

**Freetown Fire Department
25 Bullock Road
E. Freetown, MA 02717**

**Specifications for One (1) New
2014 model year or newer Tanker/Tender Apparatus**

INVITATION TO BID

The **Freetown Fire Department** is seeking sealed bids for the furnishing of one (1) new, 2014 model year or newer Tanker/Tender apparatus. Invitation to Bid and contract documents, including specifications may be secured from the Board of Selectmen's Office 3 North Main Street Assonet, MA 02702 on **August 8, 2014** between the hours of 8:00 a.m. and 4:00 p.m. Monday thru Thursday and Friday 8:00 a.m. and 12:00 p.m., or on the town's website, <http://www.freetownma.gov>. Bids for the specified unit, equipment and accessories shall be submitted to **Town of Freetown, 3 North Main Street, Post Office Box 438, Assonet, MA 02702**. Bids will be accepted until **12:00 PM** on Wednesday, **August 27, 2014**. Following the deadline, bids will be publicly opened and read at the Freetown Town Hall, 3 North Main Street Assonet, MA 02702. Bids will then be evaluated and summarized. The winning bid will be awarded at the Board of Selectmen's Meeting on **September 8, 2014** at 6:10 p.m. at the Freetown Council on Aging, 227 Chace Road East Freetown, MA 02717.

Bids shall be submitted in sealed envelopes marked "Bid for Fire Department Tanker/Tender Apparatus". Date and time of bid opening **MUST** appear on the outside of the envelope as well as the name, address and telephone number of the bidder.

It shall be understood that the Town of Freetown / Fire Chief reserves the right to reject any or all bids, or accept the proposal which the chief deems to be in the best interest of the fire department. In the event of any doubt or difference of opinions as to the items to be furnished herein, the decision of the chief shall be final and binding on both parties. All agreements and changes shall be in writing.

The fire chief will accept the finished vehicle after determination has been made that the entire specifications have been satisfied, that the vehicle meets all requirements. Vehicle shall be 100% free from any deficiencies.

SCOPE AND GENERAL REQUIREMENTS

This specification describes a new tanker/tender apparatus designed to meet the specific requirements of the Freetown Fire Department. As this vehicle is being funded using monies from a FEMA Assistance to Firefighters Grant (AFG), it must be fully compliant to the latest edition of NFPA 1901: Standard for Automotive Fire Apparatus. Proposals that are not compliant to this standard will not be considered.

Comparison:

Each vendor must comply with the following:

A. In order that an equal uniform comparison may be made, all bids must be submitted in the exact sequential format herein outlined. Bidders standard proposal will not be considered in lieu of bid proposal format herein required. Purchaser will not attempt to decipher various manufacturer's proprietary specification documents, etc. in an effort to determine compliance with all items required herein, and to make a determination if all bidders are bidding equal components and quality.

B. If the bidder is not going to furnish the item exactly as described in these specifications, the bidder must include sufficient data of the intended substitution for a proper evaluation to be made. Terms such as "to the intent of" will not be acceptable and may deem the bid unacceptable for evaluation.

All exceptions taken must be referenced and explained thoroughly. Final inspection of the vehicle will be accomplished using these specifications to determine compliance. Therefore, paragraphs marked as complying will be inspected as such.

Proposals that are found to have deviations without listing them will be rejected.

Descriptive Materials:

Descriptive material such as plans, drawings, photographs, diagrams, illustrations, written descriptions, and manufacturer's literature which will enable the purchaser to determine the exact quality, design, and appearance of the vehicle proposed, shall accompany the bid. All equipment listed, or shown, in the manufacturer's literature, drawings, or photographs, and approved by the purchaser, shall be furnished.

Bidding Practices:

A. Bids must be held firm for a period of not less than 60 days to permit examination and comparison, unless otherwise specified.

B. No bid may be withdrawn, modified or otherwise changed once the bids have been opened. It will be assumed that each bidder has thoroughly and completely familiarized themselves with these specifications at time of bid. Modification to a bid, once submitted, will not be permitted. Simply stated, if any item, feature, option, etc. is not stated in writing in bidder's proposal, it will not be considered. Bidders are cautioned that verbal or written modifications to already opened bids are neither valid, or considered ethical, and the comparison and selection of bid award will proceed only from what is stated in bidder's written proposal.

C. These specifications have been prepared after due consideration by purchaser and alternate bids are not permitted.

D. Purchaser reserves the right to reject any or all bids, and to determine the proposal deemed in the best interest of purchaser from among those properly submitted, in accordance with these specifications and the laws of this State. Lowest bid, while a major consideration, will not govern the purchase wholly. Bid award will be made from considerations such as quality, conformance with these specifications, and completeness of proposal.

E. By signing this bid, the bidder has agreed to all terms and conditions of this specification, except as noted separately.

Delivery Inspection Procedure:

Upon arrival, vehicle purchased will be inspected, using this specification document, and each item and paragraph of the attached specification will be checked, line by line, for compliance. No deviations from this specification will be permitted unless vendor has submitted such proposed deviation in writing with this bid proposal and such exceptions are granted.

Construction Time and Penalty Clause:

Each bidder shall state a date specific for delivery of the vehicle. Per Federal Assistance to Firefighters Grant guidelines, a penalty clause is included in this specification. Non-delivery by the contract's

guaranteed date will require a penalty for non-performance that is no less than \$100 per day until the manufacturer can deliver the vehicle to the grantee. Delivery shall not be accepted until the vehicle has completed all testing and has been accepted by the department. As the department must adhere to a strict period of performance per grant stipulations, delivery date will be an important consideration for award.

Vehicle shall be guaranteed delivered by: _____

Terms of Payment:

The purchaser will pay for the completed vehicle upon delivery and acceptance. The amount on vehicle delivery shall be equal to federal share, while the final payment of grantee share paid on vehicle acceptance.

QUOTATION:

The overall quotation shall include a firm price for a vehicle meeting these specifications. The length of time that the price will be held shall be clearly stated in the quotation. The quotation shall include a specific delivery window based on the number of calendar days following the award of the contract. The model year of both the chassis and the conversion shall be clearly stated in the contract.

PRICE AND TAXES:

All prices quoted shall be for a definite fixed price unless otherwise specified. Prices shall exclude Federal, State, and other taxes to the extent that this purchaser is exempt. All pricing shall be F.O.B.

F.O.B.: _____

VEHICLE ACCEPTANCE AND DELIVERY

The vehicle shall be delivered to the manufacturer's local dealer, where it will be inspected and accepted by the department. If the manufacturer does not have a local dealer, the vehicle shall be delivered to the Freetown Fire Department by the manufacturer unless otherwise specified. All shipping shall be F.O.B. destination freight prepaid and allowed.

SPECIFICATION DESIGN:

The following specifications were created by the Town of Freetown / Fire Chief in order to best describe a need. However, it is not the intent of the town to exclude any manufacturer from submitting a bid on these specifications. In many places required equipment or features are identified by brand name. The bidder shall note that the use of brand names within this document is meant to describe a required level of quality or performance. The bidder may substitute equipment or features provided that the substitutions meet the intent of the specification. The bidder shall note, however, that substitute components shall be included in the list of exceptions. Exceptions should be listed per the following bid completion requirements.

TYPE OF BIDS TO BE SUBMITTED:

The Town of Freetown is seeking quality equipment. Bidders are asked to bid only the product of the highest level of quality represented by that bidder.

Is this requirement understood and met? Yes_____ No_____ Bidder's initials: _____

INFORMATION TO BE SUBMITTED WITH PROPOSAL:

The information requested within this bid must be furnished in full. Any bidder not completing this proposal or not furnishing any required information will not be considered. If a bidder will not furnish a material or fabrication process exactly as described in this specification, then that difference must be designated in the list of exceptions. If a substitution is being proposed, then the bidder must note the section to which the alternative is being proposed and provide technical data supporting the fact that the substitute is equal to or better than the item as specified. If this data is not submitted with the bid, then the bid shall be rejected as being non-compliant. Bidder added narrative describing a substitution as being a clarification, exceeding, being equal to, etc. will not be accepted. Statements such as these, with or without the technical data described in this section, will cause the bid to be rejected as being non-compliant. This purchaser reserves the right to require samples of any deviating material to be provided for evaluation.

TOWN OF FREETOWN

Certificate of Non-Collusion

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

Representative's Signature

Name of Business

TOWN OF FREETOWN

TAX COMPLIANCE STATEMENT

I certify under the penalties of perjury that I, to my best knowledge and belief, have filed all state tax returns and paid all state taxes required under law.

*Signature of Individual of Corporate Name
(Mandatory)

Corporate Officer
(Mandatory, if applicable)

**Social Security Number (Voluntary) or
Federal Identification Number

*Approval of a contract or other agreement will not be granted unless this certification clause is signed by the applicant.

**Your social security number will be furnished to the Massachusetts Department of Revenue to determine whether you have met tax filing or tax payment obligations. Providers who fail to correct their non-filing or delinquency will not have a contract or other agreement issues, renewed, or extended. This request is made under the authority of Massachusetts General Laws c.62C s 49A.

SPECIFICATIONS FOR A NEW TANKER/TENDER APPARATUS

MINIMUM REQUIRED STANDARDS:

COMPLIANCE TO NFPA 1901:

As this vehicle is being purchased with FEMA Assistance to Firefighters Grant (AFG) funds, it must be compliant to the latest edition of NFPA 1901: Standard for Automotive Fire Apparatus. If not otherwise written in this specification, the manufacturer shall default to the NFPA 1901 requirements.

Does the bidder conform to the above-written section? Yes_____ No_____

ROAD TEST CERTIFICATION

A road test shall be conducted with the finished apparatus fully loaded. During this time, the apparatus shall not show loss of power and/or overheating. The transmission driveshaft or shafts and rear axle shall run free from abnormal vibration or noise throughout the operating range of the apparatus. The apparatus, when loaded, shall have not less than 25% or more than 45% of the weight on the front axle and not less than 55% or more than 75% on the rear axle.

A). The apparatus must be capable of accelerating to 35 mph from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed RPM of the engine.

B). The apparatus must be capable of accelerating from a steady speed of 15 mph to a true speed of 35 mph within 30 seconds. This shall be accomplished without moving the gear selector.

C). The fully loaded apparatus shall be capable of obtaining a speed of 50 to 55 mph on a level concrete highway.

D). The manufacturer shall furnish copies of the engine installation approvals signed by the appropriate engine company upon delivery of the chassis to the Fire Department.

E). The manufacturer shall furnish copies of the transmission approval signed by the transmission manufacturer upon delivery of the chassis to the Fire Department.

F). The manufacturer shall furnish copies of the front and rear axle approvals upon delivery of the apparatus to the Fire Department.

ROAD TEST FAILURE

In the event the apparatus fails to meet the test requirements of these specifications on the first trials, second trials may be made at the option of the manufacturer within thirty (30) days 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 the manufacturer of such changes, shall be cause for rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the purchaser, or its use by the purchaser during the above-specified period with permission of the manufacturer, shall not constitute acceptance.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

CHASSIS KEYS

The cab and chassis shall include a total of two (2) keys.

Above section bid exactly as written.	_____
Section not provided.	_____
Bidder is offering an alternative to this section.	_____

WARRANTY

The following warranties shall be provided:

ONE YEAR APPARATUS WARRANTY

The complete apparatus detailed herein shall be warranted against defects in materials and workmanship for a MINIMUM period of twelve (12) months, effective upon pick up or delivery of the completed apparatus to the purchaser, as detailed in the respective warranty documents. Any unauthorized alterations or modifications to the apparatus shall void this warranty. Other warranties, as provided by individual component manufacturers may extend beyond this warranty.

STRUCTURAL WARRANTY, TEN YEAR

A structural warranty shall be provided by the apparatus manufacturer for products of its manufacture to be free from defects in material and workmanship, under normal use and service, for a MINIMUM period of ten (10) years, effective upon final payment in full by the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. Any unauthorized alterations or modifications to the apparatus shall void this warranty.

PLUMBING WARRANTY, TEN YEAR

A Stainless Steel Plumbing/Piping warranty shall be provided by the apparatus manufacturer for products of its manufacture to be free from defects in material and workmanship, under normal use and service, for a MINIMUM period of ten (10) years effective upon final payment in full by the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. Any unauthorized alterations or modifications to the plumbing shall void this warranty.

PAINT WARRANTY, FIVE YEAR

The finish paint as used on the proposed apparatus shall be warranted against defects in materials and workmanship for a MINIMUM prorated period of five (5) years, effective upon final payment in full by the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. Any unauthorized alterations or modifications to the apparatus shall void this warranty.

TANK WARRANTY, LIFETIME

For normal fire department applications, the tank shall have a limited Lifetime warranty that provides warranty service for the life of the fire apparatus in which the tank is installed. Warranties are transferable if the apparatus ownership changes by requesting the transfer from UPF. In applications where the tank will be subject to severe conditions, the tank may have a warranty unique to the application that is clearly defined for each such application.

APPARATUS ELECTRICAL WARRANTY, TWO YEAR

The apparatus electrical system as detailed herein shall have an electrical warranty against defects in materials and workmanship for a MINIMUM period of two (2) years, effective upon final payment in full by

the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. Any unauthorized alterations or modifications to the electrical system shall void this warranty.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

CENTER OF GRAVITY

The apparatus, prior to acceptance, will be required to meet the vehicle stability of the applicable NFPA Automotive Fire Apparatus Standard. A calculated center of gravity shall be provided. The calculated or measured center of gravity (CG) shall be no higher than 80-percent of the rear axle track width.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

VEHICLE TOP SPEED

The rear axle shall be geared for a top speed of 60 mph at engine governed RPM.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

NFPA TOP SPEED STATEMENT

NFPA-1901, 2009 Edition - 4.15.2.: The maximum top speed of fire apparatus with a GVWR over 26,000 lb (11,800 kg) shall not exceed either 68 MPH (105km/hr) or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.

NFPA-1901, 2009 Edition - 4.15.3: If the combined water tank and foam agent tank capacities on the fire apparatus exceed 1250 gal (4732 L), or the GVWR of the vehicle is over 50,000 lb (22,680 kg), the maximum top speed of the apparatus shall not exceed either 60 MPH (105 km/hr) or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

ANGLE OF APPROACH

The angle of approach for the apparatus shall not be less than eight (8) degrees as specified by the current edition of NFPA 1901.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

ANGLE OF DEPARTURE

The angle of departure for the apparatus shall not be less than eight (8) degrees as specified by the current edition of NFPA 1901.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

CHASSIS SPECIFICATION

CHASSIS PROVIDER

The chassis, as detailed in these specifications, shall be ordered and supplied by the apparatus manufacturer.

MAKE: Kenworth

MODEL: T370 Series

CAB: Conventional

YEAR: 2014 or newer

APPLICATION: Fire Truck Service

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

AXLE CONFIGURATION

The chassis shall feature a 4 X 2 axle configuration consisting of a single rear drive axle with a single front steer axle.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

GROSS AXLE WEIGHT RATINGS FRONT

The front gross axle weight rating (GAWR) of the chassis shall be 14,600 pounds. This front gross axle weight rating shall be adequate to carry the weight of the completed apparatus including all equipment and personnel.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

GROSS AXLE WEIGHT RATINGS REAR

The rear gross axle weight rating (GAWR) of the chassis shall be 26,000 pounds. This rear gross axle weight rating shall be adequate to carry the weight of the completed apparatus including all equipment and personnel.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

CAB

Two Door Conventional.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

CAB EQUIPMENT

- Curved glass conventional
- Single-piece Windshield
- Sloped aerodynamic hood
- Cab heater with integral defrosters & A/C (45,000 BTU heater)
- Adj. telescoping tilt steering column
- Dash mounted air cleaner restriction gauge
- Instrument package (speedo., tach., temp., oil press., voltmeter)
- Warning light for parking brake
- Self-canceling turn signals
- LH & RH NFPA compliant grab handles
- Daylite doors
- Four position ignition switch, keyless. (NFPA)
- Electric windshield wipers, 2-speed plus intermittent
- Electric windshield washers
- Electric-powered LH & RH door window lifts. Switch located on door
- Solid rear wall. Deletes rear cab window
- Exterior aerodynamic sun visor w/ integral marker lights

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

MIRRORS

Dual Kenworth aerodynamic heated motorized 7 in. x 13 in. mirror w/ chrome shell. LH/RH convex mirrors 5 in. x 7 in. heated. Mirror brackets set for 8 1/2 ft. load width. Switch located on door pad.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

CAB INTERIOR

Glove box door with locking latch
Dash mounted cruise control
Turn signal switch with column mounted dimmer
Slate gray interior primary color
Floor mats
Inside sun visor, LH/RH
Door courtesy lights
Under-dash center console w/cup holder, ashtray, and lighter
NFPA compliance kit (seat sensors, seatbelt switches, VDR harness)

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

DRIVER’S SEAT

The driver’s seat shall be a Kenworth air cushion plus High Back vinyl with dual arm rests. It shall have a RED NFPA compliant seat belt and a pressure sensor for the seat belt monitor.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

PASSENGER’S SEAT

The passenger seat shall be High Back vinyl with dual armrests. It shall have a RED NFPA compliant seat belt and a pressure sensor for the seat belt monitor. An accessible tool box shall be located bellow the seat.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

FRAME & EQUIPMENT

Frame rails 10-5/8 x 3-1/2 x 5/16in steel
120,000 psi yield
Heat treated

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

FRONT MUD FLAPS

Two (2) Front mudflaps shall be supplied with the chassis from Kenworth.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

FRONT TOW HOOKS

Two (2) removable front tow hooks mounted directly to the frame shall be supplied with the chassis from Kenworth.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

FUEL TANK & EQUIPMENT

The chassis shall have a 56 US gallon fuel tank. It shall be constructed of polished aluminum. It shall be attached to the chassis using polished stainless steel mounting straps.

Location: LH under cab.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

DEF TANK

The chassis shall have a small, round DEF (Diesel Exhaust Fluid) tank. The tank shall have 11 gallons of useable volume. The tank will be located just rearward of the Fuel Tank. Required capacity is calculated by fuel capacity of the vehicle and is a minimum of 6% by volume. This capacity will accommodate two (2) diesel re-fillings for every DEF re-filling.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

BUMPER

Aerodynamic Chrome

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

DIESEL ENGINE

The chassis shall be powered by a Paccar (Cummins) diesel engine as described below:

MODEL: PX-9 (ISL)
NUMBER OF CYLINDERS: Six
BORE AND STROKE: 4.49 in (114 mm) x 5.71 in (145mm)
DISPLACEMENT: 8.9L
RATED BHP: 330 hp @ 2000 RPM
TORQUE: 1000 lb-ft @ 1400 RPM
GOVERNED RPM: 2200

Emergency Vehicle includes turbo exhaust brake, no code is used. Diagnostic Plug for data link, Oil Cooler, Aluminum Flywheel Housing included.
Air compressor: Cummins 18.7 CFM

Air Cleaner: Dry-type firewall mounted w/filter restriction indicator.

Air inlet ember separator NFPA compliant for fire applications.

Cooling module: 1000 square inches

Fleetguard filter/Water separator FS1003 w/WIF (water in fuel) sensor.

Block heater: 1750 watt, 120V for PX-9 engines.

Bendix ABS w/ATC and Electronic Stability Control

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

EXHAUST BRAKE

Paccar turbo exhaust brake with switch on dash.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

EXHAUST

RH under cab SCR with single horizontal tailpipe.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

ALTERNATOR

270 amp Leece-Neville alternator w/cab cut off switch & warning light.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

BATTERIES

Three (3) PACCAR GP31 threaded post (700) 2100 CCA dual purpose.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

TRANSMISSION

Allison 3000EVS 5-speed with PTO drive gear
Heat exchanger & oil level sensor
Emergency vehicle series
Transynd fluid standard
Driveline-2 standard duty, 1 center bearing

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

FRONT AXLE & EQUIPMENT

Front axle 14,600 lbs. Dana Spicer E-1462I
14,600 lb. air brake package includes: 16-1/2 x5 brakes, cast drums, aluminum
10-bolt hub pilot LMS hubs, hubcaps, oil seals & automatic slack adjusters.
14.6K taperleaf front springs with shocks
Single power steering gear: 14.6K TRW TAS85

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

REAR AXLE & EQUIPMENT

Dana Spicer S26-190 Single Rear Axle rated at 26,000 lbs.
26000 lb. air brake package
Spring brake 3036
Bendix 4S/4M anti-lock brake system
Rear suspension-Reyco 79KB, 26K with multileaf
Rear axle stabilizer bar for Reyco 79KB
Single Axle Tires & Wheels

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

FRONT TIRES

Bridgestone R250F 12R22.5 16PR in. diameter, all position. 19.8 in. SLR. The maximum tire speed rating is 75 MPH.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

REAR TIRES

Bridgestone M711 12R22.5 16PR 43.3 in. diameter, drive. 20.2 in. SLR The maximum tire speed rating is 75 MPH.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

FRONT WHEELS

Kenworth 7-spoke 88768 22.5x8.25 aluminum with Lvl One [TM] finish, hub pilot mount. 7300lb.maximum rating. Level 1 finish.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

REAR WHEELS

Kenworth 7-spoke 88768 22.5x8.25 aluminum with Lvl One [TM] finish, hub pilot mount. 7300lb. maximum rating. Level 1 finish.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

AIR HORNS

Two (2) Grover air horns shall be at the hood mounted, one (1) each side, as far forward as possible.

Both air horns shall be controlled by a push button the passenger's side dash and by the horn on the steering wheel.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

ELECTRIC TRAFFIC HORN AND AIR HORN SELECTOR SWITCH

One (1) selector switch shall be provided on the cab's dash that will allow the chassis steering wheel horn button to activate either the electric traffic horn or air horn system.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

CHASSIS PAINT COLOR

The cab shall be painted a single color.

Color: PPG RED to match current department apparatus

Paint Number: 71528

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

CHASSIS MODIFICATIONS

The following modifications and installations shall be performed on the chassis upon delivery to the apparatus manufacturer:

SEAT BELT INDICATORS

An Akron Brass or Weldon style 6204 "Occupant Restraint Indicator" (ORI) shall be provided so as to visually display NFPA 1901 required status of up to 12 seats in real-time with an audible safety alarm.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

VEHICLE DATA RECORDER

An Akron Brass Style 6444 "Vehicle Data Recorder" (VDR) shall be provided so as to record all NFPA 1901 required information for up to 100 hours of live vehicle operation. The VDR will also record service brake status in addition to NFPA required items. A USB connection will be used to retrieve the recorded data. The VDR shall be capable of independent operation on hard-wired or J1939 systems as well as interfacing with a Weldon V-MUX multiplexed electrical system.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

TIRE PRESSURE MONITORING

The apparatus shall be provided with tire pressure indicating valve stem caps. The indicators shall be installed on each tire and be a heavy duty design manufactured specifically for trucks. When tire is properly inflated, the indicator inside the cap shall be green, and when the tire is underinflated by 10%, the indicator inside the cap shall be red.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

WHEEL COVERS

The front and rear axle shall have stainless steel nut covers and baby moons.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

REAR TOW PLATES

Two (2) rear tow plates with 1-1/2" I.D. holes, constructed with 1" steel plate shall be provided on the apparatus. These shall be located below the apparatus body and fastened to the rear chassis frame rails.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

REAR MUD FLAPS

There shall be a pair of mud flaps installed behind the rear tires.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

MASTER BATTERY SWITCH (Chassis Provided)

A master battery switch shall be provided as detailed in the chassis specifications.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

BACK-UP ALARM

One (1) 97 DB back-up alarm shall be provided and installed at the rear of the unit. It shall be wired to activate when the transmission is placed in reverse.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

REVERSE CAMERA

A Federal Signal CAMSET56-NTSC-2 reverse camera system shall be provided.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

CAB CONSOLE

An electrical console shall be constructed of black thermoplastic coated smooth aluminum material and mounted in the cab of the truck chassis. Console shall be designed and installed between the driver and passenger seats. The top face of the console shall be designed as the switch panel for all emergency light switches. All emergency light switches shall be lighted. Switches shall be internally lit when the switch circuit is in the on position. An identification label is to be provided and installed adjacent to each switch with backlighting provided behind the label.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

CAB SAFETY SIGNS

The following safety signs shall be provided in the cab:

- A label displaying the maximum number of personnel the vehicle is designed to carry shall be visible to the driver.
- “Occupants shall be seated and belted when apparatus is in motion” signs shall be visible from each seat.
- “Do Not Move Apparatus When Light Is On” sign adjacent to the warning light indicating a hazard if the apparatus is moved (as described in subsequent section).
- A label displaying the height, length, and GVWR of the vehicle shall be visible to driver.
- This label shall indicate that the Purchaser shall revise the dimension if vehicle height changes while vehicle is in service.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

CHASSIS DATA LABELS

The following information shall be on labels affixed to the vehicle:

Fluid Data:

- Engine oil
- Engine coolant
- Chassis transmission fluid
- Pump transmission lubrication fluid
- Pump primer fluid (if applicable)
- Drive axle(s) lubrication fluid
- Air conditioning refrigerant
- Air conditioning lubrication
- Power steering fluid
- Cab tilt mechanism fluid (if applicable)
- Transfer case fluid
- Equipment rack fluid (if applicable)
- Air compressor system lubricant
- Generator system lubricant (if applicable)

Chassis Data:

- Chassis Manufacturer
- Production Number
- Year Built
- Month Manufactured
- Vehicle Identification Number

Manufacturers weight certification:

- Gross Vehicle (or Combination) Weight Rating (GVWR or GCWR)
- Gross Axle Weight Rating, Front
- Gross Axle Weight Rating, Rear

Location shall be in the driver's compartment of the chassis cab.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

"NO RIDE" LABEL

A label shall be located on the vehicle at the rear step areas, and at any cross walkways, if they exist. The label(s) shall warn personnel that riding in or on these areas while the vehicle is in motion is prohibited.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

HALE APS POWER TAKE-OFF (PTO) PUMP

PUMP ASSEMBLY

1. The pump shall be of a size and design to mount on the chassis rails of commercial and custom truck chassis, and have the capacity of 500 gallons per minute (U.S. GPM), NFPA-1901 rated performance.
2. The entire pump shall be assembled and tested at the pump manufacturer's factory.
3. The pump shall be driven by the truck transmission mounted PTO. The engine shall provide sufficient horsepower and RPM to enable pump to meet and exceed its rated performance within the torque rating of the PTO, truck transmission and drive line components.
4. The entire pump shall be hydrostatically tested to a pressure of 600 PSI. The pump shall be fully tested at the pump manufacturer's factory to the performance spots as outlined by the latest NFPA Pamphlet No. 1901. Pump shall be free from objectionable pulsation and vibration.
5. The pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI (2069 bar). All metal moving parts in contact with water shall be of high quality bronze or stainless steel. Pumps utilizing castings made of lower tensile strength cast iron are NOT acceptable.
6. Pump body shall be vertically split, on a single plane for easy removal of entire impeller assembly including clearance rings.
7. Pump shaft to be rigidly supported by two bearings for minimum deflection. The bearings shall be heavy-duty, deep groove ball bearings in the gearbox and they shall be splash lubricated.
8. 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 eye 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.
9. Impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body.
10. The pump shaft shall be heat-treated, electric furnace, corrosion resistant stainless steel. The pump shaft must be sealed with double-lip oil seal to keep road dirt and water out of gearbox.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

GEARBOX

- 1. The gearbox shall be manufactured and tested at the pump manufacturer’s factory.
- 2. Pump gearbox shall be of sufficient size to withstand the torque of the engine in pump operating conditions. The drive unit shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature.
- 3. The gearbox drive shafts shall be of heat-treated chrome nickel steel shall withstand the full torque of the engine and pump operating conditions.
- 4. All gears both drive and pump, shall be of highest quality electric furnace chrome nickel steel. Bores shall be ground to size and teeth integrated and hardened, to give an extremely accurate gear for long life, smooth, quiet running, and higher load carrying capability. An accurately cut helical design shall be provided.
- 5. The pump ratio shall be selected by the apparatus manufacturer to give maximum performance with the engine and transmission selected.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

FIVE YEAR FIRE PUMP WARRANTY

A five (5) year warranty for the Hale fire pump shall be provided.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

500 GPM FIRE PUMP SPECIFICATIONS

The centrifugal type fire pump shall be a Hale model APS midship mounted with a rated capacity of 500 GPM. The pump shall meet NFPA 1901 requirements. The pump shall be certified to meet the following deliveries:

- 500 gpm (1892 L/M) @ 150 psi (10.3 bar)
- 350 gpm (1324 L/M) @ 200 psi (13.8 bar)
- 250 gpm (946 L/M) @ 250 psi (17.2 bar)

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

ALTITUDE REQUIREMENTS

The apparatus shall be designed to meet the specified rating at 0 to 2000' altitude.

Above section bid exactly as written. _____
Section not provided. _____

Bidder is offering an alternative to this section. _____

5" LEFT SIDE INLET

One (1) 5" suction steamer inlet with male NH threads shall be provided, on the left side pump panel. The inlet shall have a removable screen.

One (1) 5" chrome plated cap shall be provided on the intake. The threads shall be NST and the cap shall be equipped long handles.

Above section bid exactly as written. _____

Section not provided. _____

Bidder is offering an alternative to this section. _____

PUMP SHIFT - PTO - STATIONARY PUMPING

One (1) PTO shall be installed to drive the fire pump. An electrically activated switch shall be installed in the cab to engage the fire pump. Safety interlocks shall be provided to ensure the pump drive system components are properly engaged to safely operate the pump. Pump shifting instructions shall be provided at the pump shifting location. The following indicator lights shall be provided and installed:

A green indicator light labeled "**PUMP ENGAGED**" shall be located in cab and at the pump operator's location and indicate that the pump shift has successfully been completed.

A green indicator light labeled "**OK TO PUMP**" shall be located in the cab at the driver's position, and indicate that the chassis transmission is in neutral, and parking brake is engaged.

Above section bid exactly as written. _____

Section not provided. _____

Bidder is offering an alternative to this section. _____

PIPING AND MANIFOLDS

All the plumbing and/or piping in the pump module shall be stainless steel or flexible rubber piping for long life. Plumbing made of lower tensile strength steel is NOT acceptable.

Above section bid exactly as written. _____

Section not provided. _____

Bidder is offering an alternative to this section. _____

DISCHARGE VALVES

The valves including the ball shall be constructed of stainless steel. The valves shall be bi-directional with full flow capability. The valves shall be of fixed pivot ball design with a flow pressure rating to meet NFPA-1901 standards. The valve shall have a single piece seat and seal design and shall have an operating pressure of 400 psi. All 3.0" (7.62cm) discharge valves shall be supplied with a true slow close mechanism per NFPA specifications. The valve shall be warranted for a period of ten (10) years on all stainless steel components, against defects in design and manufacturing processes.

Above section bid exactly as written. _____

Section not provided. _____

Bidder is offering an alternative to this section. _____

HOSE THREADS- NST

All hose threads shall be National Standard Thread (NST) on all base threads on the apparatus intake and discharges, unless otherwise specified.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

VENTED LUG CAPS AND PLUGS

All intake and discharge plugs and caps and plugs shall be vented lug type designed to relieve trapped pressure and help reduce possible operator injuries.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

RELIEF VALVE

There shall be one (1) suction side stainless steel relief pump valve provided on the pump system.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

AIR PRIMER

The fire pump priming system shall consist of one (1) compressed air powered, high efficiency, multi-stage, venturi based Trident AirPrime™ System. All wetted metallic parts of the priming system are to be of brass and stainless steel construction. A single panel mounted control will activate the priming pump and open the priming valve to the pump. The priming system shall have a five year warranty.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

U.L. TEST POINTS

Two (2) U.L. test plugs shall be mounted on the pump panel for testing of the vacuum and pressures.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

MASTER PUMP DRAIN

A rotary type, 12 port master drain valve shall be provided and controlled at the lower portion of the side pump panel. The valve shall be located lower than the main body and connected in such a manner as to allow complete water drainage of the pump body and all required accessories. Water shall be drained below the apparatus body and away from the pump operator.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

PRESSURE GOVERNOR and ENGINE MONITORING DISPLAY

A Fire Research PumpBoss series PBA401 pressure governor and monitoring display kit shall be installed. The kit shall include a control module, intake pressure sensor, discharge pressure sensor, and cables. The control module case shall be waterproof and have dimensions not to exceed 6 3/4" high by 4 5/8" wide by 1 1/2" deep. The control knob shall be 2" in diameter with no mechanical stops, have a serrated grip, and a red idle push button in the center. It shall not extend more than 1 3/4" from the front of the control module. Inputs for monitored information shall be from a J1939 databus or independent sensors. Outputs for engine control shall be on the J1939 databus or engine specific wiring. Inputs to the control module from the pump discharge and intake pressure sensors shall be electrical.

The following continuous displays shall be provided:

Engine RPM; shown with four daylight bright LED digits more than 1/2" high

Check engine and stop engine warning LEDs

Oil pressure; shown on a dual color (green/red) LED bar graph display

Engine coolant temperature; shown on a dual color (green/red) LED bar graph display

Transmission Temperature: shown on a dual color (green/red) LED bar graph display

Battery voltage; shown on a dual color (green/red) LED bar graph display

Pressure and RPM operating mode LEDs

Pressure / RPM setting; shown on a dot matrix message display

Throttle ready LED.

The dot-matrix message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator. All LED intensity shall be automatically adjusted for day and night time operation.

The program shall store the accumulated operating hours for the pump and engine to be displayed with the push of a button. It shall monitor inputs and support audible and visual warning alarms for the following conditions:

High Battery Voltage

Low Battery Voltage (Engine Off)

Low Battery Voltage (Engine Running)

High Transmission Temperature

Low Engine Oil Pressure

High Engine Coolant Temperature

Out of Water (visual alarm only)

No Engine Response (visual alarm only).

The program features shall be accessed via push buttons located on the front of the control module. There shall be a USB port located at the rear of the control module to upload future firmware enhancements.

The governor shall operate in two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between modes. A throttle ready LED shall light when the interlock signal is recognized. The governor shall start in pressure mode and set the engine RPM to idle. In pressure mode the governor shall automatically regulate the discharge pressure at the level set by the operator. In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi. Other safety features shall include recognition of no water conditions with an automatic programmed response and a push button to return the engine to idle.

Above section bid exactly as written.	_____
Section not provided.	_____
Bidder is offering an alternative to this section.	_____

LEFT SIDE AUXILLARY SUCTION

One (1) 2-1/2" (6.35cm) intake with a stainless steel valve shall be located on the left side panel. The valve shall be a quarter turn ball type and fixed pivot design to allow easy operation at all pump pressures. The valve shall come equipped with an inlet strainer, and a 2-1/2" (6.35 cm) FNH chrome inlet swivel. The valve shall be controlled at the left side panel with a lift handle.

There shall be a 3/4" quarter turn drain valve included. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

One (1) 2-1/2" NST rocker lug chrome plated brass plug with chain shall be provided.

Above section bid exactly as written.	_____
Section not provided.	_____
Bidder is offering an alternative to this section.	_____

TANK TO PUMP

One (1) 3" (7.62cm) stainless steel valve shall be installed between the water tank and the pump. The valve shall be a quarter turn ball type.

The quarter turn valve shall be manually operated with a locking push/pull "T" handle located on the left hand side pump operator's panel.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

TANK FILL

One (1) 2"(5.08cm) discharge with valve shall be plumbed to the tank. The valve shall be a quarter turn ball type and fixed pivot design to allow easy operation at all pump pressures. The 2"(5.08cm) valve outlet terminates with 2"(5.08cm) grooved connection.

The quarter turn valves shall be manually operated with a push/pull locking "T" handle located on the left hand side pump operator's panel.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

LEFT SIDE FRONT DISCHARGE

One (1) 2-½" (6.35cm) discharge with valve shall be located on the left side panel. The valve shall be a quarter turn ball type and fixed pivot design to allow easy operation at all pump pressures. The 2-½" (6.35cm) outlet shall be equipped with an integral, stainless steel, 30-degree elbow terminating with 2-½" (6.35cm) MNST threads. The valve shall be controlled at pump operator's panel. The discharge must be capable of flowing 700 GPM or greater. One (1) 2-1/2" liquid filled gauge shall be supplied for the discharge. The gauge shall be located on the pump operator's panel near the respective discharge control.

The valve shall be controlled at the left side panel with a lift handle. There shall be a 3/4" quarter turn drain valve included. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included. One (1) 2-1/2" chrome plated cap shall be provided with the discharge. The cap shall have NST threads with rocker lug couplings and a chain for securement.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

LEFT SIDE REAR DISCHARGE

One (1) 2-1/2" (6.35cm) discharge with valve shall be located on the left side panel. The valve shall be a quarter turn ball type and fixed pivot design to allow easy operation at all pump pressures. The 2-1/2" (6.35cm) outlet shall be equipped with an integral, stainless steel, 30-degree elbow terminating with 2-1/2" (6.35cm) MNST threads. One (1) 2-1/2" liquid filled gauge shall be supplied for the discharge. The gauge shall be located on the pump operator's panel near the respective discharge control.

The valve shall be controlled at the left side panel with a lift handle.

There shall be a 3/4" quarter turn drain valve included. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

One (1) 2-1/2" chrome plated cap shall be provided with the discharge. The cap shall have NST threads with rocker lug couplings and a chain for securement.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

CROSSLAYS

Two (2) crosslays shall be located in the rear bumper as detailed later in this specification. The crosslays shall be configured to carry a minimum of 200 feet of 1 3/4" attack hose in a single stack configuration. Each crosslay shall have one (1) 2" (5.08cm) stainless steel valve. The valve shall be a quarter turn ball type and fixed pivot design to allow easy operation at all pump pressures. The crosslay discharges will terminate with a 1 1/2" MNST chiksan swivel adapter. The crosslay hose bed floor will be slotted to allow the swivel to extend up through the floor, allowing the pre-connected hose to be pulled off either side of the apparatus without kinking the hose at the coupling connection.

Two (2) 2-1/2" liquid filled gauges shall be supplied, one (1) for each discharge. The gauges shall be located on the pump operator's panel near the respective discharge control. The quarter turn valves shall be manually operated with a push/pull locking "T" handle located on the left hand side pump operator's panel.

There shall be a 3/4" quarter turn drain valve included for each valve. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

CROSSLAY COVER

A 3/16" polished aluminum tread plate cross lay cover will be provided with a full length stainless steel hinge at the rear of the cover. Vinyl flaps will be provided at each side of the transverse crosslay compartment secured to the treadplate crosslay cover by quarter turn fasteners, and equipped with a strap to each end. The crosslay end flaps will be red in color.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

2-1/2" INDIVIDUAL PRESSURE GAUGES

Class 1 (or equivalent), 2-1/2" liquid filled gauges, one (1) for each discharge, unless specified otherwise. Gauges shall read from -30" Hg. to 400 psi and shall be accurate to within 1%. Each gauge shall have a white face and black markings. The gauges shall be located on the pump operator's panel near the respective discharge control.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

3-1/2" MASTER PRESSURE GAUGE

One (1) Class 1 (or equivalent), 3-1/2" liquid filled master pressure gauge with stainless steel bezel shall be provided, reading from 0 Hg. to 400 psi. It shall be accurate to within 1%. Each gauge shall have a white face and black markings. The gauge shall be located on the pump operator's panel.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

3-1/2" MASTER INTAKE GAUGE

One (1) Class 1 (or equivalent), 3-1/2" liquid filled master intake gauge(s) with stainless steel bezel shall be provided, reading from -30" Hg. to 400 psi. It shall be accurate to within 1%. Each gauge shall have a white face and black markings. The gauge shall be located on the pump operator's panel.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

INTELLI-TANK WATER LEVEL GAUGE

The apparatus shall be equipped with a Class 1 "Intelli-Tank" tank level gauge for indicating the water level of the tank. The tank level gauge shall indicate the liquid level on an easy to read LED display and show increments of 1/8 of a tank.

Each tank level gauge system shall include:

One (1) pressure transducer shall be mounted on the outside of the tank.

One (1) set of weather resistant connectors, connecting to the digital display, to the pressure transducer and to the apparatus power.

A super bright LED 4-light display with a visual indication at nine accurate levels.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

CLASS1 MINI WATER LEVEL GAUGE

The apparatus shall be equipped with a Class 1 remote mini tank level gauge for indicating the water level of the tank on the console. The tank level gauge shall indicate the liquid level on an easy 4 light display and show increments of 1/4 of a tank.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

PUMP MODULE BODY

The side mount pump module shall be mounted under the apparatus water tank. The pump module body shall be a self-supported structure mounted independently from the body and chassis cab. The pump module design must allow normal frame deflection through isolation mounts without imposing stress on the pump module structure or side running boards.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

PUMP MODULE PANELS

The pump module panels shall be constructed of 14 gauge stainless steel.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

PUMP PANEL LIGHT SHIELD

One (1) polished, extruded aluminum light shield assembly shall be provided above the pump panel areas. There shall be four (4) weather resistant lights installed within the shield.

A switch, located on the pump operator's panel shall be provided to activate the lights.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

WATER TANK AND RELATED COMPONENTS

2000 GALLON POLY TANK

The tank shall have a capacity of 2,000 U.S. gallons and shall be constructed of PT3™ polypropylene material. This material shall be a non-corrosive stress relieved thermoplastic and UV stabilized for maximum protection. Tank shell thickness may vary depending on the application and may range from ½ to 1" as required. Internal baffles are generally 3/8" in thickness.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

ISO CERTIFICATION

The tank must be designed and fabricated by a tank manufacturer that is ISO 9001:2008 certified in each of its locations. The ISO certification must be to the current standard in effect at the time of the design and fabrication of the tank.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

CONSTRUCTION

The booster tank shall be of a specific configuration and is so designed to be completely independent of the body and compartments. Joints and seams shall be fused using nitrogen gas as required and tested for maximum strength and integrity. The tank construction shall include PolyProSeal™ technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method will provide a liquid barrier offering leak protection in the event of a weld compromise. The top of the booster tank is fitted with removable lifting assembly designed to facilitate tank removal. The transverse and longitudinal swash partitions shall be manufactured of a minimum of 3/8" PT3™ polypropylene. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow. All swash partitions interlock with one another and are completely fused to each other as well as to the walls of the tank. All partitions and spacing shall comply with NFPA 1901. The walls shall be welded to the floor of the tank providing maximum strength as part of the tank's unique Full Floor Design™. Tolerances in design allow for a maximum variation of 1/8" on all dimensions.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

WATER FILL TOWER AND COVER

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of 1/2" PT3™ polypropylene and shall be a minimum dimension of 10" x 10" outer perimeter. The fill tower shall be blue in color indicating that it is a water-only fill tower. The tower shall have a 1/4" thick removable polypropylene screen and a PT3™ polypropylene hinged cover. The capacity of the tank shall be engraved on the top of the fill tower lid. Inside the fill tower there shall be a combination vent/overflow pipe. The vent overflow shall be a minimum of schedule 40 polypropylene pipe with a minimum I.D. of 4" that is designed to run through the tank, and shall be piped to discharge water behind the rear wheels as required in NFPA 1901 so as to not interfere with rear tire traction.

The tank cover shall be constructed of 1/2" thick PT3™ polypropylene and UV stabilized, to incorporate a multi-piece locking design, which allows for individual removal and inspection if necessary. The tank cover(s) shall be flush or recessed 3/8" from the top of the tank and shall be fused to the tank walls and longitudinal partitions for maximum integrity. Each one of the covers shall have hold downs consisting of 2" minimum polypropylene dowels spaced a maximum of 40" apart. These dowels shall extend through the covers and will assist in keeping the covers rigid under fast filling conditions. A minimum of two (2) lifting dowels shall accommodate the necessary lifting hardware.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

SUMP

There shall be one (1) sump standard per tank. The sump shall be constructed of a minimum of 1/2" PT3™ polypropylene and be located in the left front quarter of the tank, unless specified otherwise. On all tanks that require a front suction, a 3" schedule 40 polypropylene pipe shall be installed that will incorporate a dip tube from the front of the tank to the sump location. The sump shall have a minimum 3" N.P.T. threaded outlet on the bottom for a drain plug per NFPA. This shall be used as a combination clean-out and drain. All tanks shall have an anti-swirl plate located approximately 3" above the inside floor.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

OUTLETS

There will be two (2) standard tank outlets: one (1) for the tank-to-pump suction line, which shall be sized to provide adequate water flow to the pump; and, one (1) for tank fill line, which shall be sized according to the NFPA minimum size chart for booster tanks. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 1000 gpm. The tank shall have the appropriate amount of 10" Newton Dump Valve flanges as specified later in this document. Appropriate tank openings will be provided for tank suction and tank fills (see pump specifications). All auxiliary outlets and inlets must meet all NFPA guidelines in effect at the time of manufacture.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

MOUNTING BLOCKS

There will be four (4) mounting blocks, two (2) on each side for mounting equipment such as ladder brackets. A 1" mounting block shall cover the whole rear of tank for mounting work lights, folding steps, grab rails, accessories and emergency lighting.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

CLEAR WATER LEVEL GAUGE

The right hand side rear wall of the tank shall have a standard built-in liquid level sight gauge 2" in width, natural in color, and 70% transparent.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

CAPACITY CERTIFICATION

All water tanks shall be tested and certified as to capacity on a calibrated and certified tilting scale. Each tank shall be weighed empty and full to provide precise fluid capacity. Each Poly-Tank® III is delivered with a Certificate of Capacity delineating the weight empty and full and the resultant capacity based on weight. Engineering estimates for capacity calculations shall not be permitted for capacity certification.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

CENTER OF GRAVITY

A center of gravity calculation shall be determined for each tank and provided as requested in order to provide the apparatus manufacturer with the necessary data to design and certify the apparatus with respect to the NFPA requirements regarding rollover stability. This information may be used by the apparatus manufacturer to assist in the calculation of the apparatus's ability to meet the tilt table static rollover threshold or calculated Center of Gravity requirements per NFPA. A center of gravity and weight calculation for both empty and full conditions shall be required with each tank.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

TANKNOLOGY™ TAG

A tag shall be installed on the apparatus in a convenient location and contain pertinent information including a QR code readable by commercially available smart phones. The information contained on the tag shall include water capacity, the maximum fill and pressure rates, the serial number of the tank, the date of manufacture, the tank manufacturer, and contact information. The QR code will allow the user to connect with the tank manufacturer for additional information and assistance.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

HOSE BED

There shall be a hose bed area constructed of polypropylene on the top of the tank consisting of two side walls and one front panel. The hose bed shall be welded to the outside perimeter of the tank cover, and shall be approximately 9" tall by the length and width of the water tank.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

HOSEBED FLOOR

The floor of the hose bed shall be grooved by the tank manufacturer to provide integral planking designed to allow the loaded hose to drain and allow airflow for ventilation.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

VINYL HOSEBED COVER

The apparatus shall be equipped with a vinyl hosebed cover with a rear flap and a hook and bungee fastening system at front and sides. The rear flap shall be fastened with three plastic buckles.

The vinyl cover shall be red in color.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

PAINT

The tank shall be painted to match the chassis. The tank's paint color shall be "cross referenced" from the chassis paint, and shall be painted to match the main chassis color as close as possible.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

REAR DUMP VALVE

One (1) NEWTON 10" Model 1050-34 Stainless Steel dump valve shall be installed, and shall be located at the rear center of the tank.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

SWIVEL DUMP SYSTEM

A Newton Model 6012SW-34 stainless steel swivel dump chute extension shall be mounted on the rear dump valve. The unit shall be able to rotate 180 degrees and lock in place while the apparatus is in motion. With the swivel attached, the chute shall be capable of flowing 2,777 gpm.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

TELESCOPIC EXTENSION CHUTE

One (1) Newton, model 4036-34, manual stainless steel telescoping extension chute shall be installed on the swivel. The extension chute shall be capable of extending 36" past the dump valve.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

DIRECT TANK FILL, LEFT HAND SIDE

There shall be a one (1) 2-1/2" direct tank fill located on the left-rear of the apparatus. The valve shall be an Elkhart Unibody (or equivalent) swing out valve. This valve shall be operated using a direct manual actuator handle. The manual actuator shall require only 90° travel and be quickly adjustable to one of eight positions. Valve inlet shall be a 2-1/2" female NST and feature a 30 degree droop with a wire screen inlet strainer and a polished chrome swivel. The inlet shall be able to be controlled from the rear of the apparatus while standing at ground level.

One (1) 2-1/2" NST rocker lug chrome plated brass plug with chain shall be provided.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

DIRECT TANK FILL, RIGHT HAND SIDE

There shall be a one (1) 4" direct tank fill located on the right-rear of the apparatus. The valve shall be a KOCHER Model 10K40204 gate valve. The connection shall be 4" NST swivel thread Female by 4" Storz. The valve shall have a 25 degree turndown. The valve shall be equipped with an adjustable pressure relief valve with an eight position adjustable inlet elbow. The valve shall be controlled with an NFPA compliant slow-close hand wheel gear operator. A bleeder valve shall be provided to exhaust excess air or water from the valve and hoseline.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

STORZ CAP

One (1) 4" Storz lightweight blind cap and chain shall be provided.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

TANK SUBFRAME/ MOUNTING

The tank sub frame and attachments must be in strict compliance with UPF poly-tanks engineering specifications. A non-corrosive protective liner shall be installed in between the tank and the subframe.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

BODY CONSTRUCTION

The width of the apparatus body from the outside face of the left compartments to the outside face of the right compartments shall be 96" wide. Compartments shall be sweepout design and, water and dust proof. All compartments shall be made to the maximum practical dimensions to provide maximum storage capacity. The side compartments shall be modular in design and shall be capable of being replaced if damaged. For adequate ventilation and air displacement, each compartment shall be properly louvered with square vents.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

FENDER PANELS

The side fender panels above the rear wheels shall be constructed of 1/8" bright aluminum diamond plate.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

LEFT SIDE COMPARTMENT IN FRONT OF REAR WHEELS, L-1

One (1) compartment shall be supplied on the left hand side of the truck in front of the rear wheels. The compartment dimensions shall be a minimum of 30" wide by 26" deep by 27" high.

One (1) louver vent shall be installed in the compartment.

COMPARTMENT LIGHTS

One (1) vertically mounted R.O.M V3 LED strip lights shall be installed inside the compartment. The light shall be approximately 24" in length. The lights shall function independently of other compartments by an automatic "On-Off" switch located on each compartment door.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

RIGHT SIDE COMPARTMENT IN FRONT OF REAR WHEELS, R-1

One (1) compartment shall be supplied on the right hand side of the truck in front of the rear wheels. Compartment dimensions shall be a minimum of 70" wide by 26" deep by 27" high. The compartment shall be constructed from diamondplate aluminum and shall be of sweep out design.

One (1) louver vent shall be installed in the compartment.

COMPARTMENT LIGHTS

One (1) vertically mounted R.O.M V3 LED strip lights shall be installed inside the compartment. The light shall be approximately 24" in length. The lights shall function independently of other compartments by an automatic "On-Off" switch located on each compartment door.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

LEFT SIDE COMPARTMENT BEHIND REAR WHEELS, L-2

One (1) compartment shall be supplied on the left hand side of the truck behind of the rear wheels. Compartment dimensions shall be a minimum of 24" wide by 26" deep by 27" high. The compartment shall be constructed from diamondplate aluminum and shall be of sweep out design.

One (1) louver vent shall be installed in the compartment.

COMPARTMENT LIGHTS

One (1) vertically mounted R.O.M V3 LED strip lights shall be installed inside the compartment. The light shall be approximately 24" in length. The lights shall function independently of other compartments by an automatic "On-Off" switch located on each compartment door.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

RIGHT SIDE COMPARTMENT BEHIND REAR WHEELS, R-2

One (1) compartment shall be supplied on the right hand side of the truck behind of the rear wheels. Compartment dimensions shall be a minimum of 24" wide by 26" deep by 27" high. The compartment shall be constructed from diamondplate aluminum and shall be of sweep out design.

One (1) louver vent shall be installed in the compartment.

COMPARTMENT LIGHTS

One (1) vertically mounted R.O.M V3 LED strip lights shall be installed inside the compartment. The light shall be approximately 24" in length. The lights shall function independently of other compartments by an automatic "On-Off" switch located on each compartment door.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

COMPARTMENT DOORS, FRONT

There shall be two (2) vertically hinged doors, with no center posts closing to the center of each front compartment.

The doors on the compartments shall be lap style, and shall be constructed of aluminum treadplate with gas shocks. A heavy duty automotive extruded rubber molding shall be installed around the door perimeter to insure a weather proof seal. Each door shall be bolted to the compartment with a polished stainless steel, piano style continuous hinge.

Each compartment shall have one (1) 6" stainless steel D-Ring latch.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

COMPARTMENT DOORS, REAR

There shall be one (1) vertically hinged door closing towards the rear of the apparatus on each rear compartment

The door on the compartments shall be shall be constructed of aluminum treadplate a gas shock to hold it in the open position. A heavy duty automotive extruded rubber molding shall be installed around the door perimeter to insure a weather proof seal. Each door shall be bolted to the compartment with a polished stainless steel, piano style continuous hinge.

The door handles shall be 6" stainless steel D-Ring.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

ADJUSTABLE SHELVING

Compartment shelving will be constructed of 3/16” brush finish aluminum with a 2” upward bend at front and rear, and side supports. Shelving will be vertically adjustable with spring nuts in aluminum strut channel.

Adjustable shelves will be located as follows:

Left side compartment in front of rear wheels, L-1.
Right side compartment in front of rear wheels, R-1.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

DRI-DEKING

Dri-Dek brand (or equivalent) material will be installed on all compartment floors. The Dri-Dek will be custom installed to provide full floor coverage. The compartment flooring will be red.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

DROP TANK STORAGE- RH SIDE

There shall be room to store an appropriate size dump tank under the right hand side “T” portion of the tank. The area shall have a mechanical means to lock the dump tank in place while the apparatus is in motion. The tank shall slide in horizontally into the hold from the right side of the body. The Fol-Da-Tank storage shall have the capacity for one (1) 2100 US Gallon Fol-Da-Tank with an aluminum frame. One (1) new Fol-Da-Tank shall be provided by the manufacturer and shall be detailed later in this specification.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

HARD SUCTION STORAGE- LH SIDE

There shall be a hard suction storage tray located under the left hand side of the “T” portion of the tank. The hard suction hose storage shall be accessed from the ground at the rear of the unit. Two (2) troughs shall be provided in the storage area for the hose to slide on and be held in position when stored. Appropriate stops shall be provided. The suction storage shall have capacity for two (2) 10’ sections of 5” hard suction hose. New suction hose shall be provided by the manufacturer and shall be detailed later in this specification.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

REAR TAILBOARD

A rear beavertail tailboard shall be provided and installed at the rear of the apparatus. The tailboard shall consist of two (2) separate stepping/ standing surfaces made of aluminum nonslip material. The top step shall be approximately 9.5" deep and the bottom shall be approximately 7" deep. The rear tailboard shall be full width of the tanker body between the side compartments. The outside edges of the rear tailboard shall be trimmed with bright diamondplate aluminum.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

REAR CROSSLAYS

The top step/crosslay cover shall be hinged towards the rear of the body, and contain the crosslays mentioned in the pump and plumbing section of this specification.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

STEPS

All steps shall have a surface area of at least 35 square inches and shall be able to withstand a load of at least 500 pounds.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

REAR FOLDING STEPS

Three (3) large, heavy duty chrome folding steps shall be furnished and located, at the rear of the apparatus. The exact number of steps provided may vary depending upon body configuration and options.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

EXTERIOR GRAB RAILS

Each grab rail shall be non-slip, 1-1/4" diameter extruded polished aluminum grab rails with rubber inserts designed to provide maximum gripping ability, strength, and durability. All railing escutcheons and brackets shall be chrome plated, and shall be bolted to the body with stainless steel bolts.

The rails shall comply with NFPA 1901.

Above section bid exactly as written. _____
Section not provided. _____

Bidder is offering an alternative to this section. _____

GRAB RAILS, REAR, VERTICAL

Two (2) vertically mounted grab rails, approximately 36" long, shall be provided, one (1) each side at the apparatus rear.

Above section bid exactly as written. _____

Section not provided. _____

Bidder is offering an alternative to this section. _____

STEPPING, STANDING, WALKING SURFACES

All exterior surfaces designated by the manufacturer as stepping, standing, or walking areas shall be constructed of Grip Strut or Textured Treadbrite and shall provide a highly slip resistant surface, even when the surface is wet. All interior surfaces designated by the manufacturer as stepping, standing, or walking areas shall be slip resistant when the surface is dry.

The degree of slip resistance shall be in compliance with NFPA 1901. A sign: "DO NOT RIDE ON REAR STEP, DEATH OR SERIOUS INJURY MAY RESULT" shall be placed in view from the ground.

Above section bid exactly as written. _____

Section not provided. _____

Bidder is offering an alternative to this section. _____

12 VOLT ELECTRICAL SECTION

NFPA 1901 CERTIFIED 12 VOLT ELECTRICAL SYSTEM

The 12-volt apparatus body electrical system shall be provided and shall be in compliance with NFPA 1901 testing and certification procedures as follows:

NFPA MINIMUM ELECTRICAL LOAD DEFINITION

The NFPA 1901 defined minimum electrical load shall consist of the total amperage required to simultaneously operate the following in a stationary mode:

1. Propulsion engine and transmission.
2. The clearance and marker lights.
3. Communication equipment. 5 amp default.
4. Illumination of all walking surfaces, the ground at all egress points, control and instrumentation panels and 50% of total compartment lighting.
5. Minimum warning lights required for "blocking right of way" mode.
6. The current to simultaneously operate and fire pump and all specified electrical devices.
7. Anything defined by the purchaser, in the advertised specifications, to be critical to the mission of the apparatus.

RESERVE CAPACITY TEST

The first electrical test to be performed will be the Reserve Capacity Test. All items listed in NFPA Minimum Load Definition shall be activated with the engine shut off. After 10 minutes of operation, the items 1-7 shall be deactivated. After deactivation, the battery system shall have ample reserve to start the engine.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

ALTERNATOR PERFORMANCE TEST AT IDLE

The second electrical test to be performed shall be Alternator Performance Test at Full Load. All electrical loads shall be activated with the engine running up to the governed rpm for two hours. During the test, the system voltage shall not drop below 11.7 volts or have excessive battery discharge for more than 120 seconds. Any loads not defined in the NFPA Minimum Electrical Load may be load managed to pass test.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

TEST CONDITIONS

All electrical testing shall be performed with the engine compartment at approximately 200 degrees.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

12 VOLT ELECTRICAL SYSTEM

The truck shall have a 12-Volt electrical system. All wiring will be run in convoluted high temperature plastic loom. Wiring shall be color and function coded and will be of adequate size to handle the assigned load. All solenoids, relays, and terminal blocks will be located in an easily accessible area.

All circuits provided shall have properly rated low voltage over current protective devices.

All electrical will be accordance with modern automotive wiring standards.

All under side terminal junctions shall be fully enclosed in sealed plastic weather proof boxes.

Electromagnetic interference suppression shall be provided as required to satisfy the radiation limits specified in SAE J551/1.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

CLASS1 ES-KEY SYSTEM

The electrical system shall utilize Class1 Inc. **ES-Key** technology and 1Touch switch modules, where applicable. The apparatus shall be equipped with a Class 1 ES-Key Management System for controlling electrical system devices. This management system shall be capable of performing load management functions, system switching, monitoring and reporting, and be fully programmable for a standardized electrical system utilizing the ES-Key Professional software program.

The system shall consist of a main control module (Supernode II) and the appropriate combination of Power Distribution Module(s) (PDM), Switch Input Module(s) (SIM), and other I/O modules as required for the application.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

SUPERNODE II

The apparatus shall be equipped with a Class1 ES-Key system with a Supernode II high density input output node.

The Supernode II shall have (24) inputs, (24) outputs, a Universal System Manager, a data logger, and programmable special utilities. It must be sealed to IP-67 and have integrated power connections.

The Supernode shall have (18) positive and (6) negative outputs. Each positive output shall be capable of 13 amps continuous duty. The negative outputs shall be capable of 2 amps continuous duty. Supernode II outputs shall contain features such as digital circuit breaker, flash capability, PWM capability and open load detection.

The Supernode II special utility functions shall include timers (delay on/off and one shot), counters, and bi-stable switches. The Supernode II shall have an integrated USB port to allow for direct connection to the ES-Key system without additional interface devices.

The Supernode II 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.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

LOAD MANAGER

The load manager shall be a precision, solid state controller which sequentially switches "ON" multiple circuits at 1/2 second intervals. Individual switches shall enable the user (Driver) to select output "ON or "OFF" status, at any time. The sequencer shall be initiated by the "Emergency Master" switch. The aforementioned 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.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

LOW VOLTAGE MONITOR

Voltage Monitor: A voltage monitor shall be built into the ES-Key electrical system. It shall activate a warning when the alternator output voltage falls below any desired voltage (usually 11.5 volts).

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

1TOUCH SWITCH MODULES

The apparatus shall be equipped with the appropriate quantity of 1Touch switch modules for enhanced device activation. Individual switches shall be backlit with multiple colored and textured switch caps and printable labels. Switch panels shall be sealed to IP67 and have dual LED indicators. Each switch position's back light may be individually controlled allowing for the specific switch position to be used as an indicator. Each switch pair can be configured to momentary, maintained, toggle or a dimmer. Panels can be included in network dimming.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

1TOUCH SWITCH PANEL, 8 POSITION

The apparatus shall be equipped with an eight (8) position 1Touch switch panel module for enhanced device activation. Individual switches shall be backlit with multiple colored and textured switch caps and printable labels. Switch panels shall be sealed to IP67 and have dual LED indicators. Each switch position's back light may be individually controlled allowing for the specific switch position to be used as an indicator. Each switch pair can be configured to momentary, maintained, toggle or a dimmer. Panels can be included in network dimming.

Above section bid exactly as written. _____

Section not provided. _____
Bidder is offering an alternative to this section. _____

SWITCH PANEL LOCATION

The switch panel shall be located on the center console.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

120 VOLT SHORELINE CONNECTION

A 120 volt shoreline connection with a weather tight cover will be provided. The receptacle will be a standard house-hold, recessed male plug in, which will be wired to the specified onboard battery charging system. A label will be provided indicating voltage and amperage ratings.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

SHORELINE POWER INLET PLATE

A shoreline power receptacle information plate will be permanently affixed at or near the power inlet. The plate will indicate the following:

- Type of Line Voltage
- Current Rating in Amps Power Inlet Type (DC or AC)

The shoreline receptacle will be located in the area directly adjacent to the driver's side cab door.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

BATTERY CHARGER / AIR COMPRESSOR SYSTEM

A Kussmaul model #091-187-12-REMOTE-B1, Auto Charge 1200 high output, fully automatic battery charger will be provided for maintaining the vehicle battery system. Unique electronic sensing circuits sense the true battery voltage while eliminating the need for external sense wires. Output current will be 40 amperes @ 12 volt DC.

A Kussmaul 091-9HP air compressor will maintain the air pressure in the chassis air brake system while the vehicle is not in use. The air compressor will have a rated input at 120 volts AC @ 3.5 amps and a maximum of 125 PSI.

An LED bar graph display will be located near the shoreline connection to monitor the battery status.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

GROUND LIGHTING, CHASSIS (With Chassis)

Cab ground lighting shall be supplied with the chassis. These lights are to be supplied and installed by the chassis manufacturer (See chassis specifications).

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

FRONT OF BODY GROUND LIGHTS

Two (2) LED ground lights with outward facing angle brackets shall be installed under the front of the body. One (1) light shall be located on the left hand side and one (1) light located on the right hand side of the apparatus.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

REAR STEP GROUND LIGHTS

Two (2) LED ground lights with outward facing angle brackets shall be installed under the rear step of the apparatus, one (1) each side. The lights shall activate with the parking brake or when the transmission is placed in "park".

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

HAZARD LIGHT

A Whelen 0SR00FCR flashing red light, located in the driving compartment, shall be illuminated automatically whenever any compartment door is ajar. The hazard light shall be marked with a sign that reads "Do Not Move Apparatus When Light is On"

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

LED LICENSE PLATE LIGHT – REAR

One (1) LED license plate light shall be provided above the mounting position of the license plate. The light shall be clear in color and shall have a chrome finish.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

REAR ROAD LIGHTING

Two (2) sets of 4" LED stop, turn and back-up lights shall be provided, one (1) set on each side of the rear of the truck.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

MARKER LIGHTS

LED marker lights shall be installed on the vehicle in conformance to the Department of Transportation requirements. The side and rear of the body will be provided with reflectors. All marker lights shall be incorporated into the headlight circuit of the cab/chassis.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

UPPER REAR SCENE LIGHTS

One (1) pair of Whelen model 90SC0ENZR LED scene lights shall be installed, one (1) each side on the upper rear of the apparatus body. The dimensions of the lights shall be 7-13/16" high x 9-3/16" wide.

The light(s) shall be installed within a Cast Aluminum Bezel.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

UPPER RIGHT SCENE LIGHTS

One (1) pair of Whelen model 90SC0ENZR LED scene lights shall be installed, one (1) each side on the upper right hand side of the apparatus body. The dimensions of the lights shall be 7-13/16" high x 9-3/16" wide. The light(s) shall be installed within a Cast Aluminum Bezel.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

UPPER LEFT SCENE LIGHTS

One (1) pair of Whelen model 90SC0ENZR LED scene lights shall be installed, one (1) each side on the upper left hand side of the apparatus body. The dimensions of the lights shall be 7-13/16" high x 9-3/16" wide.

The light(s) shall be installed within a Cast Aluminum Bezel.

- Above section bid exactly as written. _____

Section not provided. _____
Bidder is offering an alternative to this section. _____

SCENE LIGHT ACTIVATION

The scene lights shall be activated by a switch located in the cab. Each side shall be activated separately.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

AUXILLARY SCENE LIGHT ACTIVATION

The rear scene lights shall activate automatically upon placing the transmission into reverse.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

NFPA AUDIBLE AND LIGHTING WARNING PACKAGE

The following warning light package shall include all of the minimum warning light and actuation requirements for the current revision of the NFPA 1901-2009. The lighting as specified shall meet the requirements for both "Clearing Right of Way" and "Blocking Right of Way" which includes disabling all white warning lights when the apparatus is in "Blocking Right of Way" mode.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

WARNING LIGHT FLASH PATTERN

All of the perimeter warning lights shall be set to the default NFPA flash pattern as provided by the warning light manufacturer.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

WARNING PACKAGE ACTUATION CONTROLS

The entire warning light package shall be actuated with a single warning light switch located on the cab switch panel. The wiring for the warning light package shall engage all of the lights required for "Clearing Right of Way" mode when the vehicle parking brake is not engaged. An automatic control system shall be provided to switch the warning lights to the "Blocking Right of Way" mode when the vehicle parking brake is engaged.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

LIGHTBAR

One (1) WHELEN JE2NFPA 56" LED lightbar shall be supplied and mounted. The lightbar shall have clear lenses and contain the following modules:

Four (4) RED LIN6 LED modules, two (2) on each corner.

Four (4) RED CON3 LED modules, across the front

Two (2) WHITE CON3 LED modules, on the front

The White LED modules shall be shut down with parking braking for "Blocking Right-Of -Way" mode.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

UPPER REAR WARNING LIGHTS

One (1) pair of Whelen model 90RR5FRR Super LED warning lights shall be installed, one (1) each side on the upper rear of the apparatus body. The dimensions of the lights shall be 7-13/16" high x 9-3/16" wide. The lights shall be red in color with red lens.

The light(s) shall be installed within a Cast Aluminum Bezel.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

UPPER LEFT SIDE WARNING LIGHTS

One (1) pair of Whelen model 90RR5FRR Super LED warning lights with shall be installed, one (1) each side on the upper left side of the apparatus body. The dimensions of the lights shall be 7-13/16" high x 9-3/16" wide. The lights shall be red in color with red lens.

The light(s) shall be installed within a Cast Aluminum Bezel.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

UPPER RIGHT SIDE WARNING LIGHTS

One (1) pair of Whelen model 90RR5FRR Super LED warning lights shall be installed, one (1) each side on the upper right side of the apparatus body. The dimensions of the lights shall be 7-13/16" high x 9-3/16" wide. The lights shall be red in color with red lens.

The light(s) shall be installed within a Cast Aluminum Bezel.

Above section bid exactly as written. _____

Section not provided. _____
Bidder is offering an alternative to this section. _____

LOWER FRONT WARNING LIGHTS

One (1) pair of Whelen model 60R02FRR Super LED warning lights shall be installed, one (1) each side on the front of the chassis cab. The dimensions of the lights shall be 4-1/8" high x 6-1/2" wide. The lights shall be red in color with red lens.

There shall be chrome bezels supplied and installed on the lights.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

INTERSECTION WARNING LIGHTS

One (1) pair of Whelen model 60R02FRR Super LED warning lights shall be installed, one (1) each side of the chassis cab. The dimensions of the lights shall be 4-1/8" high x 6-1/2" wide. The lights shall be red in color with red lens.

There shall be chrome bezels supplied and installed on the lights.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

LOWER MID-BODY WARNING LIGHTS

One (1) pair of Whelen model 60R02FRR Super LED warning lights shall be installed, one (1) each side of the apparatus, mid-body. The dimensions of the lights shall be 4-1/8" high x 6-1/2" wide. The lights shall be red in color with red lens.

There shall be chrome bezels supplied and installed on the lights.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

LOWER REAR WARNING LIGHTS

One (1) pair of Whelen model 60R02FRR Super LED warning lights shall be installed, one (1) each side on the lower rear of the apparatus body. The dimensions of the lights shall be 4-1/8" high x 6-1/2" wide. The lights shall be red in color with red lens.

There shall be chrome bezels supplied and installed on the lights.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

REAR BEACONS

Two (2) Whelen "Rota-Beam" RB6 Series, 60W halogen beacons shall be provided and installed at the upper rear corners of the apparatus.

The beacon on the left hand side shall be red in color.

The beacon on the right hand side shall be amber in color.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

BEACON LIGHT MOUNTING

The rear beacons shall be mounted on a smooth aluminum bracket and attached to the apparatus body, one (1) on each side.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

ELECTRIC SIREN AND CONTROL

One (1) Whelen model #295SLSA1 electronic siren shall be mounted in the cab. This unit shall be programmed to feature an electronic air horn, simulated mechanical tone, wail, yelp, and shall have a hard wired PA microphone.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

SIREN LOCATION

The electronic siren control shall be located in the center console.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

ELECTRONIC SIREN SPEAKER

One (1) Cast Products Inc. model SA4306 100 watt cast aluminum speaker shall be installed. The speaker shall measure 7.46 inches tall X 7.57 inches wide X 3.06 inches deep. The speaker shall include a flat mounting flange which shall be polished aluminum. It shall be wired to the electric siren located in the cab.

The speaker shall be mounted on the right hand side of the bumper.

Above section bid exactly as written. _____

Section not provided. _____
Bidder is offering an alternative to this section. _____

PAINT, STRIPING, AND LETTERING SECTION PAINT PROCESS

The wetside tank shall be totally removed from the chassis during the painting process to insure the entire unit is covered.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

COMPARTMENT INTERIORS

The compartment interiors shall be unpainted and in their natural finish.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

PAINT COLOR

The apparatus body paint shall be "cross referenced" from the chassis paint, and shall be painted to match the main chassis color as close as possible.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

WHEEL RIMS

The chassis wheels shall be as furnished by the chassis OEM. No additional finishes shall be provided by apparatus manufacturer.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

REFLECTIVE STRIPING

Reflective striping shall be applied to the perimeter of the truck. Size and design shall be determined by the department.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

CHEVRON STRIPING

At least 50% of the rear of the unit shall be covered with a 3M Scotchlite Red/Yellow-Green alternating 6" stripe in an inverted Chevron pattern.

Above section bid exactly as written. _____

Section not provided. _____
Bidder is offering an alternative to this section. _____

LETTERING

Reflective lettering shall be applied to both cab doors and the apparatus body at the direction of the department. NFPA Compliant reflective material shall be affixed to the inside of each hinged door.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

EQUIPMENT SECTION

EQUIPMENT SUPPLIED BY OEM

The following equipment (if listed below) shall be supplied with the apparatus by the manufacturer. It shall be shipped loose unless detailed below or otherwise in these specifications.

FOLDING TANK

One (1) 2100 Gallon Aluminum collapsible frame Fol-Da-Tank shall be supplied. It shall have a 17 oz. HPR® High Performance Rubber liner that shall be red in color. Grab handles shall be placed on the side wall of the liner to help the firefighter pick up the liner when folding.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

SUCTION HOSE

Two (2) 5" X 10' section(s) of KOCHEK, PVC type hard, suction hose shall be provided on the apparatus. The hoses shall be lite weight type with pyrolite, Long Handle Female x Rocker Lug Male, NST threads. The color shall be black.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

LOW LEVEL BOX STRAINER

One (1) 5" KOCHEK Model LL50 NH long handle low level box strainer with jet siphon shall be provided on the apparatus.

Above section bid exactly as written. _____
Section not provided. _____
Bidder is offering an alternative to this section. _____

WHEEL CHOCKS WITH MOUNTS

A pair of Zico Model SAC-44 Quic-Chok folding wheel chocks shall be provided and mounted under the apparatus body on the driver's side with model SQCH-44H horizontal mounting brackets.

- Above section bid exactly as written. _____
- Section not provided. _____
- Bidder is offering an alternative to this section. _____

PURCHASER RESPONSIBILITY

It shall be the responsibility of the purchaser to supply all NFPA 1901 equipment not listed in this specification before the apparatus is placed in service.

**Freetown Fire Department
Specifications for one (1) 2014 or newer model year
Tanker/Tender Apparatus
Price Breakdown**

Price;

Completed Vehicle Total	\$ _____
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Equipment;

Wheel Chocks with bracket	\$ _____
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Suction Hose	\$ _____
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Box Strainer	\$ _____
---------------------	-----------------

Folding Tank	\$ _____
---------------------	-----------------

Equipment Total	\$ _____
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TOTAL BID PRICE	\$ _____
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