1 shall have 21 Scan-Lock™ siren tones with two manual functions for additional siren tones. The siren amplifier shall have the ability to customize the placement of each siren tone with the rotary switch. The siren amplifier shall have a "Siren in Use" icon driver and adjustable preset repeat radio volume. The 295SLSA1 shall have a "Park Kill" feature that disables the siren when the vehicle is in park. The PTT (push to talk) switch on the microphone shall override all siren functions. The 295SLSA1 shall have a combination On/Off and horn ring transfer switch with Bi-polarity horn/ring activation control. The 295SLSA1 shall have SI Test® capability to perform a complete diagnostic silent test of amplifier and speaker(s). The siren amplifier shall have a quick disconnect plug. The 295SLSA1 shall have the ability to activate siren tones with "Aux Enable" input either with a slide switch, power controls, or relay-to-ground connector. The 295SLSA1 shall meet Class A requirement for SAE, AMECA, KKK1822, and California Title XII. The sire amplifier shall have an adjustable bail bracket with installation hardware. The 295SLSA1 is covered by a two year factory warranty.		
HORN, ELECTRIC A single electric horn activated by the steering wheel horn button shall be provided.		
BACK-UP ALARM There shall be one-(1) NFPA compliant electronic back-up alarm installed at the rear of the apparatus. The alarm shall be wired to the transmissions output signal and is automatically activated when the transmission is shifted into reverse.		
LIGHTS, CAB DOME Four-(4) Whelen 6" Round Super-LED model 60CREGCS shall be provided in the cabs headliner. The steady burn 12v interior light shall incorporate six red and six clear Super-LEDs and a clear non-optic translucent hard coated polycarbonate lens for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The conformal coated PC board and foam in place gasket shall provide additional protection against environmental elements. The 60CREGCS includes Hi/Low intensity mode standards and On/Off		

	Bidder Complies	
	YES	NO
dual switch function. The solid state interior light shall be vibration resistant. The interior light is covered by a five year factory warranty The white LED lights shall be activated when any cab door is in the open position automatically switching off all red lights currently on and reactivated when the door is closed.		
LIGHTS, DOOR COURTESY One-(1) LED courtesy light will be mounted on the lower portion of each interior cab door panel. The lights will activate when the door is opened. The inner door flashers will be equipped with Red LEDs.		
LIGHT, DOOR AJAR A Whelen model TIR3 door ajar light shall be located on the cab's ceiling. This light shall be a self-contained flashing light that activates when any of the apparatus doors are open. The lens color shall be red. An audible alarm shall be installed in conjunction with the door-ajar warning light system. The panel only operates when the ignition switch is in the "On" position and the parking brake released.		
LIGHTS, STEP WELL There will be two-(2) LED illumination lights installed in each front cab door step well and one-(1) in each rear cab door step well. The lights will activate when the cab door in opened.		
LIGHTS, ENGINE MAINTENANCE There will be two-(2) LED lights mounted under the cab. The lights will automatically activate when the cab is tilted.		
FRONT LIGHTING The headlamps, turn signals, front warning and intersection lights shall be located within chrome warning light modules, one-(1) each side front of the apparatus.		
HEADLIGHTS Four-(4) FireTech LED rectangular headlights model FT-4X6-4KIT shall be installed in the warning light modules, two-(2) each side. The headlights shall be mounted in the upper positions of the module.		

	Bidder Complies	
	YES	NO
The kit shall consist of 2 fixtures which operate as SAE VOR "high/low" beams, and 2 fixtures which operate as SAE VO "high-only" beams. All 4 headlights shall have a SAE "P" parking lamp halo surrounding the driving beams, which shall be energized any time the vehicle marker lights are turned "on" (first click of the headlight switch). Optically, on the high/low headlight, an articulated set of elliptical optics must be used to illuminate the foreground while operating in "low" beam mode. The lens of the high/low beam headlight shall be marked "DOT VOR SAE HL P 16." The lens of the high-only beam shall be marked "DOT VO SAE HL P 16." All circuits of the headlights shall be designed to operate from 9-32v DC. All 4 fixtures must be manufactured such that the internal pressure of the headlight remains constant regardless of operating temperature. The housing shall be equipped with a mechanically fastened GORE PolyVent. Similar functioning vent materials affixed to the housing using adhesive shall not be acceptable for substitution. The headlights shall be installed, wired, and aimed, in accordance with FMVSS108. The manufacturer of the headlights shall warrant the headlights against defects for the life of the apparatus.		
TURN SIGNALS, FRONT Two-(2) Whelen M6 series LED model M6T turn signal lamps shall be installed, one-(1) each side directly below the low beam headlights in the warning light modules. The M6T configuration shall consist of 64 amber 5mm Super-LEDs® and an amber non-optic polycarbonate lens. The turn arrow, with the aid of two screws, shall have the ability to be installed as a surface mount warning light. The M6T shall include two Scan-Lock flash patterns of Steady (Brake) Default and SignalAlert™ Steady. The encapsulated assembly shall be resistant to water, moisture, dust, and other environmental conditions. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The light engine shall be installed at the rear of the unit and be vacuum tested to ensure proper sealing. The 5 mm-LED populated arrow shaped PC board shall be conformal coated for additional protection. The M6T shall be furnished with 6" unterminated pigtails, a rubber gasket, screws, and screw grommets shall be included for installation. The turn arrow light shall meet SAE specifications J1395, J588, and J1330. The M6T is covered by a five year factory warranty.		
LIGHTS, TURN SIGNAL/MARKER Two-(2) Whelen 400 series model 40A00AAR amber LED lights shall be mounted, one-(1) each side outboard of the turn signal at a 45-degree angle off the front of the cab. The lights shall be part of the warning light module and are visible from both the front and sides of the vehicle.		
LIGHTS, CAB WHEEL WELL DIRECTIONAL		

	Bidder Complies	
	YES	NO
Two-(2) Britax 428.111.12V auxiliary side directional/marker lights shall be provided, one-(1) each side, in the cab wheel well area and wired to the running lights & turn signals.		
LIGHTS, LED CORNERING Two-(2) Whelen 400 series model 40R02Z*R flashing LED cornering lights shall be mounted, one-(1) each side below the marker lights in the warning light module. The lights shall be mounted at a 45-degree angle off the front of the cab and are visible from the sides and front of the vehicle. The warning light shall incorporate four red Super-LED, an optic hard coated polycarbonate lens, and utilize a metalized reflector with integrated TIR hybrid optics for maximum output. The hard coated lens shall provide extended life/luster protection against UV and chemical stresses. The conformal coated PC board and with the lens fitted with foam in place gasket assembly shall provide additional protection against environmental elements. The solid state warning lights shall be vibration resistant. The self-contained flashing light shall have 25 Scan-Lock™ flash patterns including synchronize feature and steady burn. An installation kit including mounting hardware and rubber gasket shall be provided for surface mounting. The 40R02Z*R will contain a 12" non-terminated pigtail. The warning light is covered by a five year factory warranty.		
LIGHTS, FRONT DOT There shall be five-(5) DOT required marker lights shall be provided in the specified brow light and not mounted to the cab roof.		
LIGHTS, INBOARD LOWER FRONT Two-(2) Whelen M6 Series Super-LED model M6R lights shall be installed, inboard of the turn signal in the warning light modules. The warning lights shall incorporate red Super-LEDs, a red non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The warning lights is covered by a five year factory warranty.		
LIGHTS, CAB GROUND There shall be one-(1) LED light mounted under each cab door illuminating the area below providing a safe entrance and exit for cab occupants. All cab ground lights shall automatically activate when any cab door is opened and by a switch located on the dash.		
VIDEO SYSTEM KIT, FRC INVIEW360 The vehicle will be equipped with an FRC, model SNB100-C00 inView™ 360 Video system. This system will provide the driver with a 360 degree birds-eye style view of the apparatus, along with individual camera views based on determined conditions.		

Montville Bid Specifications

	Bidder Complies	
	YES	NO
The inView™ 360 system will include-(4) four camera's standard, an Electronic Control Unit (ECU), required harnesses and a manual camera switch. The kit will provide split video feeds with bird's-eye view and individual camera views. It will be capable of integrating with an existing vehicle system for an automatic camera view, which seamlessly switches from front/left/right/rear views based on turn signal and reverse activation. The cameras will have dimensions of 1.3" L (34mm) x 1.9" H (48mm) x 2.4" W (61mm). The cameras will have a 190-degree horizontal lens view angle, a relative aperture (F-stop) 2.0, and an HD resolution of 1920 x 1080 at 30 FPS (frames per second). The indoor/outdoor camera housing will be aluminum die cast and be waterproof, rated to IP69. The ECU (Electronic Control Unit) will feature AHD video inputs from the cameras. The system will have two-(2) video outputs, (1) HD (1920 x 1080) and (1) CVBS (SD) 720 x 480. It will also feature a switch that allows the operator to override the default camera view, a second event switch to flag an event, so the video footage can be located easily at a later time and a third switch to activate a vehicle specific overlay. The ECU will have dimensions of 6.8" L (173mm) x 1.5" W (38mm) x 4.9" H (123mm). The system operating voltage will be from 10 to 32 VDC, and will consume no more than 2.2 amps. The ECU will feature built-in recording to record each camera input separately and support four-(4) 256GB SD cards (SD card sold separately). The system will support six-(6) different view modes, configure & customize set up will be supported via monitor and IR remote control.		
IN CAB MONITOR, COLOR An FRC SNB1option-MH0 360, 7" in cab video monitor will be provided. The monitor will include a 7" diagonal color LCD TV display monitor with viewing dimensions of 6.06" W x 3.42" H. The monitor will be a TFT Active Matrix System display with an 800 x 480 resolution and a display format of 16:9 (aspect ratio). The monitor will be located in the center of the cab ceiling facing the driver.		
REAR CAMERA GUARD A treadplate guard will be provided over the camera on the rear body.		
SAFETY SIGNS, GENERAL REQUIREMENTS Safety signs with text will conform to the general principles of ANSI/NEMA Z535.4, *Product Safety Signs and Labels*. Safety signs without text will conform to the general principles for two-panel safety signs of ISO 9244, *Earth-Moving Machinery - Machine Safety Labels.* Apparatus built for sale in the United States will employ safety signage that complies with ANSI/NEMA Z535.4. Apparatus built for sale outside the United States will employ safety signage that complies with ANSI/NEMA Z535.4 or ISO 9244.		

	Bidder Complies	
	YES	NO
Safety signs referenced in this standard beginning with the letters FAMA will conform to the text and graphics of the referenced safety sign number found in FAMA TC010, *Standard Product Safety Sign Catalog for Automotive Fire Apparatus*.		
SAFETY SIGNS, BATTERY EXPLOSION A safety sign(s) FAMA01, will be provided near the battery location that warns of potential injury or death that could be caused by the batteries. The label will also state precautions that should be taken while working on or around the batteries.		
SAFETY SIGNS, ROTATING SHAFTS Safety signs FAMA02, will be provided on each side of the frame rail and in any other location(s) where rotating shaft hazards are apparent. The label will warn of potential injury or death that could be caused by the movement of the shaft(s) as well as precautions that should be taken while working on or around them.		
SAFETY SIGNS, HOT SURFACES Safety sign(s) FAMA03, will be provided near any hot surface that warns of potential injury or death that could be caused by contact with the surface. The label will also state precautions that should be taken while working on or around the surface.		
SAFETY SIGNS, HOT EXHAUST A safety sign FAMA04, will be provided near any hot exhaust surface that warns of potential injury or death that could be caused by contact with the surface. The label will also state precautions that should be taken while working on or around the surface.		
SAFETY SIGN, SPINNING FAN A safety sign FAMA05, shall be provided on both sides of the engine fan. The label will warn of potential injury or death that could be caused by the movement of the fan as well as precautions that should be taken while working on or around them.		
SAFETY SIGNS, SEATED & BELTED Safety signs FAMA07, which warns of the importance of seat belt use, will be visible from each seat that is intended to be occupied while the vehicle is in motion.		
SAFETY SIGN, AIR CONDITIONING REFRIGERANT If the apparatus is equipped with any type of air conditioning system, a safety sign FAMA09, will be provided that is located in an area that would be visible to service personnel. The label		

	Bidder Complies	
	YES	NO
will state that the system contains R134A, the necessary precautions that should be taken and the dangers of working on or around the system.		
SAFETY SIGN, CAB EQUIPMENT MOUNTING A safety sign FAMA10, which warns of the need to secure items in the cab, will be visible inside the cab.		
SAFETY SIGN, FIRE SERVICE TIRE RATING A safety sign FAMA12, which warns of the special requirements for fire service–rated tires, will be visible to the driver entering the cab of any apparatus so equipped.		
SAFETY SIGN, ELECTRONIC STABILITY CONTROL If the apparatus is equipped with an electronic stability control system, a safety sign FAMA13, will be provided inside of the cab in view of the driver warning of the dangers of improper operation of the apparatus and the importance of safe driving. The label will also warn of potential injury or death that could be caused by improper operation of the apparatus.		
SAFETY SIGN, CAB SEATING A safety sign FAMA14 will be located in the cab visible to the operator. The sign will read: This vehicle has a seating capacity of four-(4) personnel.		
SAFETY SIGNS, HELMET WORN IN CAB A safety sign FAMA15, which warns not to wear helmets while the vehicle is in motion, will be visible from each seat that is intended to be occupied while the vehicle is in motion.		
SAFETY SIGN, VEHICLE BACKING A safety sign FAMA17, will be provided inside of the cab in view of the driver advising of proper procedures to following when the apparatus is in reverse motion. The label will also warn of potential injury or death that be caused by failing to follow proper procedures.		
SAFETY SIGNS, INTAKE/DISCHARGE CAP PRESSURES If the apparatus is equipped with a pump system, safety signs FAMA18, will be provided in all areas that intakes and discharges are capped. The label will give instruction on how to properly remove the cap. The label will also warn of potential dangers, injury or death that be caused by failing to follow proper cap removal procedures.		

	Bidder Complies	
	YES	NO
SAFETY SIGNS, HOSE RESTRAINT REQUIRED A safety sign FAMA22, which warns of the need to secure hose, will be visible to personnel at each hose storage area		
SAFETY SIGNS, CLIMBING METHOD INSTRUCTION Safety signs FAMA23, which warns of the proper climbing method, will be visible to personnel entering the cab and at each designated climbing location on the body.		
SAFETY SIGNS, RIDING ON EXTERIOR Safety signs FAMA24, which warns personnel not to ride on the vehicle, will be located at the rear step areas and at any cross walkways.		
SAFETY SIGN, PUMP TRAINING A safety sign FAMA25, which warns of the need for training prior to operating the apparatus, will be located on the pump operator's panel.		
SAFETY SIGNS, NO-STEP Safety signs FAMA26, will be provided in any horizontal location that a firefighter may feel tempted to use as a step but is not designed, constructed or intended to be a stepping, standing or walking surface. The label will state that the surface is not intended for this purpose and indicate potential injury or death in doing so.		
SAFETY SIGN, SIREN NOISE A safety sign FAMA42, will be provided inside the driver's door warning of potential injury that could be received from the noise of the siren. The label will also state safety precautions that should be taken when the siren is in use		
SAFETY SIGN, APPARATUS MOVEMENT A permanently affixed movement warning plate will be installed near the door ajar light that reads: "DO NOT MOVE APPARATUS WHEN LIGHT IS ON".		
PLATE, FLUID CAPACITY A permanently affixed fluid date plate will be installed in the driving compartment to indicate the type and quantities of the following fluid used in the vehicle. Engine Oil		

	Bidder Complies	
	YES	NO
Engine Coolant Chassis Transmission Fluid Pump Transmission Lubrication Fluid (if applicable) Pump Primer Fluid (if applicable) Drive Axle Lubrication Fluid Air Conditioning Refrigerant Air Conditioning Lubrication Oil Power Steering Fluid Cab Tilt Mechanism Fluid Transfer Case Fluid Equipment Rack Fluid Air Compressor System Lubricant Generator System Lubricant Front Tire Pressure - Cold Rear Tire Pressure - Cold The following information will also be supplied on the fluid data plate: Chassis Manufacturer Production Number Paint Number Year Built Date Shipped Vehicle Identification Number		
PLATE, OVERALL HEIGHT / LENGTH / WEIGHT An overall height / length / weight information plate will be installed that can be clearly identified and visible to the driver while in the seated position showing the apparatus completed overall height, length, (in feet and inches) and gross vehicle weight (in tons) current to the apparatus manufactured date. If changes to the vehicle occur while in service, the department must revise the overall height-length-weight plate.		
PUMP ENCLOSURE, TOP MOUNT The pump enclosure superstructure shall be constructed of aluminum. The front of the pump module shall be covered with aluminum tread plate to keep road debris from the front of the pump. The pump enclosure shall be supported at the top of the frame rails, in a minimum of four-(4) places. The module shall be secured with brackets bolted to both the pump enclosure support		

	Bidder Complies	
	YES	NO
cross rails and the side of the chassis frame rails. This design is required to eliminate shifting and stress on the pump enclosure, pump panels and running boards. The pump enclosure shall provide an area for the installation of crosslays or a dunnage area. Any pump enclosure constructed using any material other than aluminum or utilizing any other mounting method is not acceptable.		
SEPARATE PUMP MODULE The pump module will be a self-supported structure mounted independently from the body and chassis cab. The pump module design must allow normal frame deflection without imposing stress on the pump module structure or side running boards.		
DUNNAGE AREA An open area above the pump enclosure will be provided for additional equipment storage and will be constructed from aluminum tread plate. The storage area will be welded and be removable.		
PUMP PANELS The operator's controls and gauges shall be mounted on pump panels constructed of 1/8" (.125) black anodized, non-glare aluminum. No vinyl coverings shall be acceptable as these surfaces are subjected to rough service and vinyl is susceptible to tearing. The pump controls shall be located at the top of the enclosure. This panel shall be removable for access to gauges and auxiliary controls. The top mount Master gauge panel shall be hinged with quarter-turn latches at each end. All gauges and controls shall be properly identified with color-coded metal tags. The tags shall be affixed with industrial adhesive. The gauges shall be functionally grouped above each control. Two-(2) access doors shall be provided below the operator's panel for inspection or service of the pump. The doors shall be constructed of 3/16" (.1875") aluminum tread plate with D-ring handles on each panel. The upper portion of the right side pump panel shall have hinged double doors for access to the pump compartment and primer reservoir. The doors shall be constructed of 1/8" (.125) black anodized, non-glare aluminum. All instruments and controls shall be provided and installed as a group at the pump panel. The central midpoint or centerline of any valve control shall be no more than 72" vertically above the platform that is designed to serve as the operator's standing position. The instruments shall be placed to keep the pump operator as far as practical from all discharge and intake connections		

	Bidder Complies	
	YES	NO
and in a location where they are readily visible and operationally functional while the operator remains stationary. A safety sign FAMA25, which warns of the need for training prior to operating the apparatus, shall be located on the pump operator's panel.		
FULLLY HINGED PUMP PANELS, LEFT & RIGHT SIDE The left and right side pump panels will be full hinged for ease of access to the pump compartment for routine maintenance / repairs.		
PUMP PANEL LIGHT, TOP CONSOLE One-(1) full width LED strip light will be mounted under a light shield above the top mount pump panel. The light will be control with a on the pump operator's panel.		
PUMP PANEL LIGHT, LEFT SIDE One-(1) full width LED strip light will be mounted under a light shield above the left pump panel. The light will be control with a on the pump operator's panel.		
PUMP PANEL LIGHT, RIGHT SIDE One-(1) full width LED strip light will be mounted under a light shield above the right pump panel. The light will be control with a on the pump operator's panel.		
PUMP PANEL LIGHT ACTIVATION The pump panel lights on the operator's panel will also activate when the pump is shifted into gear.		
LIGHT, PUMP COMPARTMENT One-(1) LED strip light will be installed in the pump compartment for inspection or routine maintenance of the pump. The light will be wired to the panel light switch.		
TOP MOUNT WALKWAY A 24" walkway will be provided for the pump operator accessible from either side of the apparatus utilizing running board steps. The walkway will be constructed from structural tubing, angle with a walking surface overlay manufactured from 3/16" non-skid aluminum tread plate. The stepping surface will comply with current NFPA standards. The step height requirements set forth by the current NFPA standards between the running boards and the walkways working surface will be utilized. A walkway warning sign will be		

	Bidder Complies	
	YES	NO
installed in plain view of the operator as directed by the current edition of NFPA.		
COMPARTMENT, DUNNAGE A compartment will be provided in the dunnage area to the rear of the deck gun plumbing. The compartment will be approximately 16" high x 9" wide x 80 long. The compartment will be enclosed on each end with a hinged door and latch.		
STEPS BETWEEN WALKWAY AND RUNNING BOARD There will be a lighted step installed on each side of the body between the top mount walkway and the running boards. The stepping surfaces will comply with current NFPA standards.		
LIGHTS, TOP MOUNT WALKWAY Two-(2) clear lens LED lights will be installed to illuminate the top mount walkway area. The lights will activated when the park brake set set.		
RUNNING BOARDS, LEFT & RIGHT SIDE A running board will be provided on the left and right side of pump module constructed of non-skid 3/16" aluminum tread plate that flanges down 2-1/2" and in 1.00" for maximum rigidity then bolted to the modules substructure to facilitate removal. The stepping surfaces will comply with current NFPA standards.		
HOSE TRAYS (2), RUNNING BOARDS A hose tray will be installed in the left and right side running boards constructed from aluminum tread plate with drain holes provided in each corner to provide drainage. A restraining strap will be provided securing the contents of the hose well to meet the current NFPA standards. A safety sign FAMA22, which warns of the need to secure hose, will be visible to personnel at the hose storage area. The driver's side tray will house 50' of 2-1/2" double jacket fire hose and officer's side will house 100' of 1-3/4" double jacket fire hose. The hose wells will be floating / drop in style with 45-dgree angled bottom corners.		
HANDRAILS, TOP MOUNT WALKWAY		

	Bidder Complies	
	YES	NO
There will be one-(1) 30" handrail installed on each side of the apparatus at the front of the pump module near the top mount walkway. The handrails will be constructed from 1-1/4" knurled stainless steel. The handrails will be mounted with chrome plated end stanchions. The handrails will meet or exceed NFPA 1901 requirements.		
MONITOR, PUMP PANEL A Fire Research SNB1option-MW0 water proof monitor will be located at the operator's panel and will be sired to the 360 camera system. The monitor will have a switch on the pump operators panel to cycle through camera views.		
AIR HORN SWITCH, PUMP PANEL There will be a push button momentary switch mounted on the pump panel ti activate the chassis air horn(s).		
HEAT PAN W/HEATER, PUMP HOUSE There will be a removable heat pan constructed from 3/16" aluminum plate installed under the pump with the chassis exhaust running through the pan warming the pump during winter conditions. There will be a 12-volt electric heater installed in the pump house to be used in conjunction with the heat pan providing additional heat to the pump and components during freezing conditions. The heater will be activated by a switch located on the pump panel.		
MASTER GAUGES, 4-1/2" There will be two-(2) 4-1/2" master gauges installed on the pump operator's panel. The intake and discharge gauges will be liquid filled with a solution to assure visual readings and reduce inner lens condensation. The face of the gauge will be white with black markings. The master gauges will be the Innovative controls 3104520 Master Pressure Center Assembly. The master gauges will have a LED back light. The color of the back lights will be white.		
PRESSURE GAUGES, 2-1/2" Each rated discharge will be provided with 2-1/2" pressure gauge. The discharge gauges will be liquid filled with a solution to assure visual readings and reduce inner lens condensation. The face of the gauges shall be white with black markings.		

	Bidder Complies	
	YES	NO
The pressure gauges will be innovative controls brand. The pressure gauges will have a LED back light. The color of the back lights will be blue.		
GAUGE BEZELS, COLOR CODED The pump panel master and pressure gauge bezels will be color coded. Innovative Controls brand.		
ENGINE THROTTLE There will be a Vernier engine throttle with quick release in the center of the controller installed on the pump panel.		
FRC THROTTLE XCEL Fire Research ThrottleXcel model ELA201 engine governor and monitoring display shall be installed. The case shall be waterproof and have dimensions not to exceed 6 3/4" high by 4 5/8" wide. 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 datalink or independent sensors. Outputs for engine control shall be on the J1939 datalink.		
PUMP PANEL TAGS All discharges, gauges, and controls will be properly identified by color-coded metal tags. The metal tags will be affixed with 3M industrial adhesive. Innovative Controls brand.		
PUMP PANEL GARNISH RINGS All pump panel discharges will utilize a color coded garnish ring. Innovative Controls brand.		
WARNING SYSTEM, ENFO IV The apparatus pump panel will be equipped with a Class 1 ENFO IV engine monitoring device that reads and displays: engine RPM, engine coolant temperature, and engine oil pressure via SAE J1939 CAN messages from the engine Electronic Control Unit (ECU). The ENFO IV also displays vehicle voltage but this is independent of SAE J1939 CAN operation.		

	Bidder Complies	
	YES	NO
The ENFO IV uses an automatic voltage detection system to determine the low voltage point for alarm activation. The ENFO IV will be connected to an external alarm and external alarm silence switch. High engine temperature (250-degrees F / 120-degrees C), low oil pressure (10 PSI / 70 kPa / 0.70 Bar), or low voltage (11.9V or 23.8V) will cause the ENFO IV to activate the external alarm. Display The ENFO IV has 4 display windows which use 7-segment LEDs to show information and warnings received from the engine ECU (source address 0). For applications where the engine ECU address is not 0 (or the SAE J1939 CAN data is not transmitted from a device with the source address of 0) the ENFO IV can be set-up to mask the source address to ensure that the data will be received regardless of the transmitting devices source address number. ENGINE RPM display window The engine RPM is received from the engine ECU via J1939 CAN message PGN 61444 (bytes 4 and 5) and displayed in this window. Dashes will be displayed when PGN 61444 is not received. VOLTAGE display window The vehicle voltage information is calculated within the ENFO IV based on the voltage present at pin 4 (supply voltage +) referenced to the ground potential present at pin 5 (supply voltage -). OIL PRESSURE display window The oil pressure is received from the engine ECU via J1939 CAN message PGN 65263 (byte 3) and displayed in this window. Dashes will be displayed when PGN 65253 is not received. ENGINE TEMP display window The engine (coolant) temperature is received from the engine ECU via J1939 CAN message PGN 65252 (byte 0) and displayed in this window. Dashes will be displayed when PGN 65252 is not received.		
PUMP SYSTEM, HALE QMAX SINGLE STAGE		
PUMP ASSEMBLY The entire pump shall be cast, manufactured, and tested at the pump manufacturer's factory. The pump shall be driven by a drive line from the truck transmission. The engine shall provide sufficient horsepower and RPM to enable pump to meet and exceed its rated performance. The entire pump, both suction and discharge passages, 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 specs as outlined by the latest NFPA Pamphlet No. 1901. The pump shall be free from objectionable pulsation and vibration. The pump body and related parts shall be of fine grain, cast iron alloy, with a minimum tensile strength of 30,000 PSI. All 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.		

	Bidder Complies	
	YES	NO
Pump body shall be horizontally split, on a single plane, in two sections, for easy removal of entire impeller assembly including wear rings and bearings from beneath the pump without disturbing piping or the mounting of the pump in chassis. The pump shall have one double suction impeller. The pump body shall have two opposed discharge volute cutwaters to eliminate radial unbalance. Pump shaft to be rigidly supported by three bearings for minimum deflection. One high lead bronze sleeve bearing shall be located immediately adjacent to the impeller (on side opposite the drive unit). The sleeve bearing is to be lubricated by a force-fed, automatic oil lubricated design, pressure balanced to exclude foreign material. The remaining bearings shall be heavy-duty, deep groove ball bearings in the gearbox and they shall be splash lubricated. The pump impeller shall be hard, fine grain bronze of the mixed flow design; accurately machined, hand-ground and individually balanced. The vanes of the impeller intake eyes shall be hand ground and polished to a sharp edge, and be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower. The impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body, and of wraparound double labyrinth design for maximum efficiency. The pump shaft shall be heat-treated, electric furnace, corrosion resistant, stainless steel, to be super-finished under packing with galvanic corrosion (zinc separators in packing) protection for longer shaft life. Pump shaft must be sealed with double lip oil seal to deep road dirt and water out of drive unit.		
DRIVE UNIT The drive unit shall be cast and completely manufactured and tested at the pump manufacturer's factory. Pump drive unit shall be of sufficient size to withstand up to 16,000 ft. Lbs. Torque of the engine in both road and pump operating conditions. The drive unit is designed with ample capacity for lubrication reserve to maintain proper operating temperature. The gearbox drive shafts shall be of heat-treated chrome nickel steel and at least 2-3/4" in diameter, on both the input and output drive shafts. They shall withstand the full torque of the engine in both road and pump operating conditions. All gears drive and pump, shall be of highest quality electric furnace, chrome nickel steel. Bores shall be ground to size and teeth integrated, crown-shaved and hardened, to give an extremely accurate gear for long life, smooth, quiet running, and higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrusts.		

	Bidder Complies	
	YES	NO
The pump ratio shall be selected by the apparatus manufacturer to give maximum performance with the engine and transmission selected. If drive unit is equipped with a power shift, the shifting mechanism shall be a heat-treated, hard-anodized aluminum power cylinder, with stainless steel shaft. An in-cab control for rapid shift shall be provided that locks in road or pump. Three warning lights with plates shall be provided to alert the operator when the drive unit has fully shifted from road to pump position. Two lights shall be located on the cabs instrument panel and the other on the pump panel adjacent to the throttle. A 3" clapper check valve shall be installed between the suction side of the pump and the tank-to-pump valve. This 3" clapper valve shall remove the possibility of a water surge expanding the booster tank. Pump system shall have an integral discharge manifold system that allows a direct flow of water to all discharge valves.		
MECHANICAL SEAL The midship pump shall be equipped with a high quality, spring loaded, and self-adjusting mechanical seal capable of providing a positive seal to atmosphere under all pumping conditions. This positive seal to atmosphere must be achievable under vacuum conditions up to 26 Hg (draft) or positive suction pressures up to 250 PSI. The mechanical seal assembly shall be 2 inches in diameter and consist of a carbon sealing ring, stainless steel coil spring, Viton rubber boot, and a tungsten carbide seat, with a Teflon backup seal provided. Only one mechanical seal shall be required, located on the first stage suction (inboard) side of the pump and be designed to be compatible with a one-piece pump shaft. A continuous cooling flow of water from the pump shall be directed through the seal chamber when the pump is in operation.		
PUMP SHIFT W/MANUAL OVERRIDE An air operated pump shift shall be installed in the chassis cab to engage the fire pump. Provisions shall be made for placing the pump drive system in operation using controls and switches that are clearly identified and within convenient reach of the operator while in the cab. A green indicator light shall be installed on the cab dash and labeled "Pump Engaged". Where an automatic chassis transmission is provided, a green indicator light in the driving compartment and a green indicator light located at the pump operator's position shall be provided		

	Bidder Complies	
	YES	NO
and shall be energized when both the pump shift has been completed and the chassis transmission is engaged in pump gear. The light in the driving compartment shall be labeled "OK TO PUMP". The light on the pump operator shall be positioned adjacent to and preferably above the throttle control and shall be labeled "Warning: DO NOT OPEN THROTTLE UNLESS LIGHT IS ON". The green light on the pump operator's panel shall be energized when the pump is engaged, the transmission is in drive, and the parking brake is set. A pump shift manual override installed on the lower left pump panel providing a method of engaging the pump in the event of a failure of the powered pump shift.		
PRIMING SYSTEM, PUMP A Trident air operated priming system shall be installed. The unit shall be of all brass and stainless steel construction. Due to corrosion exposure no aluminum or vanes shall be used in the primer design. The primer shall be mounted above the pump impeller so that the priming line will automatically drain back to the pump. The primer shall also automatically drain when the panel control actuator is not in operation. The inlet side of the primer shall include a brass 'wye' type strainer with removable stainless steel fine mesh strainer to prevent entry of debris into the primer body. Performance, Safety, and NFPA Compliance The priming system shall be capable to a vertical lift to 22 inches of mercury and shall be fully compliant to applicable NFPA standards for vertical lift. The system shall create vacuum by using air from the chassis air brake system through a two-barrel multi-stage internal "venturi nozzles" within the primer body. The noise level during operation of the primer shall not exceed 75 Db. Primer Control The primer control shall have a manually operated, panel mounted "push to prime" air valve; which will direct air pressure from the air brake storage tank to the primer body. To prevent freezing, no water shall flow to and from the panel control. Warranty The primer shall be covered by a five-(5) year parts warranty. The system will be a 3-location system.		

	Bidder Complies	
	YES	NO
The main control will be located on the driver's side steamer inlet. The other controls will be provided for the officer's side steamer inlet and front suction. The additional controls will operate the Air Prime to pre-prime and may be used to remove air from the auxiliary intake piping and hose white the fire pump is operating. To prevent freezing, no water shall enter the primer valve conrtrol.		
PUMP ANODE(S) Two (2) replaceable pump anode(s) shall be installed on the pump for corrosion protection. These anodes shall be constructed with alloy meeting MIL-A-24779 (no exceptions). The anodes shall have a central stainless steel core to prevent anode breakage that can lead to clogged nozzles. There will one-(1) anode installed in the suction manifold of the pump and one-(1) in the discharge manifold of the pump.		
VALVE, MASTER DRAIN There shall be a master drain valve recessed mounted below the pump module under the side running board, connecting all drain lines, with the capacity to discharge water simultaneously from all locations to below the chassis frame rails.		
VALVES, INDIVIDUAL DRAIN All lines will drain through the master drain valve or will be equipped with individual drain valves, easily accessible and labeled. One-(1) individual Innovative Control lift up drain valve will be furnished for each 1-1/2" or larger discharge port and each 2-1/2" gated auxiliary suction. Drain valves will be located at the bottom of the side pump module panels. All drains and bleeders will discharge below the running boards.		
PUMP TEST POINTS Two-(2) test plugs shall be pump panel mounted for testing of vacuum and pressures. The pump test points will be located in the Innovative controls Master Pressure Center Assembly.		
PUMP CERTIFICATION, 2000 GPM		

	Bidder Complies	
	YES	NO
The pump when dry, shall be capable of taking suction and discharging water in accordance with current NFPA 1901. The pump shall be tested at the manufacturer's facility by an independent, third party testing service. The conditions of the pump test shall be as outlined in current NFPA 1901. The tests shall include, at minimum, the pump test, the pumping engine overload test, the pressure control system test, the priming device tests, the vacuum test, and the water tank to pump flow test as outlined in current NFPA 1901. A Piping hydrostatic test shall be performed as outlined in current NFPA 1901. The pump shall meet and perform the following test to receive certification: 100% of rated capacities at 150 PSI net pump pressure 100% of rated capacities at 165 PSI net pump pressure 70% of rated capacities at 200 PSI net pump pressure 50% of rated capacities at 250 PSI net pump pressure		
PUMP TEST CERTIFICATION PLATE A permanently affixed plate shall be installed at the pump operator's panel. It shall provide the rated discharge and pressures together with the speed of the engine as determined by the certification test for each unit. It shall also provide the position of the parallel/series pump used and the no load governed speed of the engine as stated by the engine manufacturer on a certified brake horsepower curve. A label shall be provided on the pump operator's panel that states the following: "Warning: Death or serious injury might occur if proper operating procedures are not followed". The pump operator as well as individuals connecting supply or discharge hoses to the apparatus must be familiar with water hydraulics hazards and component limitations.		
STEAMER INLETS, 6" A 6" NST steamer inlet with removable screen and long handle cap shall be provided on the left and right side pump panels.		
MASTER INTAKE VALVE(S), ELECTRIC There shall be two (2) Hale model MIV-E, electrically operated intake valve(s) with indicator light package provided on the steamer inlet(s). The valve(s) shall have a bronze body with sealed gear drive, built in pressure relief valve and manual back up control. A bleeder valve shall also be provided with the valve package. There be an MIV-E installed on each steamer inlet. The MIV valves will be controlled from the top mount operators panel.		

Montville Bid Specifications

	Bidder Complies	
	YES	NO
SUCTION INLET, FRONT A 5" front suction inlet will be installed vertically thru the front bumper gravelshield turning 90 degrees forward (when swivel elbow option is not chosen) terminating with a chrome plated 5" MNST adapter with strainer. Two-(2) 3/4" ball valves will be provided for the front suction located at the lowest points of the plumbing and will be properly labeled. The valves shall have a cast bronze body, with a 1/4 turn, chrome plated bronze ball, reinforced Teflon seals, and blow-out-proof stem rated to 600 PSI. The front suction will terminate with 6" NST male threads.		
SUCTION CONTROL The suction inlet shall be controlled at the pump operator's panel by an electric operated valve with built in relief valve mounting pad. A bleeder valve shall also be provided with the valve package. A warning plate permanently affixed in close proximity of the suction inlet shall be installed stating: "WARNING - SERIOUS INJURY OR DEATH COULD OCCUR IF INLET IS SUPPLIED BY A PRESSURIZED SOURCE WHEN THE VALVE IS CLOSED". The front suction will be controlled on the top mount operators panel.		
PIPING, FRONT SUCTION The front suction plumbing shall be constructed from schedule 10 stainless steel piping with victaulic couplings each end. The plumbing shall be fitted routed along the chassis frame rails. There shall be a suction side relief valve provided for the front suction. The relief valve is adjustable from 50-250 psi and set at the factory at 125 psi. The discharge from the valve shall be directed toward the ground and away from the pump operator A 6" swivel elbow rotating 180 degrees shall be installed in the front suction plumbing.		
THERMAL RELIEF VALVE W/LIGHT The pump shall be equipped with a Hale TRV-L thermal relief valve. The valve automatically monitors water temperature and is preset to open 120 degrees Fahrenheit. The TRV-L 120 display shall be provided on the pump panel.		
AUDIBLE ALARM, THERMAL RELIEF VAVLE		

	Bidder Complies	
	YES	NO
An audible warning buzzer shall be provided with the Hale Thermal Relief Valve, wired to the light installed on the pump panel in close proximity of the Relief Valve indicator plate.		
RELIEF VALVE, INTAKE There shall be a suction side relief valve provided in the pump system. The relief valve is adjustable from 50-250 psi and set at the factory at 125 psi. The discharge from the valve shall be directed toward the ground and away from the pump operator.		
PRESSURE RELIEF VALVE There will be a Hale QG pressure relief valve provided. This automatic pressure control device will be a single bronze variable pressure setting relief valve of ample capacity to prevent an undue pressure rise as per NFPA Pamphlet No. 1900. An increase in pump pressure will open the normally closed valve. A control light on the pump panel will be installed to signal when open. In event of relief valve control failure, the pump is to remain operable for the complete range of the pump's rated capacity, without requiring the closing of any emergency or "in case of failure" (off/on) valves. The pressure relief will discharge to atmosphere, and the discharge will direct away from the operator's position.		
TANK TO PUMP The booster tank will be connected to the intake side of the pump with a check valve. The 3" tank to pump line will run from a bottom sump into the 3" valve. To prevent damage due to chassis flexing or vibration, a short 3" flexible rubber hose coupling will be used to connect the tank to the intake valve. A check valve will be between the pump suction and the booster tank valve. The check valve will eliminate back flow into the water tank when the pump is connected to a pressurized source. The tank to pump valve will be a quarter turn fixed pivot design. The valve will be controlled by a twist lock lever control installed at the pump operator's panel.		
TANK FILL A 2" tank fill line shall be provided, using a quarter turn full flow ball valve and high-pressure flexible hose. The valve shall be lever controlled from the pump operator's panel.		
ENGINE COOLER		

	Bidder Complies	
	YES	NO
The engine cooler shall be installed in-line from the discharge side of the pump, and installed in the engine cooling system. There shall be a 1/2", quarter turn valve installed thru the pump panel and shall be clearly labeled.		
PUMP COOLER The pump will have a 3/8" line installed from the pump discharge to the water tank to cool the pump during long periods of pumping when water is not being discharged. The pump cooler woll be controlled from the pump operators panel by a 1/2" valve consisting of a cast bronze body with 1/4 turn chrome plated bronze ball, reinforced Teflon seals and blow-out-proof stem rated to 600 PSI. The valve will be installed thru the pump panel and clearly labeled.		
PLUMBING SYSTEM All inlet and outlet lines shall be plumbed with either, stainless steel pipe, flexible polypropylene tubing or synthetic rubber hose reinforced with hi-tensile polyester braid. All hoses shall be equipped with stainless steel couplings. All stainless steel hard plumbing shall be a minimum of a schedule 10 wall thickness. Where vibration or chassis flexing may damage or loosen piping or where a coupling is required for servicing, the piping shall be equipped with Victaulic or rubber couplings. Plumbing manifold bodies shall be ductile cast iron or stainless steel. All piping lines are to be drained through a master drain valve or shall be equipped with individual drain valves. All drain lines shall be extended with a hose to drain below the chassis frame. All water carrying gauge lines shall be of flexible polypropylene tubing. All piping, hose and fittings shall have a minimum of a 500 PSI hydrodynamic pressure rating.		
PLUMBING FINISH The plumbing shall be natural finish and shall not be painted.		
APPARATUS VALVES, AKRON The apparatus valves (unless otherwise specified) shall be Akron heavy-duty swing out 8000 series brass body with flow optimizing stainless steel ball, and dual polymer seats. 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 valve shall not require the lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall a 10- year warranty covered by Akron Brass.		
TOP MOUNT VALVE CONTROLS The top mount valve controls will be Innovative Controls Pistol Grip, bezel mount angled pistol grip pivot-lock, valve controls.		

	Bidder Complies	
	YES	NO
SUCTION(S), 2-1/2" LEFT PANEL One (1) 2-1/2" lever operated ball valve(s) shall be installed on the left side pump panel plumbed to the suction side of the pump with 2-1/2" piping. The suction(s) shall be equipped with a 2-1/2" FNST chrome inlet swivel, brass inlet strainer, chrome plug with chain and 3/4" drain valve. The control handle shall be located at the top mount operators panel. A warning plate permanently affixed in close proximity of the suction inlet shall be installed stating: "WARNING - SERIOUS INJURY OR DEATH COULD OCCUR IF INLET IS SUPPLIED BY A PRESSURIZED SOURCE WHEN THE VALVE IS CLOSED".		
SUCTION(S), 2-1/2" RIGHT PANEL One (1) 2-1/2" lever operated ball valve(s) shall be installed on the right side pump panel plumbed to the suction side of the pump with 2-1/2" piping. The suction(s) shall be equipped with a 2-1/2" FNST chrome inlet swivel, brass inlet strainer, chrome plug with chain and 3/4" drain valve. The control handle shall be located at the top mount operators panel. A warning plate permanently affixed in close proximity of the suction inlet shall be installed stating: "WARNING - SERIOUS INJURY OR DEATH COULD OCCUR IF INLET IS SUPPLIED BY A PRESSURIZED SOURCE WHEN THE VALVE IS CLOSED".		
DISCHARGE ELBOWS All 2-1/2" side discharge outlets shall terminate with chrome-plated 30-Degree elbows with 2-1/2" MNST threads and chrome vented caps/chains. The caps shall automatically release pressure in the discharge outlet before the threads are completely disengaged unless the outlet and the cap are equipped with drains or bleeder valves.		
REDUCERS W/CAPS There will be a Trident 2-1/2" FNST x 1-1/2" MNST chrome reducer with 1-1/2" chrome NST cap installed all the 2-1/2" discharges.		
COATED CABLES All intake plugs and discharge caps will be equipped with coated cables in place of the chains.		
SPEEDLAYS, WALKWAY MOUNTED		

	Bidder Complies	
	YES	NO
Two-(2) pre-connected speedlay compartments will be provided in the walkway accommodating 200' of 1-3/4" double jacket hose. Stainless steel nylon guide rollers will be installed at each end with stainless steel scuff plates around the perimeter of the speedlay protecting the painted surfaces. A 2" ball valve with 3/4" drain and 90-degree swivel will be provided for each speedlay. The speedlays will be 2" high-pressure flexible hose stainless steel couplings tested to 1200 PSI. The speedlays will be lever controlled at the pump operator's panel. Each speedlay is equipped with a quarter-turn drain valve. A safety sign FAMA22, which warns of the need to secure hose, will be visible to personnel at the hose storage area.		
REMOVABLE SPEEDLAY HOSE TRAYS There will be two-(2) removable, speed lay hose trays provided with the apparatus constructed of 3/16" smooth aluminum with handles at each end held in place by horizontal bulkheads at each end of the compartments.		
SPEEDLAY COVER, ALUMINUM There will be one-(1) speedlay cover provided. The cover will be constructed of 1/8" (.125") aluminum tread plate with a stainless steel piano hinge, chrome lift handles and two-(2) hook latches. A safety sign FAMA22, which warns of the need to secure hose, will be visible to personnel at the hose storage area. The Hypalon end flaps will be secured using bungee cords and "J" hooks. The cover prevents hose from inadvertently deploying during normal operations meeting the current NFPA requirements. The end flaps will be red in color.		
DISCHARGE, 2-1/2" LEFT SIDE There shall be one-(1) discharge outlet with a 2-1/2" valve on the left side pump panel. The outlet shall be lever controlled from the operator's panel and terminate with 2-1/2" MNST threads.		
DISCHARGE, 4" LEFT SIDE There will be one-(1) discharge outlet with a 4" valve on the left side pump panel. The outlet will be hand wheel controlled from the operator's panel and terminate with 4" MNST threads. The handwheel control will be a Trident brand with 8:1 ratio.		

	Bidder Complies	
	YES	NO
DISCHARGE, 2-1/2" RIGHT SIDE There shall be one-(1) discharge outlet with a 2-1/2" valve on the right side pump panel. The outlet shall be lever controlled from the operator's panel and terminate with 2-1/2" MNST threads.		
DISCHARGE, 4" RIGHT SIDE There will be one-(1) discharge outlet with a 4" valve on the right side pump panel. The outlet will be hand wheel controlled from the operator's panel and terminate with 4" MNST threads. The handwheel control will be a Trident brand with 8:1 ratio.		
DECK GUN PLUMBING, 3" A 3" deck pipe shall be installed above the pump in such a manner that a monitor can be mounted and used effectively. The piping shall be installed securely so no movement develops when the line is charged. The piping shall terminate with 3" NPT threads and a 4-bolt flange for mounting a monitor. The 3" valve shall be lever controlled from the operator's panel.		
DISCHARGE, 2-1/2" LEFT FRONT HOSEBED There will be one-(1) discharge outlet with a 2-1/2" valve located to the front of the left side hose bed. The outlet will be lever controlled from the operator's panel and terminate with 2-1/2" MNST adapter. The hose bed discharge piping will be spaced up from the hose bed floor to allow for the hose to be connected.		
WATER TANK, 1250 GALLONS The tank will have a capacity of 1250 U.S. gallons and shall be constructed of polypropylene plastic. This material shall be a non-corrosive stress relieved thermoplastic and UV stabilized for maximum protection. The tank will be baffled in accordance with NFPA Bulletin 1901 requirements. The baffles will have vent openings at both the top and bottom to permit movement of air and water between compartments. A sump that will be sized dependent on the tank to pump plumbing will be provided at the bottom of the water tank. The sump will include a drain plug and the tank outlet. The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of polypropylene and shall be a minimum dimension of 8" x 8" outer perimeter. An overflow		

	Bidder Complies	
	YES	NO
pipe, constructed of 4.00" schedule 40 polypropylene, will be installed approximately halfway down the fill tower and extend through the water tank and exit to the rear of the rear axle.		
WATER TANK SIZE CERTIFICATION The manufacturer shall certify the capacity of the water tank prior to the delivery of the apparatus. This capacity shall be recorded on the manufacturer's record of construction and the certification shall be provided when the apparatus is delivered.		
GAUGE, WATER LEVEL A Fire Research TankVision Pro model WLA300-A00 tank indicator kit shall be installed on the pump operator's panel. 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 RGB 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 Polycarbonate/Nylon material, and have a distinctive blue label. The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, six (6) programmable colored light patterns to display tank volume, adjustable brightness control levels 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.		
GAUGE, AUXILIARY WATER LEVEL There shall be a three-(3) Whelen PSTANK2 water level status lights, with 96 steady burn green, blue, amber, and red LED's. The light shall provide bright, easy indication of water status. The unit is surface mounted, has low current consumption, fully encapsulated, and carries a five-(5) year warranty from Whelen. The lights shall be mounted per customer requirements, typically one each side on or near the cab. The units shall activate with the application of the park brake. There will be one-(1) light mounted on each side of the apparatus on the cab extensions as high as possible and one-(1) on the rear of the body. The lights will be activated when the park brake is applied.		
APPARATUS BODY, 102" WIDE The 102" wide apparatus body and sub frame shall be constructed entirely of marine grade aluminum plate and extrusions.		
BODY SUBFRAME		

	Bidder Complies	
	YES	NO
The main body support cross member extrusions shall be 3" x 4" 6061T6 aluminum alloy, double "I" beam with a wall thickness of 7/16" (.438"). These cross members shall extend the full width of the body to support the compartment framing. The cross members shall be welded to a 3/4" (.750") x 3" solid aluminum, 6061T6 aluminum (alloy frame rail) extrusion. The frame rail extrusion shall be shaped in contour with the chassis frame rails. The frame rail extrusion shall be mounted over a 1/2" (.5") thickness, reinforced rubber cushion to isolate the aluminum sub frame from the chassis steel frame rails. The apparatus body structure shall be securely fastened to the chassis frame rails with a minimum of six-(6) 5/8" (.625") cross member OD, steel U-bolts. The main body support cross member shall have a gusset above and below each cross member. The gussets shall be constructed of 2.0" x 4.0" 6063T6 aluminum alloy extrusion with a .190" wall thickness. The gussets shall be continuously welded with 5356 aluminum alloy welding wire to add support to the body sidewalls. The main body supports and the longitudinal double "I" beam supports shall have a "C" shaped rubber tank cushion installed on the top of each member. This rubber extrusion shall conform to the shape of the double "I" beam extrusion to keep the tank cushion in place. This method is used to prevent damage to the tank. Absolutely no pop-rivets, screws or any other hardware shall be used to hold the rubber tank cushion in place.		
BODY CONSTRUCTION The complete apparatus body structure shall be an all welded construction and be free from nuts, bolts and other fasteners. Upon completion of the weldments, the body shall be completely sanded and deburred for removal of all sharp edges. The body framework shall be formed from beveled aluminum alloy extrusions and electrically seam welded at each joint using 5356 aluminum alloy welding wire. Body sides shall be formed from 5052 H-32 (marine grade) smooth aluminum plates. The horizontal surfaces above the compartment tops shall be constructed from aluminum tread plate. The horizontal and vertical frame member extrusions shall be 2.0" x 4.0" with a .190" wall thickness. The extrusion shall be made from 6063T6 aluminum alloy. This extrusion shall have .190" outside radius corners. The longitudinal frame member, below the lower compartments shall be a 2.0" x 4.0" 6063T6 aluminum alloy extrusion with .190" radius corners. Each body corner shall be a 3.5" x 12-3/4" 6063T6 extruded aluminum section with .210" wall thickness, and shall be welded as an integral part of the body. This extrusion shall have a 1" corner radius.		
COMPARTMENT CONSTRUCTION The compartment sidewalls shall be of one-piece construction. The walls shall be formed from 3/16" (.1875") 5052 H-32 (marine grade) smooth aluminum plate. All compartment floors shall be formed from 3/16" (.1875") aluminum tread plate. The floors shall be welded in place with a continuous weld all around the perimeter to insure maximum strength.		

	Bidder Complies	
	YES	NO
The compartment seams shall be sealed with permanent pliable silicone caulking. Each compartment shall be vented through a 3" wide x 15" high louver that is machined stamped in a panel located in each body corner extrusion. The panel shall be removable to provide access to service wiring and other mounted components. Due to the ladder storage area and sweep out floors, the running board compartments of this style vehicle are of a split height, split depth, full width configuration. The referenced compartment sizes approximate the extreme outside compartment dimensions without deductions for the floor material thicknesses, flanges or ladder storage compartment headers. To assure proper vehicle weight distribution, the compartment dimensions may change in width with the final body shift and wheelbase.		
COMPARTMENT TOPS/CATWALK The external compartment tops shall be constructed of 1/8" (.125") aluminum tread plate. The tops shall have a formed edge, which serves as a drip rail for the compartments below. The compartment tops shall be secured with stainless steel screws to allow for ease of removal for access to the bodies wiring harnesses.		
WHEEL WELL PANELS, PAINTED ALUMINUM The wheel well shall be constructed from 2" x 4" x .190" wall thickness. The extrusion shall be made from 6063T6 aluminum alloy and have .190" outside radius corners. The extrusion shall be slotted the full length to permit an internal fit of 3/16" (.187") painted aluminum panels. The wheel well liners shall be constructed of 3003 H-14 smooth aluminum plates. They shall be bolted in place for ease of maintenance. A deflection shield shall be mounted to the body sub frame to keep road debris from entering the water tank area		
FENDERETTES, POLISHED STAINLESS STEEL The body fenderettes will be bright polished stainless steel securely fastened to the body wheel wells on each side.		
HOSEBED The hose bed sides shall be constructed of 3/16" (.1875") 5052 H-32 (marine grade) smooth aluminum plate welded to the extruded framework. There shall be a 3" x 3.5" 6063T6 aluminum extrusion with .190" wall thickness running the entire length of the hose bed at the top for structural rigidity. The hose bed decking shall be constructed from anodized aluminum extrusions. The extrusions shall be 3/4" (.750") x 8.125" and have 3/4" (.750") x 3.00" hat		

	Bidder Complies	
	YES	NO
channel attached to the underside to form a one-piece grid. The entire deck shall be removable, in one piece, to allow ease of serviceability to the tank. The hose bed shall include an extrusion across the front and rear of the compartment for the installation of adjustable hose bed dividers. The fire apparatus hose body shall be 67-1/2" wide. A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.		
COMPARTMENTS, LEFT SIDE L1 There shall be one-(1) left front compartment installed ahead of the rear axle. The interior dimensions will be approximately 46" wide x 64" high x 28" deep in the lower section and 15" deep in the upper section. L2 There shall be one-(1) compartment installed above the wheel well. The interior dimensions will be approximately 58" wide x 32" high x 15" deep. L3 There shall be one-(1) left rear compartment installed behind the rear axle. The interior dimensions will be approximately 50" wide x 64" high x transverse in the lower section and 15" deep in the upper section.		
COMPARTMENTS, RIGHT SIDE R1 There will be one-(1) right front compartment installed ahead of the rear axle. The interior dimensions will be approximately 46" wide x 28" high x 28" deep. R2 There will be one-(1) right rear compartment installed behind the rear axle. The interior dimensions will be approximately 50" wide x 28" high x transverse.		
COMPARTMENT, CENTER REAR B1 There shall be one-(1) compartment installed at the center rear of the apparatus. The compartment shall have an interior dimension of approximately 46" wide x 28" high.		
COMPARTMENT DOOR(S), HINGED The specified compartments will have doors constructed entirely from 5052-H32 smooth aluminum plate using a box pan configuration. The outer panel shall be constructed from 3/16" (.1875") smooth aluminum plate and the inner pan stitch welded in place from 1/8" (.125") smooth aluminum plate.		

	Bidder Complies	
	YES	NO
There shall be a 1/4" (.250") hole installed in the lower corners of the inside door pans for drainage. The doors shall have a closed cell neoprene rubber gasket installed around the perimeter of the door to remove water. Exterior door latches shall incorporate a polished D-paddle handle with rotary style latch. For ease of operation, the D-handle opening shall be large enough to accommodate a gloved hand. The D-paddle latching design shall be subjected to corrosion, water infiltration, and cycle testing to 35,000 cycles. Double doors shall utilize concealed rotary latches on the secondary door, actuated by a recessed stainless steel paddle handle. The door design shall not impede into the compartment opening when in the open position. The watertight door seal shall exceed the current KKK-1822 water infiltration standards. The doors shall be securely fastened to the apparatus body with full-length stainless steel piano hinges using 1/4-20 stainless bolts and locking nuts. The hinges shall be slotted to allow for adjustments. Absolutely no self-tapping screws or pop rivets shall be acceptable to mount the door mechanisms or slam latch assemblies.		
PADDLE LATCH DOOR EXTENSION(S) There will be a paddle latch door extensions(s) installed on the secondary door of the specified body compartment(s). There will be a paddle latch extension installed compartment L1, compartment L3, compartment R1, compartment R2 and compartment B1.		
PULL DOWN STRAP(S), COMPARTMENT DOOR There will be a pull-down strap(s) provided on the specified compartment door(s) to aid in closing the door(s). The pull down door strap will be installed on compartment L2.		
REAR BODY CONSTRUCTION, FLAT BACK DESIGN The rear of the apparatus shall be flat back design. No beavertails shall be installed on the unit.		
STEP, INTERMEDIATE REAR The intermediate rear step shall be constructed of 3/16" (.1875") aluminum tread plate. All running board and step surfaces shall comply with NFPA 1901.		
VERTICAL LOAD TEST, APPARATUS BODY		

	Bidder Complies	
	YES	NO
The fire body shall exceed a vertical load testing. The vertical load test to the fire body shall follow the same strict and detailed requirements of the Economic Commission for Europe Structural Standard, ECE-29R as applied to the cab. The fire body shall be placed under a vertical load test to show structural integrity. There shall be 65,979 lbs. (29.53 metric tons) applied to the fire body. There shall be no structure failures to the body and body compartments. A complete photographic, video, data, and dimensional record of these tests shall be available and placed on record for customer evaluations.		
COMPARTMENT, LADDER STORAGE There will be one-(1) ladder storage compartment installed through the center of the polypropylene water tank constructed of smooth aluminum plate for the storing of required equipment. Individual internal compartments will house one-(1) 24' extension ladder, one-(1) 14' roof ladder, one-(1) 10' folding ladder and specified pike poles. The floor of the compartment will be lined to aid in both loading and unloading of the equipment. The compartment will have a hinged aluminum door with latch mechanism to facilitate access to the equipment. The door will be installed using a stainless steel piano hinge and attached with stainless steel nuts and bolts. Absolutely no self-tapping screws or pop rivets shall be acceptable.		
STORAGE TUBES, PIKE POLE Four-(4) aluminum tubes shall be installed on the apparatus for pike pole storage. One-(1) end shall be notched to allow the poles to be locked in place. The tubes will be located in ladder storage compartment.		
HARD SLEEVE SYSTEM A Ziamatic Hard Sleeve Gantry System model HSG-1-D-10 will be provided on top of the driver's side catwalk on top of the compartments. A plate will be attached to the bottom of the Gantry that will hold a staked assembly so the rear beacon can tip up with the system or Ziamatic light bracket with gantry can be utilized. The system will be tied to the door ajar. A scuff plate will be installed on body for rear Gantry handle to prevent handle from scratching body when using the system. The suction hose will be secured with Velcro straps and footman loops.		
TRAYS, SUCTION HOSE		

Montville Bid Specifications

	Bidder Complies	
	YES	NO
Two-(2) aluminum suction hose storage trays will be installed above the right side compartments. Each tray will hold one-(1) 10' section of the specified suction hose and have spring latches to hold hose in position. Make / Model: Ziamatic HHS-TMV-2-ST The tray will be installed on the portable tank rack. Velcro straps and footman loops will be provided to secure the hose.		
COMPARTMENT, SUCTION HOSE A suction hose compartment will be located in the hose bed. The compartment will be designed to hold two-(2) sections of hard suction hose. The floor of the compartment will be lined to aid in both loading and unloading of the equipment. The compartment will have a hinged aluminum door with latch mechanism to facilitate access to the equipment. The door will be installed using a stainless steel piano hinge and attached with stainless steel nuts and bolts. Absolutely no self-tapping screws or pop rivets will be acceptable. The compartment will be located to the officer's side of the hose bed and will accommodate two-(2) 12' x 6" of suction hoses.		
RACK, PORTABLE TANK, RIGHT SIDE A Ziamatic "Quick Lift" model PTS portable tank lowering device shall be provided on the right side of the apparatus. The Quic Lift shall be comprised of two-(2) high strength aluminum castings with 12 volt linear actuators for raising and lowering the portable tank. The "Quic Lift" system is designed to mount in an upright position above the apparatus body's low side compartments and shall be braced to the hose bed sides. When the portable tank is stored, it shall be up and against the hose bed body side, and when in a lowered position the portable tank shall have swung down approximately 29" below the bottom mounts of the Quic Lift system. The portable tank shall be mounted in the rack so that it is equally spaced and balanced. The control shall be a momentary switch, properly labeled, and located on the side pump panel. There shall be a detent pin provided to remove and allow the portable tank to be manually lowered in the event of an electrical failure or breakdown. The portable tank will accommodate the specified 2100 gallon Fol-Da-Tank.		

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	Bidder Complies	
	YES	NO
A Ziamatic model PTS-HA-CH center hinge hardware kit shall be installed on the electric portable tank rack for additional support. A cover constructed of smooth aluminum shall be provided and installed over the folding tank rack. The cover shall be painted job color.		
AIR BOTTLE COMPARTMENT(S), BODY WHEEL WELL There will be two (2) air bottle compartment(s) located in the body wheel well to house three-(3) spare SCBA cylinders. The compartment will be lined to provide scuff protection to the equipment. The bottom of the compartment will be supported to eliminate breakage. The compartment will be vented to facilitate moisture drainage. There will be one-(1) compartment located in the officer's side forward and rearward body wheel well panel. The compartments will house Scott 4500 30-minite cylinders.		
EXTINGUISHER COMPARTMENT(S), BODY WHEEL WELL There will be one (1) extinguisher compartment(s) located in the body wheel well to house two-(2) extinguishers (2-1/2 gallon water and 20-pound ABC). The compartment will be lined to provide scuff protection to the equipment. The bottom of the compartment will be supported to eliminate breakage. The compartment will be vented to facilitate moisture drainage. The compartment located in the driver's side rearward body wheel well panel.		
STORAGE COMPARTMENT, BODY WHEEL WELL There will be a storage compartment located in the front body wheel well to house miscellaneous equipment. The compartment will be lined to provide scuff protection to the equipment. The bottom of the compartment will be supported to eliminate breakage. The compartment will be vented to facilitate moisture drainage. The compartment located in the driver's side forward body wheel well panel. The compartments will house Scott X3 Pro air pack with 4500 30-minite cylinder.		
DOORS, WHEEL WELL COMPARTMENTS The wheel well compartment doors shall be brushed stainless steel with a push button trigger latch. The driver's side rearward door will be a triple bottle style that will in close the fuel fill inlet.		
BODY TRIM		

	Bidder Complies	
	YES	NO
The standard body trim shall include the following: There shall be drip rail installed over the compartment door openings. A drip rail shall be located over each compartment door. This drip rail shall form a lip over the exterior door pans to prevent water from running into a compartment. The vertical rear face of the body shall be covered with smooth aluminum plate. There will be one-(1) handrail installed on each side of the apparatus at the rear. The handrails will be constructed from 1-1/4" knurled stainless steel. The handrails will be mounted with chrome plated end stanchions. Each handrail will be sufficient in length to meet all standard requirements. The handrails will meet or exceed NFPA 1901 requirements. No rear stanchions shall be provided on this unit.		
FUEL FILL, RECESSED WITH DOOR There shall be a recessed fuel fill assembly with a non-locking door mounted on the left side of the apparatus body. The fuel fill assembly shall be equipped with a fuel fill cap, retention ring and hinged door. The assembly shall be properly labeled "DIESEL FUEL ONLY". The fuel fill will be enclosed by a triple fender storage door with the specified double SCBA fender storage.		
MUD FLAPS, REAR The rear axle mud flaps shall be constructed from hard black rubber and installed at the rear of the body fenders.		
REAR MUD FLAP, FULL WIDTH An additional full width mud guard shall be installed behind the standard rear mud flaps. The full width guard shall be 1" from the ground.		
RUBRAIL There shall be an aluminum rub rail installed on both sides of the lower body compartments. The rub rail shall be constructed from "C" channel extrusion. The aluminum rub rail shall be bolted in place with stainless steel bolts, and spaced from the fire body to provide body protection. The		

	Bidder Complies	
	YES	NO
solid rub rail shall serve as protection to the side doors when encountering close objects. Tread plate rub rails or welded on shall not be acceptable. A 2" reflective stripe shall be added in the rub rail. The reflective striping shall be white.		
REAR STEP The rear step will be constructed of 3/16" (.1875") aluminum tread plate. The rear step will be flanged down 2.50" and in 1.00" to maximize strength and rigidity. The rear step will be bolted on for removal or replacement. All running board and step surfaces will comply with NFPA 1900.		
REAR STEP The rear step dimensions shall be 72"W X 18"D, hinged fold up design with 45 degree outer rear corners and a latch to secure it in the up position. Step shall be wired to the door ajar switch. ICC lights shall be provided on the outer edge of the tailboard as well as under the tailboard for when it is stored in the up position.		
CHROME FOLDING STEP(S), FRONT OF BODY There shall be five (5) large chrome-folding step(s) with a minimum surface area of thirty-five (35) square inches. The step(s) shall be mounted on the front face of the forward compartment as directed by the customer. There shall be an LED light installed above and below each step. There will be three-(3) steps installed on driver's side front compartment face and two-(2) on the officer's side.		
CHROME FOLDING STEP(S), REAR OF BODY There shall be three (3) rear chrome folding step(s) installed on the rear of the body. Each step shall have a minimum of thirty-five (35) square inches of surface area. There shall be an LED light installed above and below each step. The steps will be located on the driver's side of the body.		
CHROME FOLDING STEP(S), ADDITIONAL		

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	Bidder Complies	
	YES	NO
There will be two (2) large chrome-folding step(s) with a minimum surface area of thirty-five (35) square inches. The step(s) will be mounted on the apparatus as directed by the customer. There will be an LED light installed above and below each step. There will be one-(1) steps on each side of the apparatus on back of the cab.		
STEP(S), SLIDE OUT Two (2) slide-out step(s) shall be installed under the apparatus as specified constructed from 3/16" (.1875) aluminum tread plate. Two-(2) sealed roller bearing slides, with a total capacity of 500-pounds shall be installed one-(1) each side of the platform mechanically held in both the retracted and extended positions with a rugged quick-action latch. The steps shall be wired to the open door indicator system activating the light in the cab when the step is in the extended position. The will be a slide out step located below compartment L1 and compartment L3.		
TOW EYES, REAR Two-(2) 1" thick rear tow eyes constructed of A-36 steel shall be mounted below the frame at the rear of the vehicle. The tow eyes shall be attached to steel weldments that are mounted to the apparatus. The eyes shall have a minimum dimension of three-(3) inches. The tow eyes shall be used for towing, not lifting the vehicle.		
HANDRAIL, BELOW HOSE BED There will be one-(1) handrail installed below the hose bed. The handrail will be constructed from 1-1/4" knurled stainless steel. The handrail will be mounted with chrome plated end stanchions. The handrail will meet or exceed NFPA 1901 requirements.		
HANDRAIL(S), FRONT OF BODY There will be one-(1) 12" handrail installed on each side of the apparatus on the front face of the compartments. The handrails will be constructed from 1-1/4" knurled stainless steel. The handrails will be mounted with chrome plated end stanchions. The handrails will meet or exceed NFPA 1901 requirements.		
HOSE BED DIVIDER(S) Two (2) hose bed divider(s) shall be manufactured from 1/4" (.250") smooth aluminum plate with an extruded aluminum base welded to the bottom. The divider shall have an extruded track		

	Bidder Complies	
	YES	NO
to slide in to allow the hose bed to adjust for different hose capacities. One end of the divider shall have a 3" radius corner. The divider shall be sanded to prevent damage to hose.		
HAND HOLE IN HOSE BED DIVIDER There shall be two (2) hand hole(s) installed in the rear of the hose bed divider(s		
HOSE BED COVER A hose bed cover constructed of 16 oz. heavy-duty Hypalon shall be provided. Cover shall be fire retardant and installed over hose bed. The cover shall have bungee cords and "J" hooks installed around the perimeter of the hose bed. The end of the hose bed cover shall be secured and cover the hose bed opening. The cover shall completely protect the hose in the hose bed and prevent hose from inadvertently deploying during normal operation. A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area. The Hypalon end flap shall be secured using bungee cords and "J" hooks. The cover(s) shall completely protect the hose and prevent the hose from inadvertently deploying during normal operation. The cover shall meet the TIA 03-1 NFPA requirement. The cover and/or end flaps shall be red in color.		
HOSE BED CAPACITY The hose bed shall have the capacity to hold the following: 2500' of 5" large diameter supply hose 200' of 3" double jacket fire hose 200' of 2 1/2" double jacket fire house A safety sign FAMA22, which warns of the need to secure hose, shall be visible to personnel at the hose storage area.		
COMPARTMENT UNISTRUTS Five (5) set(s) of aluminum unistruts will be installed in the compartment(s) specified by the department for future installation of shelves or to allow the specified trays/tool boards to be adjustable.		
SHELF, ADJUSTABLE		

	Bidder Complies	
	YES	NO
There will be five (5) 45" deep adjustable shelf(ves) constructed from 3/16" brushed finish aluminum. Each shelf will have a 2" upward bend at front and rear with side supports. Located as follows: One (1) in lower compartment L1, one (1) in lower compartment L3, One in compartment R1, One (1) in compartment R3 and one (1) in compartment B1.		
TOOL BOARD(S), ALUMINUM PEG BOARD Three (3) aluminum peg style tool board(s) will be installed in the specified compartment(s) for the mounting of additional equipment. The tool boards will be Zico EZ-Mount tool baords. The tool board will be located as follows: On the Cab Interior Rear Wall Aluminum Panel, Upper rear wall of compartment L3, and rear wall of Compartment L2 The tool boards will cover the entire rear compartment wall.		
TOOL BOARD(S), SENSIBLE PRODUCTS One (1) Mul-T-Mount ChanL PanL style tool board(s) will be installed in the specified compartment(s) for the mounting of additional equipment. The tool boards will be Sensible Products, Inc. boards. The toolboard will be located as follows: Upper rear wall of compartment L1 The tool boards will cover the entire rear compartment wall.		
COMPARTMENT DIVIDER(S) Two (2) compartment divider(s) will be mounted in the specified compartment. The divider(s) will be bolt-in and constructed of 3/16" (.1875") smooth aluminum plate. There will be a bolt-in divider will be installed on the lower compartment L3 and compartment R3 to isolate the compartments from B1. The divider will be brushed finish aluminum.		
COMPARTMENT FLOORING, MODUALR TILE There will be modular tile installed on the compartment floor(s). The flooring tile will be completely removable for cleaning. If the compartment has a roll out tray mounted directly on the floor, the tile will be mounted in the tray.		

	Bidder Complies	
	YES	NO
Color: Black		
SHELF / TRAY FLOORING, MODULAR TILE There will be modular Tile flooring installed in the specified shelf or tray. The tile will be completely removable for cleaning. Color: Black		
ELECTRICAL SYSTEM, BODY The body electrical system shall be designed as an integrated electrical package specifically engineered for fire apparatus application. The integrated electrical system shall interface the body and chassis through an engineered system. All body electrical equipment installed shall conform to current automotive electrical system standard, the latest Federal DOT standards, and the requirements of the applicable NFPA Apparatus Standard. Twisted pair shielded wire shall be provided within the electrical system for noise reduction. The wiring harness shall conform to SAE J-1128 with GXL temperature properties. All exposed wiring shall be run in loom with a minimum 289 °F rating. All wiring looms shall be properly supported and attached to body members along the entire run. All wiring shall be mounted as to provide protection from water and heat. All connections shall be crimp type with heat shrink tubing with insulated shanks to resist moisture and foreign debris such as grease and road grime. Weather resistant connectors shall be provided throughout to ensure the integrity of the electrical system. Gold contacts shall be used where required for superior connectivity and improved performance. All wiring looms shall be properly supported and attached along the entire run. At any point where wire or looms must pass through metal, rubber grommets shall be installed to protect the wire from abrasion. Wiring shall be individually and permanently numbered, function and color-coded using an indexing numbering system in which all circuits are categorized by function and shall be permanently marked every three (3) inches on the insulation to allow for easy identification. All internal wire end terminals, including locking bulkhead connectors, shall be mechanically affixed to the wire ends by machine terminal crimping presses. No hand-crimped terminals shall be acceptable. All internal splices shall be ultrasonically welded connections - no butt style connections shall be acceptable. All internal wiring shall be of the high temperature GXL type wire and shall be protected by wiring duct wherever possible. The body shall have an in-vehicle networking system, to provide real time or current state diagnostic capability and reduce troubleshooting or down time.		

	Bidder Complies	
	YES	NO
An electrical harness quick disconnect shall be provided to facilitate removal of the body in the future. All circuit protection shall be integral of control modules. There shall not be automatic reset circuit breakers located in the body main harnessing and distribution system. The system shall have the capability of delivering multiple signals via a data bus, utilizing specifications set forth by SAE J1939. The body includes strategically located solid-state modules within the body. The modules are for the body lighting and controls. The system shall consist of all solid-state components contained inside sealed aluminum extrusions and/or weatherproof Deutsch enclosures referred to as nodes. The system shall also incorporate, as needed, miniature nodes. The nodes shall not have special mounting requirements. The system, at a minimum, shall be capable of performing the following functions: -Load management and sequencing -Switch loads -Receive digital and analog signals -Perform and report diagnostics -Continuously report vehicle status -System is expandable -Power distribution outputs -Switch input capability -Solid state circuitry -Self-contained LED diagnostic indicators -PWR for input power status (red) -COM for communication status (green) -The complete body electrical system shall be 100% documented and contain independent circuit diagrams with point to point wiring information, as shall as a general component diagram be included in the apparatus manua		
12-VOLT TESTING The apparatus low voltage system shall be tested and certified. A copy of certification shall be provided to the purchaser with the apparatus. Reserve Capacity Test The unit shall be run until all engines, engine compartment temperatures are stabilized and the battery system is fully charged. The engine shall be shut off and the minimum continuous electrical load be activated for ten-(10) minutes. All electrical loads shall be shutoff after ten-(10) minutes and the battery system shall then be capable of restarting the engine. Alternator Performance Test at Idle		

	Bidder Complies YES	Bidder Complies NO
Minimum continuous electrical loads shall be activated while the unit is at idle speed. Alternator Performance Test at Full Load The total continuous electrical load shall be activated with the engine running up to the manufacturer's governed speed. The test duration shall be a minimum of two-(2) hours. Activation of the load management system shall be permitted during the test. If however, an alarm is sounded by excessive battery discharge as detected by the system or a system voltage of less than 11.8 volts DC for a 12-volt nominal system for more than 120 seconds, shall be considered a test failure. Low Voltage Alarm Test The engine shall be shut off and the total continuous electrical load shall be activated and continue to be applied until the excessive battery discharge alarm activates. The test shall be considered a failure if the alarm has not sounded within 140 seconds after the voltage drops to 11.8 volts.		
WIRING PROTECTION All 12-volt wiring shall be run in high temperature, rated at a minimum of 275° F, split loom for easy access to wires when trouble shooting.		
EMI/RFI PROTECTION The apparatus shall be manufactured to incorporate the latest designs in the electrical system with components that are state of the art to insure electromagnetic interference (EMI) and radio frequency interference (RFI) emissions are suppressed at the source. The apparatus shall have the ability to operate in typical fire and rescue situations with no adverse effects from EMI and/or RFI. The apparatus shall utilize components that are fully protected and wiring that utilizes shielding and loop backgrounds where required to control EMI/RFI susceptibility. The apparatus shall be bonded through ground straps. Relays and solenoids that are suspect to generating spurious electromagnetic radiation are diode and/or resistor protected to prevent transient voltage spikes. In order to prevent the radio frequency interference completely the purchaser shall be requested to provide a listing of the type, power output, and frequencies of all radio and bio medical equipment that is proposed to be used on the apparatus.		
LIGHT(S), LED COMPARTMENT There will be twelve (12) LED compartment strip lights installed on the apparatus. There will be two-(2) lights installed in each body compartment.		

	Bidder Complies	
	YES	NO
DOOR AJAR SWITCHES All apparatus body doors shall be provided with an auto door switch. These switches shall operate the compartment interior lights and activate the door ajar indicator on each side of apparatus body when the door is opened. There shall be a red door ajar light mounted in the cab, in view of the driver to indicate an unsecured door. There shall be a buzzer mounted in the cab that shall alert the driver.		
WARNING LIGHT PANELS The mounting panels for the upper side body warning lights will be mounted on painted job color red aluminum panels in place of tread plate.		
LIGHTBAR, 72" WHELEN FREEDOM IV There will be a Whelen Freedom IV 72" LED light bar installed on the cab roof as far forward as possible. The light bar will incorporate an anodized extruded heavy duty aluminum base and cover chassis with two-(2) front red corner modules with two-(2) red end cap modules, two-(2) interior white modules and eight-(8) interior red modules. The light will be activated by the emergency light switch and individual light bar switch located in the cab dash. The light bar willl meet NFPA 1900 edition as configured.		
OPTICOM There will be one-(1) GTT Opticom (Model 795H) LED low profile emitter installed in the Lightbar and controlled by a switch in the cab. The unit will operate in accordance with the current NFPA requirements.		
LIGHTBARS, 22" SIDE FACING A pair of Whelen Mini Edge Ultra Freedom IV Linear Super-LED LC Series light bars model F4NMINI shall be provided, one-(1) each side of the cab roof facing outwards between the front and rear doors. The F4NMINI shall consist of two 22" Mini Ultra Freedom IV light bars. Each Mini Ultra Freedom IV light bar shall incorporate an anodized extruded aluminum heavy duty base and cover chassis with two red Linear LED corner modules, two white Linear-LED light in the front center and one red Linear-LED end cap light with clear optic lenses. The light bars shall be controlled in the following manner: Calling for Right of Way - All Positions Blocking Right of Way - Clear shall not be Active		

	Bidder Complies	
	YES	NO
The lights shall be activated by a single emergency light switch located on the light switch panel in the cab. The light bars shall meet NFPA 1901 edition as configured.		
LIGHTS, ZONE B/D UPPER FRONT BODY Two-(2) Whelen M9 Series Super-LED model M9RC will be installed, one-(1) each side of the upper front corner of the body. The warning light will incorporate red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens will provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board will provide additional protection against environmental elements. The solid state warning lights will be vibration resistant. The self-contained flashing light will have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a M9FC chrome flange and hardware for horizontal mounting. There will be one-(1) light installed on each side of the apparatus on the upper front corners of the body.		
LIGHTS, ZONE B/D UPPER REAR BODY Two-(2) Whelen M9 Series Super-LED model M9RC will be installed, one-(1) each side of the upper rear corner of the body. The warning light will incorporate red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens will provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board will provide additional protection against environmental elements. The solid state warning lights will be vibration resistant. The self-contained flashing light will have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a M9FC chrome flange and hardware for horizontal mounting. There will be one-(1) light installed on each side of the apparatus on the upper rear corners of the body.		
LIGHTS, ZONE C UPPER OUTBOARD Two-(2) Whelen Strip-Lite Plus Series model PSR01FCR will be installed, one-(1) each side upper rear of the apparatus in the outboard position. The warning lights shall incorporate red Linear Super-LEDs, a clear optic hard coated polycarbonate lens. The surface mount module includes a chrome flange and hardware for horizontal mounting.		
LIGHTS, ZONE C UPPER INBOARD		

	Bidder Complies	
	YES	NO
Two-(2) Whelen M6 Series Super-LED model M6AC will be installed, one-(1) each side on the upper rear of the apparatus in the inboard position. The warning light will incorporate amber Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The lights will only activate when the park brake is set.		
LIGHTS, ZONE B/D FRONT LOWER Two-(2) Whelen M6 Series Super-LED model M6V2RC will be installed, one-(1) each side forward portion of the apparatus. The Whelen M6 Series Model M6V2RC combination 180° warning/perimeter light will be provided. The M6V2RC will incorporate Linear Super-LED® and Smart LED® technology. The configuration of the M6V2RC will be a M6 V-series red warning light and a perimeter light with a clear non-optic polycarbonate lens. The warning light will consist of two V-series PC boards containing six red Super-LEDs on each PC board. Clear optic collimators and reflectors will be installed with each PC board for maximum illumination. The perimeter light will consist of six white Super-LEDs installed on the scene light PC board. The perimeter light will be installed at 45° angle with a TIR reflector for supreme radiance. The warning light assembly and the perimeter light assembly are installed on a main PC board. The warning light will include an internal flasher with 25 Scan-Lock flash patterns including low power and steady burn. The M6V2RC will also be provided with a synchronize feature. The M6V2RC warning light will meet KKK 1822F, NFPA 1900, and NFPA 1917 specifications. The M6V2RC perimeter light will meet AMD 024 with two M6V2RC on each side of the vehicle and NFPA 13.10.1.2 for one M6V2RC up to six feet. The lens/reflector assembly will be sealed and resistant to water, moisture, dust, and other environmental conditions. The hard coated lens will provide extended life/luster protection against UV and chemical stresses. The light engine will be installed at the rear of the unit and be vacuum tested to ensure proper sealing. The PC boards will be conformal coated for additional protection. The M6V2RC will be furnished with 12" unterminated pigtails. Rubber gasket, screws, and screw grommets will be included for installation. The M6V2RC, with the aid of two screws, will have the ability to be installed as a surface mount light. The warning light is covered by a five year factory warranty. There will be one-(1) light located on each side of the apparatus in the cab wheel well area. The perimeter lights will activate with the reverse circuit and the respective turn signal.		
LIGHTS, ZONE B/D MIDSHIP LOWER		

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	Bidder Complies	
	YES	NO
Two-(2) Whelen M6 Series Super-LED model M6V2RC will be installed, one-(1) each side midship of the apparatus. The Whelen M6 Series Model M6V2RC combination 180° warning/perimeter light will be provided. The M6V2RC will incorporate Linear Super-LED® and Smart LED® technology. The configuration of the M6V2RC will be a M6 V-series red warning light and a perimeter light with a clear non-optic polycarbonate lens. The warning light will consist of two V-series PC boards containing six red Super-LEDs on each PC board. Clear optic collimators and reflectors will be installed with each PC board for maximum illumination. The perimeter light will consist of six white Super-LEDs installed on the scene light PC board. The perimeter light will be installed at 45° angle with a TIR reflector for supreme radiance. The warning light assembly and the perimeter light assembly are installed on a main PC board. The warning light will include an internal flasher with 25 Scan-Lock flash patterns including low power and steady burn. The M6V2RC will also be provided with a synchronize feature. The M6V2RC warning light will meet KKK 1822F, NFPA 1900, and NFPA 1917 specifications. The M6V2RC perimeter light will meet AMD 024 with two M6V2RC on each side of the vehicle and NFPA 13.10.1.2 for one M6V2RC up to six feet. The lens/reflector assembly will be sealed and resistant to water, moisture, dust, and other environmental conditions. The hard coated lens will provide extended life/luster protection against UV and chemical stresses. The light engine will be installed at the rear of the unit and be vacuum tested to ensure proper sealing. The PC boards will be conformal coated for additional protection. The M6V2RC will be furnished with 12" unterminated pigtails. Rubber gasket, screws, and screw grommets will be included for installation. The M6V2RC, with the aid of two screws, will have the ability to be installed as a surface mount light. The warning light is covered by a five year factory warranty. There will be one-(1) light located on each side of the apparatus on the pump panel running boards toward the body. The perimeter lights will activate with the reverse circuit.		
LIGHTS, ZONE B/D MIDSHIP LOWER Two-(2) Whelen Strip-Lite Plus Series model PSR01FCR will be installed, The warning lights shall incorporate red Linear Super-LEDs, a clear optic hard coated polycarbonate lens. The surface mount module includes a chrome flange and hardware for horizontal mounting. There will be one-(1) light located on each side of the apparatus in the rub rails below compartment L1 / R1.		
LIGHTS, ZONE B/D MIDSHIP LOWER Two-(2) Whelen M6 Series Super-LED model M6V2RC will be installed, one-(1) each side midship of the apparatus. The Whelen M6 Series Model M6V2RC combination 180° warning/perimeter light will be provided. The M6V2RC will incorporate Linear Super-LED® and Smart LED® technology. The configuration of the M6V2RC will be a M6 V-series red		

	Bidder Complies	
	YES	NO
warning light and a perimeter light with a clear non-optic polycarbonate lens. The warning light will consist of two V-series PC boards containing six red Super-LEDs on each PC board. Clear optic collimators and reflectors will be installed with each PC board for maximum illumination. The perimeter light will consist of six white Super-LEDs installed on the scene light PC board. The perimeter light will be installed at 45° angle with a TIR reflector for supreme radiance. The warning light assembly and the perimeter light assembly are installed on a main PC board. The warning light will include an internal flasher with 25 Scan-Lock flash patterns including low power and steady burn. The M6V2RC will also be provided with a synchronize feature. The M6V2RC warning light will meet KKK 1822F, NFPA 1900, and NFPA 1917 specifications. The M6V2RC perimeter light will meet AMD 024 with two M6V2RC on each side of the vehicle and NFPA 13.10.1.2 for one M6V2RC up to six feet. The lens/reflector assembly will be sealed and resistant to water, moisture, dust, and other environmental conditions. The hard coated lens will provide extended life/luster protection against UV and chemical stresses. The light engine will be installed at the rear of the unit and be vacuum tested to ensure proper sealing. The PC boards will be conformal coated for additional protection. The M6V2RC will be furnished with 12" unterminated pigtails. Rubber gasket, screws, and screw grommets will be included for installation. The M6V2RC, with the aid of two screws, will have the ability to be installed as a surface mount light. The warning light is covered by a five year factory warranty. There will be one-(1) light located on each side of the apparatus in the body wheel well panels. The perimeter lights will activate with the reverse circuit and the respective turn signal.		
LIGHTS, ZONE B/D MIDSHIP LOWER Two-(2) Whelen Strip-Lite Plus Series model PSR01FCR will be installed, The warning lights shall incorporate red Linear Super-LEDs, a clear optic hard coated polycarbonate lens. The surface mount module includes a chrome flange and hardware for horizontal mounting. There will be one-(1) light located on each side of the apparatus in the rub rails below compartment L3 / R2.		
LIGHTS, ZONE B/D REAR LOWER Two-(2) Whelen LINZ6 Series Super-LED model LINZ6R lights will be installed, one-(1) each side rearward portion of the apparatus. The warning light will incorporate six red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens will provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board will provide additional protection against environmental elements. The solid state warning lights will be vibration resistant. The self-contained flashing light will have 69		

	Bidder Complies	
	YES	NO
Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. The surface mount module includes a black flange and hardware for horizontal mounting. There will be one-(1) light located on each side of the apparatus below compartment L3 / R2.		
LIGHTS, ZONE C LOWER Two-(2) Whelen M6 Series Super-LED model M6RC will be installed, one-(1) each side on the lower rear of the apparatus. The warning light will incorporate red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The hard coated lens will provide extended life/luster protection against UV and chemical stresses. The encapsulated lens/reflector assembly and conformal coated PC board will provide additional protection against environmental elements. The solid state warning lights will be vibration resistant. The self-contained flashing light will have 164 Scan-Lock flash patterns including synchronize feature and steady burn. The warning light is covered by a five year factory warranty. There will be one-(1) light located on each side of the apparatus in the rear tail light housings.		
STOP, TURN AND BACK-UP LIGHTS The stop, turn and backup lights will be Whelen M6 Series individual LED fixtures.		
HOUSING, REAR TAIL LIGHT ASSEMBLY The fixtures shall be mounted on each rear face of the body in a model M6FCV4, four-(4) light head chrome housing.		
CLEARANCE LIGHTS AND REFLECTORS The clearance lights will be LED lights, which include two-(2) red marker lights, four-(4) red rectangular reflectors, two-(2) amber rectangular reflectors and one-(1) red three light cluster recessed in the rear step.		
LIGHTS, BRITAX END/CORNER LED Two-(2) Britax model 427 (12V) LED rubber mounted angled clearance lights shall be mounted, one-(1) each side on the rear corners of the apparatus body. The lights shall be wired to the chassis clearance and marker lights. The lens color shall be red/amber.		
DIRECTIONAL/MARKER LIGHTS, PUMP PANEL AREA		

Montville Bid Specifications

	Bidder Complies	
	YES	NO
Two-(2) Weldon 9186-8580-29 auxiliary side directional/marker lights will be provided and wired to the running lights & turn signals. There will be one-(1) light located on each side of the apparatus below the rearward portion pump panel running boards. The lights will be wired to the running lights and turn signals. **LIGHTS, UNDERBODY** There will be ten (10) LED underbody light(s) installed at a location to be determined by the Fire Department. The underbody light(s) will illuminate the ground beneath the apparatus. The lights shall be controlled by a switch in the cab. There will be a light located below each pump panel running board, compartment L1, compartment L3, compartment R1, compartment R2, each side below the rear of the body, and under the front bumper facing forward.		
LIGHT, LICENSE PLATE A LED light will be provided at the rear of the apparatus to illuminate the license plate.		
LIGHT(S), LED PERIMETER ILLUMINATION There will be four (4) LED perimeter illumination light(s) provided as specified. The lights will be located on the front hose bed wall. Two-(2) will be installed in the 5" hose bed, one-(1) in the 3" hose bed, one (1) in the 2 1/2" hose bed.		
ADDITIONAL SCENE LIGHT WIRING, UPPER REAR MOUNTED The upper rear body mounted scene lights will also be wired to come one when the transmission is placed into reverse and master warning switch is on. The driver and officer side body mounted scene lights will also be wired to come on when the transmission is placed into reverse and master warning switch is on.		
LIGHT(S), 12-VOLT BROW MOUNT There will be three-(3) Whelen Pioneer Summit model S30W (no marker lights) LED scene lights installed. There will be one-(1) light located on each side of the apparatus on the cab side roof facing outwards and one-(1) located on the rear body area. The housing will be powder coated white.		

	Bidder Complies	
	YES	NO
The brow scene lights will be activated by three-(3) switches located in the cab dash panel labeled LEFT CAB SCENE, RIGHT CAB SCENE AND REAR BODY SCENE.		
LIGHT(S), 12-VOLT BROW MOUNT There will be two-(2) Whelen Pioneer Summit model S72W (no marker lights) LED scene lights installed. There will be one-(1) light located on each side of the apparatus on the hose bed sides facing outwards. The housing will be powder coated white. The brow scene lights will be activated by two-(2) switches located in the cab dash panel labeled LEFT BODY SCENE AND RIGHT BODY SCENE.		
LIGHT(S), 12-VOLT BROW MOUNT There will be a Whelen Pioneer Summit model S72MW LED scene light installed below the light bar. The light will feature five (5) integrated marker lights. The housing will be powder coated white. The brow scene light will be activated by a single switch located in the cab dash panel labeled FRONT CAB SCENE.		
PAINT FINISH, CAB/BODY The apparatus cab/body shall be painted with AkzoNobel Sikkens brand paint. The paint process shall meet or exceed current state regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water, and soil. Contractor shall, upon demand, provide evidence that the manufacturing facility is in compliance with State EPA rules and regulations. The body exterior shall have no mounted components prior to painting to assure full coverage of metal treatments and paint to the exterior surfaces of the body. Any vertically or horizontally hinged smooth-plate compartment doors shall be painted separately to assure proper paint coverage on body, door jambs and door edges. Paint process shall feature AkzoNobel Sikkens high solid BTLV products and be performed in the following steps: Corrosion Protection - all aluminum surfaces shall be treated with the AkzoNobel Sikkens LV 260 Epoxy coating to provide superior corrosion resistance and excellent adhesion of the base coat.		

	Bidder Complies	
	YES	NO
AkzoNobel Sikkens Sealer/Primer BTLV - acrylic urethane sealer/primer shall be applied to guarantee excellent gloss hold-out, chip resistance and a uniform base color. AkzoNobel Sikkens High Solid BTLV650 (Base coat) - a lead-free, chromate-free high solid polyurethane base coat shall be applied, providing excellent coverage and durability. A minimum of two-(2) coats shall be applied. AkzoNobel Sikkens High Solid BTLV650 (Clear coat) - high solid LV clear coat shall be applied as the final step in order to ensure full gloss and color retention and durability. A minimum of two-(2) coats shall be applied. Any location where aluminum is penetrated after painting, for the purpose of mounting steps, hand rails, doors, lights, or other specified components shall be treated at the point of penetration with a corrosion inhibiting pre-treatment (ECK Corrosion Control). The pre-treatment shall be applied to the aluminum sheet metal or aluminum extrusions in all locations where the aluminum has been penetrated. All hardware used in mounting steps, hand rails, doors, lights, or other specified components shall be individually treated with the corrosion inhibiting pre-treatment. After the paint process is complete, the gloss rating of the unit shall be tested with a 60 degree gloss meter. Coating thickness shall be measured with a digital MIL gauge and the orange peel with a digital wave scan device.		
PAINT COLOR/CODE The customer will specify the exact paint color and number for the completed chassis. The paint color will then be cross-referenced to the Sikkens number. The apparatus chassis will then be painted as described in the paint section with this color. The lower cab and entire body will be red to match L0042EW (reference H5747).		
CAB PAINT FINISH, TWO TONE The custom cab shall have a two-tone paint finish. The paint colors shall be furnished by the customer. The break in the color shall be at the bottom of the chassis window, unless otherwise specified by the department. All cab exterior components including doors and glass, shall be removed. The complete cab exterior shall be thoroughly sanded, solvent cleaned and finished with high luster polyurethane paint before mounting of body to assure full coverage of paint to all surfaces Reference H5747 for the cab paint break line.		
PAINT COLOR/CODE The customer will specify the exact paint color and number for the completed chassis. The paint		

	Bidder Complies	
	YES	NO
color will then be cross-referenced to the Sikkens number. The apparatus chassis will then be painted as described in the paint section with this color. The upper cab will be white to match 839530EW (reference H5747).		
STRIPE, CAB PAINT BREAK LINE A 1/2" wide Spun Gold pin stripe will be applied at the cab paint break line. A 1/4" black pin stripe will be provided on each side of the gold leaf stripe.		
INTERIOR COMPARTMENT FINISH The interior of the body compartments will be a natural finish.		
DEALER PROVIDED GRAPHICS A dealer provide graphics package to match the customer existing apparatus (M13) will be provided by the dealer.		
SCOTCHLITE STRIPE There shall be a 4" wide Scotchlite stripe, with an additional 1" wide stripe located above and below. The stripes shall be located no higher than 60" from the ground installed on the apparatus cab and body. The stripes shall cover a minimum of sixty percent (60%) of each side of the apparatus and forty percent (40%) of the front and rear of the apparatus. The stripe shall be installed to meet the current NFPA requirements. The 4" striping will be white in color. The 1" striping will be gold in color. The reflective stripe will run straight from the headlights to the front body compartments with a hockey stick design and run to the rear of the body on each side of the apparatus. Design to match customers previous apparatus. The officer side stripe will be straight due to design.		
STRIPE, REAR CHEVRON A minimum of fifty percent of the rear vertical surface of the unit shall be overlaid with a reflective material, installed in an alternating "Chevron" pattern (sloping down and away from the centerline) at a 45-degree angle. Each stripe shall be 6" wide and the colors of stripping shall be in compliance, with the current edition of NFPA 1901. The Chevron striping shall be Reflexite red and yellow.		

Montville Bid Specifications

	Bidder Complies	
	YES	NO
CHEVRON REFLECTIVE STRIPE, REAR STEP The under side of the rear step will be overlaid with Chevron reflective material.		
REFLECTIVE MATERIAL, DESIGNATED WALKING SURFACES 1" wide yellow perimeter marking consisting of individual Reflexite diamonds shall be applied to indicate the outside edge of designated standing and walking areas above 48" from the ground in compliance with 2016 NFPA 1901. Steps, ladders and areas with a railing or structure at least 12" high are excluded from this requirement.		
WARRANTY, BODY MATERIAL & WORKMANSHIP The purchaser shall receive a general two-(2) year or 36,000 miles limited warranty in accordance with, and subject to, warranty certificate RFW0002. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.		
WARRANTY, CUSTOM CHASSIS MATERIAL & WORKMANSHIP The purchaser shall receive a custom chassis two-(2) years or 36,000 Miles limited warranty in accordance with, and subject to, warranty certificate RFW0102. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.		
WARRANTY, CAB STRUCTURAL The prchaser shall receive a cab structure (Aluminum) ten-(10) years or 100,000 miles limited warranty in accordance with, and subject to, warranty certificate RFW0602. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.		
WARRANTY, BODY STRUCTURAL The urchaser shall receive a body structure (Aluminum) ten-(10) years or 100,000 miles limited warranty in accordance with, and subject to, warranty certificate RFW0502. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.		
WARRANTY, CAB PAINT / PERFORATION The purchaser shall receive a paint and finish (Exterior Clear coated) ten-(10) years limited warranty in accordance with, and subject to, warranty certificate RFW0710. The warranty		

	Bidder Complies	
	YES	NO
certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.		
WARRANTY, BODY PAINT / PERFORATION The purchaser shall receive a paint and finish (Exterior Clear coated) ten-(10) years limited warranty in accordance with, and subject to, warranty certificate RFW0710. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.		
WARRANTY, FRAME ASSEMBLY STRUCTURE The purchaser shall receive a frame assembly structural fifty-(50) years or 250,000 miles limited warranty in accordance with, and subject to, warranty certificate RFW0305. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.		
WARRANTY, AXLES **FRONT AXLE** The front axle will be warranted by Hendrickson for five-(5) years / 500,000 miles under the general service application. **REAR AXLE** The rear axle will be warranted by Meritor for five-(5) years with unlimited miles under the general service application.		
WARRANTY, DIESEL ENGINE The Cummins engine shall be warranted for a period of five-(5) years or 100,000 miles, whichever occurs first.		
WARRANTY, REGULATED EMISSIONS SYSTEMS Non-California Engines- The purchaser shall receive a Regulated Emissions Systems five-(5) years or 100,000 miles limited warranty in accordance with, and subject to, warranty certificate RFW0140. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request. Cummins L9 California Engines- The purchaser shall receive a Regulated Emissions Systems five-(5) years or 150,000 miles limited warranty in accordance with, and subject to, warranty certificate RFW0141. The warranty		

	Bidder Complies	
	YES	NO
certificate is incorporated by reference into this proposal, and included with this proposal or available upon request. Cummins X12 / X15 California Engines- The purchaser shall receive a Regulated Emissions Systems five-(5) years or 350,000 miles limited warranty in accordance with, and subject to, warranty certificate RFW0142. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.		
WARRANTY, TRANSMISSION The Allison EVS series transmission shall be warranted for a period of five-(5) years with unlimited mileage. Parts and labor shall be included in the warranty.		
WARRANTY, ANTI LOCK BRAKE SYSTEM The ABS brake system shall be warranted for a period of three-(3) years/300,000 miles.		
WARRANTY, HALE FIRE PUMP EXPRESS WARRANTY Hale Products, Incorporated ("Hale") hereby warrants to the original buyer that products manufactured by Hale are free of defects in material and workmanship for a period of five-(5) years from the date the product is first placed into service or five and one-half (5-1/2) years from date of shipment by Hale, whichever period shall be first to expire. Within this warranty period Hale will cover parts and labor for the first two-(2) years and parts only for years three (3) through five (5). LIMITATIONS HALE'S obligation is expressly conditioned on the Product being: • Subjected to normal use and service • Properly installed and maintained in accordance with HALE'S Instruction Manual and Industry Standards as to recommended service and procedures • Not damaged due to abuse, misuse, negligence, or accidental causes • Not altered, modified, serviced (non-routine), or repaired other than by an Authorized Service facility • Manufactured per design and specifications submitted by the original buyer • Used with an appropriate engine as determined by the engine manufacturers published data • Excluded are normal wear items identified as but not limited to packing, strainers, anodes, filters, light bulbs, intake screens, wear rings, mechanical seals, etc.		
WARRANTY, PLUMBING SYSTEM		

	Bidder Complies	
	YES	NO
The purchaser shall receive a plumbing and piping corrosion-free (Stainless Steel) ten-(10) years or 100,000 miles limited warranty in accordance with, and subject to, warranty certificate RFW0801. The warranty certificate is incorporated by reference into this proposal, and included with this proposal or available upon request.		
WARRANTY, WATER TANK The poly tank manufacturer warrants each tank to be free from manufacturing defects in material and workmanship for the service life of the original vehicle (vehicle must be actively used in fire suppression). The warrant is transferable, with written approval of the manufacturer. Each tank is inspected and tested for leaks prior to leaving the manufacturing facility. The tank shall be installed in the vehicle in accordance to the manufacture's guidelines. There are no warranties, expressed or implied, which extend beyond the description of the face hereof. There is no expressed or implied warranty of merchantability or a warranty of fitness for a particular purpose. Additionally, this warranty is in lieu of all other obligations or liabilities on the part of the Manufacturer.		
MANUAL, CHASSIS OPERATION There shall be two-(2) digital copies of the chassis operation manual provided with the chassis. The digital data shall include a parts list specific to the chassis model.		
MANUALS, ENGINE AND TRANSMISSION OPERATION There shall be two-(2) printed hard copy sets of the engine operation manual and two-(2) printed hard copy sets of the transmission operation manual specific to the model ordered included with the chassis.		
MANUALS, APPARATUS BODY The contractor shall supply, at time of delivery, at two-(2) sets of complete operation and service documentation covering the completed apparatus as delivered and accepted. The documentation shall address at least the inspection, service, and operations of the fire apparatus and all major components thereof.		
MANUALS, FIRE PUMP There will be two-(2) copies of pump manuals provided to the department.		
SAFETY GUIDE		

	Bidder Complies	
	YES	NO
One-(1) copy of the latest edition of FAMA's Fire Apparatus Safety Guide shall be provided with the completed apparatus.		
WIRING DIAGRAMS, "AS BUILT" CAB/CHASSIS There will be a complete digital set of "AS BUILT" electrical schematics provided at the time of delivery. These schematics will have each circuit properly numbered and in color. The schematic will show each connector in the circuitry and the position in which each circuit enters, exits, or terminates. The schematic will be drawn in such a manner as to allow individual circuitry to be followed throughout the apparatus. These schematics will not have the circuitry condensed into a single line or sets of lines. Multiple sheets will be acceptable so long as each of the harnesses is properly identified to the connecting sheet and harness. There will be a border around the paper(s), which contain alpha and numeric characters for indexing coordinate reference. There will be an indexing or part reference document for quick location of items shown on the schematics.		
WIRING DIAGRAMS, "AS BUILT" APPARATUS BODY There will be a complete set of "AS BUILT" electrical schematics provided at the time of delivery. These schematics will have each circuit properly numbered and in color. The schematic will show each connector in the circuitry and the position in which each circuit enters, exits, or terminates. The schematic will be drawn in such a manner as to allow individual circuitry to be followed throughout the apparatus. These schematics will not have the circuitry condensed into a single line or sets of lines. Multiple sheets will be acceptable so long as each of the harnesses is properly identified to the connecting sheet and harness. There will be a border around the paper(s), which contain alpha and numeric characters for indexing coordinate reference. There will be an indexing or part reference document for quick location of items shown on the schematics. This document will refer the user to the appropriate drawing and page number and to sections of the drawing(s) by the means of letter and number coordinates. The schematic will show all harnesses used in the apparatus cab, chassis and body that is supplied by the chassis and body manufacturer. Modifications to the manufactured standard harnesses are to be documented and properly indexed for quick identification. A complete wire number, color, and function listing will accompany the schematics. == Loose Equipment Package - Pumper (Slot 41) - 808.002 08/21/23 ==		

Montville Bid Specifications

	Bidder Complies	
	YES	NO
NFPA REQUIRED EQUIPMENT, FD SUPPLIED The loose equipment as outlined in NFPA 1901, 2016 edition, section 5.9 thru 5.9.4 shall be provided by the fire department unless it is listed in this proposal. All loose equipment shall be installed on the apparatus before placed in emergency service, unless the Fire Department authorized agent signs the State of Exception as listed in the NFPA 1901 Standard for Automotive Fire Apparatus sections 4.21 thru 4.21.2. The loose equipment as outlined in NFPA 1901, 2016 edition, section 5.9 thru 5.9.4 shall be provided by the fire department unless it is listed in this proposal. All loose equipment shall be installed on the apparatus before placed in emergency service, unless the Fire Department authorized agent signs the State of Exception as listed in the NFPA 1901 Standard for Automotive Fire Apparatus sections 4.21 thru 4.21.2.		
LADDER(S), 10' FOLDING There shall be one (1) Alco-Lite Model FL-10, 10' folding ladder(s) provided with the apparatus. The ladder(s) shall be aluminum, single-section with rubber feet. The ladder(s) shall meet or exceed the latest NFPA standards.		
LADDER(S), 14' ROOF There shall be one (1) Alco-Lite model PRL-14, 14' roof ladder(s) supplied with the apparatus. The ladder(s) shall be aluminum, single-section with folding steel roof hooks on one end and steel spikes at the other. The ladder(s) shall meet or exceed the latest NFPA standards.		
LADDER(S), 24' 2-SECTION EXTENSION There shall be one (1) Alco-Lite model PEL-24, 24' two-section ladder(s) supplied with the apparatus. The extension ladder(s) shall be aluminum with steel spurs on one end. The ladder(s) shall meet or exceed the latest NFPA standards.		
SUCTION HOSE, 6" There will be three-(3) 10' x 6" sections of Kochek PVC flexible suction hose supplied with the apparatus. Lightweight aluminum couplings will be provided on the suction hose. A long handle female swivel will be provided on one end and a rocker lug male will be provided for the other end.		
SUCTION HOSE, 6" There will be one-(1) 5' x 6" sections of Kochek PVC flexible suction hose supplied with the apparatus. Lightweight aluminum couplings will be provided on the suction hose. A long handle female swivel will be provided on one end and a rocker lug male will be provided for the other end.		

	Bidder Complies	
	YES	NO
The suction hose will be attached to the front suction swivel.		
SUCTION HOSE, 6" There will be two-(2) 12' x 6" sections of Kochek PVC flexible suction hose supplied with the apparatus. Lightweight aluminum couplings will be provided on the suction hose. A long handle female swivel will be provided on one end and a rocker lug male will be provided for the other end.		
STRAINER, 6" BARREL There will be one-(1) Kochek BS60C, 6" chrome plated barrel strainer supplied with the apparatus. The strainer will have a 6" NH female connection.		
MONITOR A Task Force Tips Crossfire model XFC-42 portable lightweight monitor package consisting of monitor top, stacked tips, stream straightener, portable ground base, and base storage bracket shall be supplied. The components shall be covered by a five-year warranty. Task Force Tips Crossfire, model portable monitor top shall be provided. This top only portion with quick release swivel joint shall be designed for use on truck mounted risers and TFT Safe-Tak 1250 series portable bases. The monitor shall include safety devices that include a locking button which locks the quick release lever when monitor is pressurized, and a 1/4 turn rotational lever lock that secures the horizontal rotation and provides a visual indication that the monitor rotation is locked. For corrosion resistance the monitor shall be constructed from hardcoat anodized aluminum with a red powder coat interior and exterior finish. The monitor shall have a 3-1/4" waterway for delivery of up to 1250 GPM with low friction loss. Vertical elevation shall be controlled through use of a handwheel controlled stainless steel worm gear which allows full travel to the safety stop point of 35 degrees above horizontal with seven rotations of the wheel. When positioned on a truck mounted riser the monitor shall be able to be used below the 35 degree stop point through release of the spring loaded safety pin. An automatic drain to remove remaining water and avoid freezing shall be included. Integral stainless steel stream straightener and pressure gauge shall be included. Task Force Tips Safe-Tak 1250, portable monitor base shall be provided. The monitor base shall include a Safe-Tak, spring loaded butterfly valve designed to rapidly reduce the water flow by 90 percent in the event that contact with the ground is lost. The device shall include an integral carrying handle, four folding stainless steel legs with replaceable tungsten carbide spikes and an anchoring strap attached to a protective cap designed to be stored inside the waterway. The butterfly valve shall have a reset handle located near the inlet to allow the water flow to be reestablished once the base is properly stabilized.		

Montville Bid Specifications

	Bidder Complies	
	YES	NO
The base shall be constructed from hardcoat anodized aluminum and have a red powder coat interior and exterior finish. The base shall have either a single inlet or a dual hose inlet with clapper valve. A storage bracket for the portable base shall be included. Task Force Tips smooth bore stacked tip set shall be provided. For corrosion resistance the tip set shall be constructed from hardcoat anodized aluminum alloy. The set shall consist of four (4) tips with the base tip having a 2-1/2" female NH swivel inlet and 2" outlet. The other tip sizes shall be 1-3/4", 1-1/2" and 1-3/8". Each tip shall be laser engraved with a flow/pressure chart, orifice size, and thread size. Task Force Tips stream straightener shall be supplied. The straightener shall be constructed from extruded aluminum with internal vanes designed to reduce turbulence and increase the reach of smooth bore water streams. The device shall have 2-1/2" female NH rigid inlet and 2-1/2" male NH rigid outlet. The TFT Monitor shall be configured as follows; Monitor PN#-XFT-NJ, Stack Tips PN#-MST-4NJ, Stream Straightener PN#-XF-SS5, Quarter Turn Valve PN#-AV5NJ-NJ-SC, Base Adapter PN#-XFF-APL. The Quarter Turn Valve shall be installed between the monitor and stream shaper.		
PORTABLE TANK(S), 2100 GALLON There will be one (1) Fol-Da-Tank model FDTA-2100, 2100 gallon portable water tank(s) will be supplied with the apparatus. The liner will be constructed from 22 ounce HPR (High Performance Rubber). The HPR fabric is designed with UV, heat and puncture resistance, along with abrasion and cracking (-60-degrees F) qualities. Inside the liner will be equipped with eight-(8) grab handles. The folding frame will be constructed from 1" aluminum square tube (1/8" wall thickness) with snag free finish, die cut, heavy duty gauge hinges and heavy-duty bolts. The tank when folded and stored will have a dimension of 11' 3" long x 8" wide x 29" high and will weight 125-pounds.		
WHEEL CHOCS There will be a pair of Ziamatic model AC-32 non-folding wheel chocks supplied with the apparatus.		
WHEEL CHOCS There will be two-(2) Ziamatic model QCH-32-H horizontal wheel choc holder installed on the apparatus. The location of the chocs will be located at Final Inspection		
MISCELLANEOUS HARDWARE		

Montville Bid Specifications

	Bidder Complies	
	YES	NO
There will be a bag of stainless steel screws, nuts, bolts and washers as used in the construction of the unit shall be provided with the completed apparatus.		
DEALER PROVIDED EQUIPMENT MOUNTING ALLOWANCE An allowance in the amount of ***$10,000.00*** will be provided by the dealer for mounting of customer supplied equipment.		