



REQUEST FOR PROPOSAL

2012-25J

June 19, 2012

The above number must appear on all quotations and related correspondence.

THIS IS NOT AN ORDER

PROPOSALS ACCEPTED NO LATER THAN:
3:00 PM, MONDAY, JULY 16, 2012

TO: Julie Rollins
Utah County Auditors Office
100 East Center, Suite 3600
Provo, UT 84606 (801) 851-8234

THROUGH THIS REQUEST FOR PROPOSAL, UTAH COUNTY INTENDS TO SELECT A QUALIFIED CONTRACTOR TO PROVIDE A 1000 GPM CAFS URBAN INTERFACE PUMPER ON AN INTERNATIONAL 7500, 4-DOOR, 4X4 CHASIS, 750 GALLON WATER TANK AND APPARATUS BODY. PERSUANT TO THIS RFP A CONTRACT WILL BE EXECUTED, A COPY WHICH IS ATTACHED AS ATTACHMENT C TO EXHIBIT B.

***** SEE ATTACHMENT FOR SPECIFICATIONS AND REQUIREMENTS *****

SEE PROPOSAL ORGANIZATION, SEC. B FOR LIST OF ITEMS TO BE INCLUDED WITH PROPOSAL

QUESTIONS REGARDING THIS RFP SHOULD BE DIRECTED, PRIOR TO JULY 9, TO:
DAVE MARSELLA, DMARSELLA@PCFD.ORG 435.640.8205 (CELL)
DAN GIBSON, DANIELGG.UCPW@UTAH.GOV 801.851.8682 (OFFICE) 801.420.0323 (CELL)
OR KEVIN CORTEZ KEVINC.UCSO@STATE.UT.US 801.851.4125 (OFFICE)

PLEASE SUBMIT FOUR (4) COPIES OF YOUR PROPOSAL.

SEALED PROPOSALS SHOULD BE MAILED OR HAND DELIVERED TO: JULIE ROLLINS, UTAH COUNTY PURCHASING AGENT, 100 EAST CENTER, SUITE 3600, PROVO, UTAH 84606, AND SHOULD BE CLEARLY MARKED "FIRE TRUCK RFP". REFERENCE RFP # 2012-25J ON ALL DOCUMENTS PERTAINING TO THIS PROPOSAL. ALL PROPOSALS ARE DUE ON MONDAY, JULY 16, 2012, AT 3:00 P.M. NO LATE PROPOSALS WILL BE ACCEPTED.

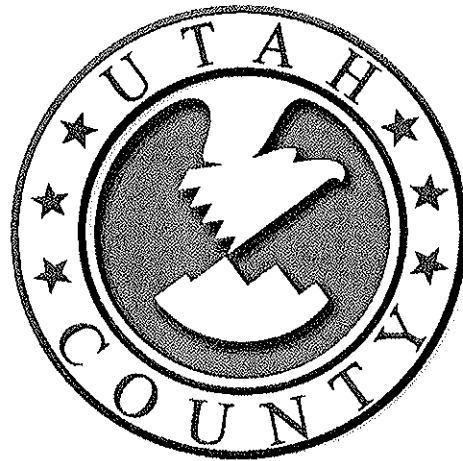
UTAH COUNTY RESERVES THE RIGHT TO REJECT ANY OR ALL PROPOSALS OR WAIVE MINOR IRREGULARITIES WHEN TO DO SO WOULD BE IN THE BEST INTERESTS OF UTAH COUNTY. MINOR IRREGULARITIES ARE THOSE WHICH WILL NOT HAVE A SIGNIFICANT ADVERSE EFFECT ON OVERALL COMPETITION OR PERFORMANCE LEVELS.

JULIE ROLLINS, C.P.M.
PURCHASING AGENT

A handwritten signature of Julie Rollins in cursive script, written over a horizontal line.

UTAH COUNTY FIRE

Severe Duty Brush Fire Truck RFP



Dave Marsella/Dan Gibson
4/9/2012



Utah County Fire Department, UT

Bidder Complies

Yes No

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A. REQUEST FOR PROPOSAL



Utah County Fire Department, UT

Bidder Complies	
Yes	No

INTENT

Through this Request for Proposal (RFP), Utah County intends to select a qualified Contractor to Provide a 1000 GPM CAFS Urban Interface Pumper on an International 7500, 4-Door, 4x4 chassis, 750 gallon water tank and apparatus body. Pursuant to this RFP a contract will be executed, a copy of which is attached as Attachment C to Exhibit B.

PROCEDURE

A. The procedure for response to this RFP, evaluation of proposals, and selection of a Contractor is as follows:

1. Interested entities will prepare and submit their proposals prior to the specified Closing Date for Receipt of Proposals.
2. Utah County and/or its representatives will evaluate all submitted proposals to determine acceptance or rejection of the proposals.
3. The selected proposer(s) will be required to sign an agreement, which is included as Attachment C.

PROPOSAL ORGANIZATION

A. Each respondent must submit its SEALED proposal to the Utah County Purchasing Agent. The envelope containing the proposal must be clearly labeled "SEALED PROPOSAL – 1000 GPM CAFS INTERFACE PUMPER". The proposal must be delivered to:

Utah County Purchasing Agent
100 East Center, Room 3600
Provo, Utah 84606

LATE PROPOSALS WILL NOT BE ACCEPTED EXCEPT AS SET FORTH IN UTAH COUNTY PROCUREMENT RULES AND REGULATIONS.

B. The proposal must include:

1. Completed Contractor Cost Proposal (Exhibit B)
2. Completed Contractor Information Form (Attachment A).
3. Completed Certificate of Non Collusion (Attachment B).
4. Proof of FAMA membership.
5. CAD drawing of proposed apparatus, 11" x 17" minimum size.
6. Photos of similar apparatus to unit proposed.
7. Sample electrical diagrams as outlined herein (section 1.30, items G and H).
8. A list of 10 agencies where similar apparatus have been delivered and are in use.
9. A copy of the proposer's current local business license.
10. Proof of required insurance.
11. Proof of required financial stability.
12. A completed W-9 form for the proposer.
13. Each proposal shall be submitted in sequence with the attached specifications for ease of verifying compliance of proposals with proposer's specifications.
14. Intent to provide PRE-CONSTRUCTION CONFERENCE



Utah County Fire Department, UT

Bidder
Complies

Yes

No

QUESTIONS AND CLARIFICATIONS

Questions regarding this RFP should be directed prior to the submission deadline date to Dave Marsella, dmarsella@pcfcd.org, 435-640-8205 (Cell), Dan Gibson, danielgg.ucpw@utah.gov, 801-851-8682 (Office), 801-420-0323 (Mobile), 801-851-8685 (Fax) or Kevin Cortez, kevinc.ucso@state.ut.us, 801-851-4125 (Office).

MANDATORY PRE-CONSTRUCTION CONFERENCE

A pre-construction conference for the successful proposer shall be conducted at the Utah County Fire Department Headquarters, at which time all final designs and equipment mounting locations will be approved, prior to any sheet metal being cut. A factory-trained representative shall be present during the pre-construction conference to answer any design questions relating to the layout of the apparatus. All expenses for travel, meals, and lodging shall be included in the proposal and paid by the successful proposer. PROPOSER SHALL INDICATE INTENTION TO PROVIDE THE REQUIRED PRE-CONSTRUCTION CONFERENCE IN THE PROPOSAL PACKET.

ACCEPTANCE OF PROPOSAL

- A. Utah County reserves the right to reject any or all proposals or waive minor irregularities when to do so would be in the best interests of Utah County. Minor irregularities are those which will not have a significant adverse effect on overall competition or performance levels.
- B. The responding party agrees that Utah County may terminate this procurement procedure at any time, and Utah County shall have no liability or responsibility to the responding party for any costs or expenses incurred in connection with this RFP, or such party's response.

DISQUALIFICATION OF PROPOSAL

- A. The occurrence of any of the following may result in disqualification of a proposal:
 1. Failure to respond within the established timetable.
 2. Failure to completely answer all questions presented in the RFP.
 3. Use of any other form or format other than those indicated in the RFP.
 4. Failure to provide requested documentation at the time of proposal submission.
 5. Illegible responses.
 6. If the proposer adds any provisions reserving the right to accept or reject an award or to enter into an agreement pursuant to an award, or any other unauthorized conditions, limitations or provisions.
 7. If the proposer is unable to evidence a satisfactory record of integrity.
 8. If the proposer is not qualified legally to contract.
 9. If the proposal at the opening does not contain a signed proposal, and a signed certificate of non-collusion.
 10. Proposals will be rejected which substitute less substantial materials and/or methods of body construction than those specified. Since all manufacturers have the ability to purchase the materials described as well as to shear, fabricate and assemble body panels as specified, these areas are considered a strict requirement of the specification.
 11. Utah County reserves the right to reject any or all proposals.



Utah County Fire Department, UT

Bidder Complies	
Yes	No

DISPOSITION OF PROPOSALS

All proposals (and the information contained therein) shall become the property of Utah County. No proposal shall be returned to the respondent regardless of the outcome of the selection process.

EVALUATION CRITERIA

All proposals will be evaluated by authorized representatives of Utah County for compliance with the terms and conditions contained in this RFP and the resulting agreement awarded to the proposer selected pursuant to the following criteria:

- A. This Company demonstrates the required experience, education and credentials (0-30 points).
- B. Extent of services offered compared to other vendors (0-10 points).
- C. Location of services provided is convenient to County (0-10 points).
- D. Cost of product proposed compared to other proposals (0-30 points).
- E. Response to the proposal based on the required documentation and certification (0-10 points).
- F. Proposal compliance with specifications (0-10 points)

GENERAL

- A. Utah County will award a contract in reliance upon the information contained in proposals submitted in response to the RFP. Utah County will be legally bound only when and if there is a signed agreement entered into between Utah County and the awarded proposer.
- B. It is vitally important that any person who signs a proposal or agreement on behalf of a respondent certifies that he or she has the authority to so act. The proposer who has its proposal accepted may be required to answer further questions and provide further clarification of its proposal and responses.
- C. Receiving this RFP or responding to it does not entitle any entity to participation, services or transactions resulting from or arising in connection with this RFP. Utah County shall have no liability to any person or entity under or in connection with this RFP, unless and until Utah County and such person have executed and entered into an agreement pursuant to the terms of this RFP.
- D. By responding to this RFP each responding party acknowledges that neither Utah County nor any of its representatives is making or has made any representation or warranty, either express or implied, as to the accuracy or completeness of any portion of the information contained in this RFP. The responding party further agrees that neither Utah County nor any of its representatives shall have any liability to the responding party or any of its representatives as a result of this RFP process or the use of the information contained in this RFP. Only the terms and conditions contained in an agreement when, as, and if executed, and subject to such limitations and restrictions as may be specified therein, may be relied upon by the respondent in any manner as having any legal effect whatsoever.



Utah County Fire Department, UT

**Bidder
Complies**
Yes No

- E. Each proposal must be accompanied by proposer’s accurate written specifications covering the apparatus and equipment, which it is proposing to furnish and to which the apparatus furnished under the Contract must conform.
- F. It is the intent of these specifications to cover the furnishing and delivery to the purchaser, a complete apparatus equipped as specified. All specifications herein contained are considered as minimum. Some items have been specified by brand name or model number. These have been carefully selected because of their reliability, compatibility with present equipment, and local availability of parts.
- G. “As Equal” exceptions to these specifications will be considered relating to the make and model of fire pump, valves and plumbing, gauge and types of materials, size of compartments, methods of construction, and overall design features of the apparatus. Proof of any differences to these specifications as proposed regarding the major components, features, materials, and building practices as specified by the purchaser rests solely with the proposer and may or may not be deemed acceptable alternatives by the purchaser.
- H. Exceptions taken in any area, no matter how small, must be listed on a separate page and marked "Exceptions to the Specifications". Every exception taken shall be listed as to page number and paragraph. Failure to provide the required exception list with the proposal will be cause for rejection of that proposal.
- I. Such details and other construction features not specifically covered herein shall conform to all State and Federal requirements, and the NFPA Pamphlet No. 1901 "Standard for Automotive Fire Apparatus" in effect at the time the contract is signed.
- J. Any test equipment required or expense incurred for the ULI pump test shall be borne by the contractor supplying this equipment.
- K. Contractor shall furnish satisfactory evidence that he has the ability to construct the apparatus specified, and shall state in the proposal the location of the factory where the apparatus is to be built, and also where future service work will be performed. The apparatus shall be of proven design, not a first year production or prototype, with readily available replacement parts.
- L. Proposals will only be considered which are submitted by full time fire apparatus manufacturers who are current members of the Fire Apparatus Manufacturers Association (FAMA). FAMA is a nonprofit organization designed to keep fire truck manufacturers abreast with latest technologies and governing standards, and to act as a liaison to the IAFC and NFPA. Proposer must produce evidence of their affiliation to FAMA in the proposal.
- M. All proposers shall provide with their proposal, pictures of similar apparatus as that being proposal, and the names and addresses of ten fire departments where similar apparatus have been furnished



Utah County Fire Department, UT

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Complies

Yes

No

- N. When analyzing the proposals, and in recommending a successful proposer, superior design, workmanship, materials, operating costs, location of factory, service centers, past experience, length of incorporation and compliance to specifications will be taken into consideration.

INTERPRETATION

The invalidity of any provision herein shall not prevent the remainder from being carried into effect. Whenever the context of any provision shall require it, the singular number shall be held to include the plural number, and vice versa, and the use of any gender shall include all genders. The paragraph and section headings are for convenience only and do not constitute a part of the provisions hereof.

PROPRIETARY INFORMATION

The proposer shall mark proprietary information contained in the proposal which is not to be disclosed to the public or used for purposes other than the evaluation of the proposals. Pricing and service elements of the successful proposal will not be considered proprietary.

RULES OF PROCUREMENT

- A. This procurement shall conform to and is governed by The Utah County Division of Purchasing, Procurement Rules and Regulations.
- B. For this procurement, all proposals must be submitted in the proposal format outlined herein.
- C. All prospective proposers must meet the required criteria as of the date of submission.
- D. Respondents must provide all information requested in the Contractor Information Form.
- E. Utah County has established certain requirements with respect to proposals to be submitted by respondents. The use of "shall", "must", or "will", in this RFP indicates a requirement or condition from which a material deviation will not be approved by Utah County.

INSURANCE REQUIREMENTS

- A. Each proposer must submit with their proposal a Certificate of Insurance listing the proposed manufacturer's product liability insurance coverage. Product and Commercial general liability insurance shall be a minimum amount of twelve (12) million dollars with coverage attained with a minimum of \$2,000,000.00 per occurrence product and commercial general liability insurance and \$10,000,000.00 umbrella coverage. Submitted Certificate shall name the apparatus manufacturer, insurance company, policy number, and effective dates of the insurance policy. Proposals submitted without the required Certificate, or for Certificates listing less than the required coverages, will be considered non responsive and automatically rejected. No exceptions are allowed to the minimum insurance coverage requirement.
- B. The manufacturer shall maintain full insurance coverage on the purchaser's cab and chassis from manufacturer's time of first possession until the apparatus is delivered and accepted by the purchaser. No exceptions. Purchaser reserves the right to require proof of insurance from the manufacturer's insurance carrier prior to entering into a contract for the apparatus.



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Complies

Yes

No

DRAWINGS

A CAD produced line drawing of the exact apparatus being proposed must be furnished with the proposal. Since the blueprint drawing is required of all proposers, any proposal submitted without a drawing as specified will be considered non-responsive and automatically rejected. Drawing must include the left side with chassis cab, right, and rear views of the vehicle. Drawing must be a minimum of 11" x 17", and shall be a drawing of the exact apparatus as proposed, not a drawing of another similar unit. All submitted drawings will become a part of the proposal.

COMPLETION DATE

Proposers shall indicate in their proposals the number of working days for delivery of the completed apparatus, from the date of Purchaser's notification of proposal acceptance to the Manufacturer.

PERFORMANCE PENALTY

Contractor shall pay County a late penalty of \$1,000.00 per calendar day for each calendar day after the completion date specified in the Agreement, or other such completion date established according to the terms hereof, that the work is not delivered, FULLY complete and accepted by County with no remaining punch list items.

CARRYING CAPACITY

The GAWR and GCWR or GVWR of the chassis shall be adequate to carry the fully equipped apparatus including full water and other tanks, the specified hose load, unequipped personnel weight, ground ladders, and a miscellaneous equipment allowance of 2000 pounds.

A permanent placard shall be affixed and visible to the driver, which states the maximum number of personnel the vehicle is designed to carry.

The height of the fully loaded vehicle's center of gravity shall not exceed the chassis manufacturer's maximum limit.

APPARATUS WARRANTY

As a condition of purchaser's acceptance of the apparatus, the contractor shall furnish the following warranty:

We the manufacturing company, warrant each new piece of fire apparatus manufactured by us to be free from defects in material and workmanship under normal use and service. Our obligation under this warranty is limited to repair or replacing, as the Purchaser may elect, any defective part or parts thereof which shall be returned to us with transportation charges prepaid provided that such part or parts are defective within one year after delivery of said vehicle. Such defective part or parts will be returned or replaced free of charge and without charge for reinstallation, to the original purchaser.



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Yes

No

This warranty will not apply:

1. To normal maintenance, service or adjustments.
2. To any part or parts which have been repaired or altered outside of our factory in any way which affects its durability, which has been subject to misuse, negligence, or accident, which has been operated at a speed exceeding the factory rated speed, or which has been loaded beyond the factory rated load capacity.
3. To the truck chassis and associated equipment furnished with the chassis, including, but not limited to; engine transmission, axles, frame rails, alternator, batteries, or other trade accessories in as much as they are warranted separately by their respective manufacturers and are applicable to Purchaser for the same period of time.

This Warranty is in lieu of all other warranties expressed or implied and of all other obligations or liabilities on our part and we neither assume nor authorize any other person to assume for us any liability in connection with the sale of our apparatus.

Contractor shall provide Purchaser with all manufacturer warranties upon delivery of the vehicle.

DESIGN REQUIREMENTS

- A. Specified design features of the apparatus have been carefully selected because of their safety, integrity and consistency with existing apparatus. It is expected that all proposers will adhere to the compartmentation layout, etc., since these features can be produced by all fire apparatus manufacturers.
- B. All aspects of the vehicle shall be properly engineered with priority given to firefighter safety, as well as ease of operation and maintenance of the apparatus. The vehicle shall be free from hazardous protrusions, angles or sharp corners that might bring injury to a firefighter or equipment. Previously delivered units will be judged for compliance to these factors.
- C. All water, air, fuel, hydraulic and/or oil lines on the chassis and apparatus shall be properly located, and securely tie wrapped to prevent scuffing or abrasion. Durable type grommets or loom material shall be used to protect the lines wherever a line passes through the apparatus body or frame rail sections.
- D. All grease fittings, bleeders, filler plugs, drains and check points shall be located so as to be easily accessible. No special tools shall be required to access these components for normal service or maintenance of the vehicle.
- E. All parts and components on the vehicle shall be positioned for ease of inspection, and recognition of wear or failure. Easily removable access or cover plates shall be provided for all items requiring periodic service or adjustment. Access panels shall be of the hinged or quick disconnect design-allowing ease of access.



Utah County Fire Department, UT

Bidder Complies

Yes No

- F. Design of the apparatus shall be such that no disassembly of the body or any of its parts is required for normal maintenance.
- G. All components of the chassis and apparatus shall be protected against rain, snow or other adverse weather conditions.

PRICING OF FUTURE PURCHASES AND "TAG ON" ORDERS

- A. Apparatus purchased in future years beyond the proposal award date are subject to cost increases for material and labor. The successful proposer shall extend the proposed price for future years through the use of the U.S. Bureau of Labor Statistics, Producer Price Index (PPI) to calculate the selling price increase.
 - a. Series ID - PCU3361203361203
 - b. Industry - Heavy Duty Truck Manufacturing
 - c. Product - Buses, Including military and firefighting vehicles
- B. The price adjustment shall not exceed the percentage adjustment of the PPI at the time of the proposal opening date to the most current month for which the statistic is available. The original quoted price shall be the base price.
- C. The successful proposer shall accept "tag on" orders to this proposal for a period not to exceed three (3) years from the proposal opening date. The successful proposer shall honor the "tag on" order from any county or municipality within the United States or Canada.
- D. In many cases the entity wishing to "tag on" to an existing order may require their apparatus to be configured differently from the original proposed apparatus. The successful proposer shall allow changes to the configuration within good engineering guidelines. The changes shall be subject to current pricing in effect at the time of order. For example, a different engine may be required. This shall be considered a "change order" and the purchase price shall be adjusted up or down depending on the current option price.

ACCEPTANCE TESTS AND REQUIREMENTS

- A. Equipment and apparatus acceptance tests on behalf of the purchaser shall be prescribed and conducted prior to delivery or within 10 days after delivery, by the manufacturer's representative in the presence of such person or persons as the purchaser may designate in the requirements for delivery.
 - 1. The apparatus, loaded with a full complement of hose and men, a full water tank, and equipment as specified in "Carrying Capacity" on this page, shall meet the tests on paved roads, dry and in good condition. Tests shall be on the basis of two runs, in opposite directions over the same route, the engine not operating in excess of the manufacturer's maximum rpm.
 - 2. From a standing start, through the gears, the vehicle shall attain a true speed of 35-mph within 25 seconds. From a steady speed of 15-mph the vehicle shall accelerate to a true speed of 55-mph within 30 seconds.
 - 3. The vehicle shall attain a minimum top speed of 65-mph on a level road.



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**Bidder
Complies**

Yes No

- 4. The apparatus shall be able to maintain a speed of at least 20-mph on any grade up to and including 6 percent.
- 5. Manufacturers pump test and Certification tests shall be conducted by the manufacturer in accordance with requirements of NFPA #1901. Certificate of testing shall be furnished to the purchaser.

NOTE:

Responsibility for the apparatus and all equipment shall remain with the contractor until the apparatus and equipment is delivered to the purchaser.

- 6. In the event the apparatus or equipment fails to meet the test requirements on first trial, a second trial may be made at the option of the Contractor within thirty days of the date of the first trial. Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection. Failure to make such changes as the Chief of the Fire Department and/or the purchaser may consider necessary to conform to any clause of the specifications within thirty days after notice is given to the Contractor to make such changes shall also be cause for rejection of the apparatus and/or equipment.

DOCUMENTATION SUPPLIED AT DELIVERY

A. The manufacturer must supply at time of delivery, at least one copy of:

- 1. Engine manufacturer's certified brake horsepower curve showing the maximum no load governed speed.
- 2. Manufacturer's record of pumper construction details.
- 3. Pump manufacturer's certification of suction capability.
- 4. Pump manufacturer's certification of hydrostatic test.
- 5. If specified certification of inspection and testing by the Underwriter's Laboratories Incorporated.
- 6. A copy of the apparatus manufacturer's approval for stationary pumping applications.
- 7. Weight documents from a certified scale showing actual loading on the front axle, rear axle(s), and overall vehicle (with water tank full but without personnel, equipment, or hose).
- 8. At least two copies of the complete operation and maintenance manual covering the completed apparatus as delivered, including the pump and firefighting equipment delivered with the apparatus.



Utah County Fire Department, UT

**Bidder
Complies**

Yes

No

9. All applicable manufacturer warranties and manuals.

NO EXCEPTIONS WILL BE ALLOWED TO ANY OF THE DOCUMENTATION REQUIREMENTS.

DATA PLACARDS

A test data plate shall be provided at the pump operator's position that gives the rated discharges and pressures together with the speed of the engine as determined by the manufacturer's test for this unit. Plate must comply with requirements of NFPA #1901.

A permanent data plate shall be affixed in the drivers compartment specifying and quantity and type of the following fluids used in the vehicle.

1. Engine Oil
2. Engine Coolant
3. Chassis Transmission Fluid
4. Pump Transmission Lubrication Fluid
5. Pump Primer Fluid
6. Drive Axle Lubrication Fluid
7. Air Conditioning refrigerant
8. Air Conditioning lubrication oil
9. Power steering fluid
10. Cab tilt mechanism fluid
11. Transfer case fluid
12. Equipment rack fluid
13. Air compressor system lubricant
14. Generator system lubricant

Permanent placards shall be affixed and visible to all seated occupants instructing the occupants to wear their seat belts.

A permanent placard shall be affixed to the rear step area to instruct that riding on the rear step is prohibited.

PAYMENT

- A. Final payment for the apparatus shall be made at time of delivery and acceptance of the completed vehicle. Due to insurance liability, the apparatus will not be left at the purchaser's location without full acceptance and payment or prior agreement between the Purchaser and Proposer.
- B. Final delivery price shall not include any Local or Federal taxes. The Proposer shall not be liable for any State or Federal mandated tax or program after sale or delivery of the apparatus

PERFORMANCE BOND



Utah County Fire Department, UT

Bidder
Complies

Yes

No

A 100% Performance Bond, which guarantees delivery AND performance may be required by the purchaser. If required, the performance bond must be supplied by the successful proposer within 20 days of award of the contract. Supply Bonds will not be accepted in place of the requested Performance Bond. Bond must be supplied by the manufacturer of the apparatus. Bonds furnished by salesman or other agents will not be accepted. If required, please state below the additional cost to provide the performance bond. Please do not include the cost of the performance bond in the proposal price.

If a 100% performance bond is required by the purchaser, please add

\$ _____ to the proposal price.

INSPECTION TRIPS

Inspection trip(s) for purchaser personnel may be required by the purchaser and shall be made to the facility during the course of construction of the apparatus. Successful proposer shall consult with the purchaser committee chairperson as to the proper timing of the inspection trip(s). Air travel (for distances over 250 miles), meals, and lodging expenses shall be included. If required, please state below the additional cost of each factory inspection trip. Please do not include the costs for inspection trips in the proposal price.

If required by the purchaser, the cost of each inspection trip per each person required will be:

\$ _____ per trip per person.

DELIVERED UNITS LIST

The vehicle manufacturer shall provide a listing of ten (10) recently delivered units of similar design. The list shall include a contact person, address and phone number who represents the purchaser.

TRAINING

- A. Contractor, at Contractor's expense, shall properly instruct Purchaser personnel as to the proper use of the entire apparatus including, but not limited to, chassis, fire pump system, the apparatus and all equipment. The demonstration shall be made by a factory trained Specialist who shall be responsible for complete instruction as to operation and maintenance of the chassis, and the completed vehicle.
- B. A demonstration specialist shall remain at the Purchaser location for a sufficient amount of time to provide thorough instruction to all personnel, or as instructed by Chief of the Department. All meals, motel and travel costs shall be the responsibility of the Contractor.

DELIVERY OF APPARATUS

The apparatus shall be delivered complete and ready for operation. The apparatus, to insure proper break-in of all components, shall be delivered under its own power - rail or



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Bidder Complies

Yes

No

truck freight is not acceptable. Please state the delivery cost as a separate line item on the proposal form.

"ON-LINE" SERVICE MANUAL SUPPORT

- A. As part of the standard delivery manual, the manufacturer shall give a password-protected link to the end user, allowing access to the manufacturers' database on service parts. The internet-based system shall allow the end user to access the major component supplier's service parts listing such as Hale, Waterous, Akron, etc. This shall be accomplished with simplistic point and click features on the manufacturer line item within the "stripper" or "line sheet". This will include automatic updates, printable schematics, and manufacturer's web links and is available in a commercially available format of Adobe Acrobat Reader to access these documents. The manufacturer shall submit with the proposal, a sample set of on line Adobe formatted material that has been printed from the manufacturer's website. Failure to do so will result in rejection of the proposal. Reference to "on delivery" or "at pre-build" submission is not an acceptable response for the proposal document.
B. The manuals will include cross-reference part numbers from the apparatus manufacturers' part number to the vendor parts. Example: Brand X Fire Apparatus, Hydraulic Ladder Rack, Part #WW-MN-0302 cross-referenced to Ziamatic Corporation Part 098-MN2345. This will allow for reference between individual parts and complete installation assemblies as completed by the body builder. The manuals will list all components of the vehicle that includes a vendor part utilized in a complete installation via the manufacturers "line item sheet" or "stripper" utilized to manufacture the completed vehicle. These are "As Built" and proposals with "typical" or "generic" manuals will be rejected.
C. The manufacturer shall include installation diagrams and drawings of all major sub assemblies. This will include components such as hydraulic ladder rack assemblies, pump panels, tanks, fire pumps, etc. The drawings shall be linked via an Internet based service program, in an electronic format from the manufacturers "stripper" (line item listing) of the manufacturing document. The manufacturer shall submit, with the proposal, a sample schematic. Failure to do so will result in rejection of the proposal. Reference to "on delivery" or "at pre-build" submission is not an acceptable response for the proposal document.
D. In addition to two and three-dimensional installation drawings, the manufacturer shall make accessible, via an internet based link, the actual photos of the installed components listed within the "stripper" or line sheet. This will include, but not limited to Wiring terminals, main body distribution strips, fire pump shifting, auxiliary components, etc. The manufacturer shall submit a sample of these with the proposal submission. Failure to submit the digital images with the proposal will result in rejection of the proposal. Reference to "on delivery" or "at pre-build" submission is not an acceptable response for the proposal document.
E. The manufacturers "work instructions" or "installation instructions" shall be included with the service manuals. These documents shall be accessible via a web-based link to



Utah County Fire Department, UT

Bidder
Complies

Yes

No

the individual vehicle manufactured. The work instructions shall give systematic instructions of the installation process. The manufacturer shall submit, with the proposal, a sample set of instructions. Failure to do so will result in rejection of the proposal. Reference to "on delivery" or "at pre-build" submission is not an acceptable response for the proposal document.

- F. The online manuals will include automatic updates that are accessible via the web link. When clicking on the part within the manufacturer's stripper or line sheet, it will allow the end user to access the component manufacturer website for updated information. This will allow for latest parts and service components from the individual part manufacturer or vendor.
- G. To maintain the vehicles electrical systems, the manufacturer shall provide to the purchaser the instructional manuals, complete electrical information and schematics on the vehicle. The electrical information shall be provided as follows:

Wiring Systems 12 and 120 Volt:

- Graphic symbols for electrical diagrams.
- Wire labeling, imprinting codes and index.
- Computer generated electrical schematics indicating the circuit number, wire size, switches, circuit breaker and terminals on the vehicle.

- H. The manufacturer shall submit, with the proposal, a sample set of diagrams. Failure to do so will result in rejection of the proposal. Reference to "on delivery" or "at pre-build" submission is not an acceptable response for the proposal document.

"ON-LINE" WARRANTY TRACKING SYSTEM

1. The manufacturer shall provide an online warranty tracking system which shall be used to track all service and warranty issues.
2. The tracking system will show real time information on all warranty and service requests. A user will be able to create or track the status of their service or warranty requests 24 hours a day, 7 days a week from anywhere with an internet connection.
3. The warranty / service tracking system shall be capable of tracking all service issues via truck VIN or job number.
4. The system must provide user with instant confirmation of receipt of warranty or service request and must not require user to purchase or use proprietary software.

FINANCIAL STABILITY SPECIFICATIONS

Ensuring the financial stability of the proposed contractor is a paramount consideration to Purchaser. Financial strength directly relates to the contractor's ability to successfully produce an apparatus without jeopardizing purchaser funds. In addition, financial strength is vital to Purchaser to insure that contractor will be able to provide warranty service along with replacement parts and service for the life of the apparatus. Failure to be able to provide these



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Bidder
Complies

Yes

No

lifelong services may cause future increases in maintenance expenses and create undue burden on the Purchaser's budget and tax base. This is a situation that purchaser is unwilling to risk. The contractor, therefore, shall meet certain minimum financial ratios in order to qualify for a proposal award. The financial ratios presented shall be that of the proposer; not the proposer's parent company.

The financial ratios required to be met shall be derived from the most recent audited financial statements of the proposer.

The three (3) critical financial indicators to be met are as follows:

1. **Debt-to-Equity Ratio:** The debt-to-equity ratio of the entity must not exceed a 2.0 rating. A debt-to-equity ratio is defined as that of total liabilities divided by total owner's equity. In laymen's terms, a low debt-to-equity ratio means the company itself owns a greater share of its assets, as opposed to banks, creditors and other financial institutions. Conversely, companies with high debt-to-equity ratios are those that are generally financing their growth by carrying additional debt. The cost of this debt-financing may outweigh the return that the company generates on the debt through business activities and become too much for the company to manage. This can lead to bankruptcy, which is of grave concern to this purchaser.
2. **Debt Coverage Ratio:** The debt coverage ratio of the entity must exceed a 100.0 rating. A debt coverage ratio is defined as annual net income divided by the current portion of long-term debt. A high debt coverage ratio means the company can easily meet its payment obligations with its banks and other creditors. A low debt coverage ratio clearly infers the company may struggle to meet these obligations, which could ultimately delay or cancel production of apparatus.
3. **Equity Ratio:** The equity ratio of the proposer must exceed a .30 rating. An equity ratio is defined as total owner's equity divided by total assets. The equity ratio is another good indicator of the level of leverage (or financing) used by a company. The equity ratio measures the proportion of the total assets that are financed by owners and not creditors. A high equity ratio provides the company with flexibility in financing growth and other needs.

Financial reports may be required by Purchaser to be submitted to the purchaser for evaluation prior to awarding the contract. All financial indicators required by this section must be verified by Dun and Bradstreet, the nationally-recognized, independent financial analysis company. Failure to furnish the requested financial information, if required, shall render the proposal non-responsive and the proposer dismissed from further consideration. **NO EXCEPTIONS.**

SPECIFICATIONS

SCOPE

Contractor shall provide a fully functioning firefighting apparatus constructed according to the specifications, terms and conditions outlined in this RFP and the following sections.



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Bidder
Complies

Yes No

QUALIFICATIONS

All work shall be performed by qualified personnel holding current licenses as may be required and issued by the State of Utah Division of Occupational and Professional Licensing or the licensing authority of the state where the apparatus is manufactured, with the appropriate classifications required to perform the specified work. All welding shall be performed by a certified welder.

EQUIVALENT PRODUCTS

Except where expressly stated that no substitutions will be allowed, when a particular brand name, make, or trade name is used or specified herein, it is for the purpose of designating the standard of quality, performance, dimensions, and characteristics desired and is not intended to limit or restrict competition. However, variations from the products and services specified herein must be clearly delineated in any proposal and are subject to review and approval or rejection by County.

CHASSIS

1. Base Chassis, Model 7500 SFA 4X4 with 205.00 Wheelbase, 86.10 CA, and 75.00 Axle to Frame.
2. TOW HOOK, FRONT (2) Frame Mounted
3. FRAME RAILS Heat Treated Alloy Steel (120,000 PSI Yield); 10.866" x 3.622" x 0.433" (276.0mm x 92.0mm x 11.1mm); 456.0" (11582mm) Maximum OAL
4. BUMPER, FRONT Steel, 15 Degree Swept Back, Chrome, with Headlight Provision
5. BUMPER EXTENSION, FRONT 4.0"
6. WHEELBASE RANGE 181" (460cm) Through and Including 205" (520cm)
7. AXLE, FRONT DRIVING {Meritor MX-14-120} Single Reduction, 14,000-lb Capacity
 - a. Includes: DRAIN PLUG, DRIVING FRONT AXLE Magnetic
8. SUSPENSION, FRONT, SPRING Parabolic, Taper Leaf; 12,000-lb Capacity; With Shock Absorbers,
 - a. Includes: SPRING PINS Rubber Bushings, Maintenance-Free
9. BRAKE SYSTEM, AIR Dual System for Straight Truck Applications

Includes

 - a. : BRAKE LINES Color and Size Coded Nylon
 - b. : DRAIN VALVE Twist-Type
 - c. : DUST SHIELDS, FRONT BRAKE
 - d. : DUST SHIELDS, REAR BRAKE
 - e. : GAUGE, AIR PRESSURE (2) Air 1 and Air 2 Gauges; Located in Instrument Cluster
 - f. : PARKING BRAKE CONTROL Yellow Knob, Located on Instrument Panel
 - g. : PARKING BRAKE VALVE For Truck
 - h. : QUICK RELEASE VALVE Bendix On Rear Axle for Spring Brake Release: 1 for 4x2, 2 for 6x4
 - i. : SLACK ADJUSTERS, FRONT Automatic



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**Bidder
Complies**

Yes No

- j. : SLACK ADJUSTERS, REAR Automatic
- k. : SPRING BRAKE MODULATOR VALVE R-7 for 4x2, SR-7 with relay valve for 6x4

10. DRAIN VALVE {Bendix DV-2} Automatic; With Heater; for Air Tank
Includes: DRAIN VALVE Mounted in Wet Tank

11. BRAKE SHOES, REAR Cast

12. AIR BRAKE ABS {Bendix AntiLock Brake System} Full Vehicle Wheel Control System (4-Channel)

13. AIR DRYER {Bendix AD-IP} With Heater
Includes: AIR DRYER LOCATION Outside Left Rail, Back of Cab

14. BRAKE CHAMBERS, FRONT AXLE {Haldex} 20 SqIn

15. BRAKE CHAMBERS, REAR AXLE {Haldex GC3030LHDHO} 30/30 Spring Brake
Includes: BRAKE CHAMBERS, SPRING (2) Rear Parking; WITH TRUCK BRAKES: All 4x2, 4x4; WITH TRACTOR BRAKES: All 4x2, 4x4; 6x4 & 6x6 with Rear Tandem Axles Less Than 46,000-lb. or GVWR Less Than 54,000-lb.

16. BRAKES, FRONT, AIR CAM S-Cam; 16.5" x 5.0"; Includes 20 Sq. In. Long Stroke Brake Chambers

17. BRAKES, REAR, AIR CAM S-Cam; 16.5" x 7.0"; Includes 30/30 Sq.In. Long Stroke Brake Chamber and Spring Actuated Parking Brake

18. AIR COMPRESSOR {Bendix Tru-Flo 550} 13.2 CFM Capacity

19. STEERING COLUMN Tilt and Telescopic

20. STEERING WHEEL 2-Spoke, 18" Diam., Black

21. STEERING GEAR {Sheppard M-100} Power

22. DRIVESHAFT {Dana Spicer} SPL170XL Series in lieu of SPL140

23. EXHAUST SYSTEM Single, Horizontal, After treatment Device Frame Mounted Outside Right Rail Under Cab; Includes Vertical Tail Pipe and Guard Includes: Temperature Control

24. ENGINE COMPRESSION BRAKE for MaxxFoRce I6 Engines, Electronically Activated

25. SWITCH, FOR EXHAUST 2 Position, Lighted & Latching, ON/OFF Type, Mounted in IP, Inhibits Diesel Particulate Filter Regeneration as Long as Switch is in ON Position

26. ELECTRICAL SYSTEM 12-Volt, Standard Equipment
Includes
a. : BATTERY BOX Steel with Plastic Lid



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Bidder
Complies

Yes No

- b. : DATA LINK CONNECTOR For Vehicle Programming and Diagnostics In Cab
- c. : FUSES, ELECTRICAL SAE Blade-Type
- d. : HAZARD SWITCH Push On/Push Off, Located on Top of Steering Column Cover
- e. : HEADLIGHT DIMMER SWITCH Integral with Turn Signal Lever
- f. : HEADLIGHTS (2) Sealed Beam, Round, with Chrome Plated Bezels
- g. : HORN, ELECTRIC Single
- h. : JUMP START STUD Located on Positive Terminal of Outermost Battery
- i. : PARKING LIGHT Integral with Front Turn Signal and Rear Tail Light
- j. : RUNNING LIGHT (2) Daytime, Included With Headlights
- k. : STARTER SWITCH Electric, Key Operated
- l. : STOP, TURN, TAIL & B/U LIGHTS Dual, Rear, Combination with Reflector
- m. : TURN SIGNAL SWITCH Self-Cancelling for Trucks, Manual Cancelling for Tractors, with Lane Change Feature
- n. : TURN SIGNALS, FRONT Includes Reflectors and Auxiliary Side Turn Signals, Solid State Flashers; Flush Mounted,
- o. : WINDSHIELD WIPER SWITCH 2-Speed with Wash and Intermittent Feature (5 Pre-Set Delays), Integral with Turn Signal Lever
- p. : WINDSHIELD WIPERS Single Motor, Electric, Cowl Mounted
- q. : WIRING, CHASSIS Color Coded and Continuously Numbered

27. CIGAR LIGHTER Includes Ash Cup

28. HORN, ELECTRIC (2)

29. IGNITION SWITCH Keyless

30. ALTERNATOR {Leece-Neville 14931PAH} Brush Type, 12 Volt 320 Amp. Capacity, Pad Mounted

31. BODY BUILDER WIRING To Rear of Frame, With Stop, Tail, Turn, and Marker Lights Circuits, Ignition Controlled Auxiliary Feed and Ground, Less Trailer Socket

32. BDY INTG, I/O EXPANSION HARNESS {for Diamond Logic Builder} In-Cab wire harness (DLB) program only, Includes a harness with five blunt cut wires routed on lower left of instrument panel. Two ground active inputs and two (.5Amp) relay drivers outputs are provided

33. BATTERY SYSTEM {International} Maintenance-Free, (3) 12-Volt 1950CCA Total

34. RADIO {International} AM/FM Premium Stereo with CD Player, Weatherband, Clock, Front & Rear Auxiliary Input, USB Port, and Multiple Speakers, Includes iPod Command and Control. Includes

a. : SPEAKERS IN CAB (2) Coaxial with Deluxe Interior

b. : SPEAKERS IN CAB (4) Coaxial with Premium Interior

35. DATA RECORDER Includes Display Mounted in Overhead Console

36. HORN, AIR Black, Single Trumpet, Air Solenoid Operated

37. BATTERY DISCONNECT SWITCH {Joseph Pollak 51-315} Positive Type, Lever Operated, Cab Mounted



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**Bidder
Complies**

Yes No

- 38. SWITCH, AIR HORN, PASSENGER Fire Truck Application; Momentary Switch Located in Instrument Panel Close to Passenger, Driver Also To Activate Switch at Steering Wheel
- 39. HEADLIGHTS Long Life Halogen; for Two Light System
- 40. STARTING MOTOR {Delco Remy 38MT Type 300} 12 Volt; less Thermal Over-Crank Protection
- 41. COURTESY LIGHT (4) Mounted In Front & Rear Map Pocket Left and Right Side
- 42. INDICATOR, LOW COOLANT LEVEL with Audible Alarm
- 43. INDICATOR, BATTERY WARNING Green BATTERY ON Indicator, Mounted on Left Side of Instrument Panel, To be Used with Factory Installed or Customer Mounted Battery Disconnect Switch
- 44. CIRCUIT BREAKERS Manual-Reset (Main Panel) SAE Type III with Trip Indicators, Replaces All Fuses Except For 5-Amp Fuses
- 45. FENDER EXTENSIONS Rubber
- 46. GRILLE Stationary, Chrome
- 47. GRILLE EMBER SCREEN Mounted to Grille to Keep Hot Embers out of Engine Air Intake System
- 48. FRONT END Tilting, Fiberglass, With Three Piece Construction; for 2007 & 2010 Emissions
- 49. PAINT SCHEMATIC, PT-1 Single Color, Design 100.
Includes
 - a): PAINT SCHEMATIC ID LETTERS "GM"
 - b) :PAINT IDENTITY, PT-2 Single Color, Instruction No. 932. Wheels
 - c) :PAINT TYPE Base Coat/Clear Coat, 1-2 Tone
 - d) :PAINT CLASS Single Custom Color
- 50. KEYS - ALL ALIKE, ID Z-001
- 51. CLUTCH Omit Item (Clutch & Control)
- 52. OIL FILTER, ENGINE {Hudgins Model 960 Spinner}
- 53. ENGINE, DIESEL {MaxxForce 10} EPA 10, 330 HP @ 2000 RPM, 1150 lb-ft Torque @ 1200 RPM, 2200 RPM Governed Speed
Includes
 - a. : AIR COMPRESSOR AIR SUPPLY LINE Naturally-Aspirated (Air Brake Chassis Only)



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**Bidder
Complies**

Yes No

- b. : ANTI-FREEZE Red Shell Rotella Extended Life Coolant; -40 Degrees F; for MaxxForce Engines
- c. : COLD STARTING EQUIPMENT Intake Manifold Electric Grid Heater with Engine ECM Control
- d. : CRUISE CONTROL Electronic; Controls Integral to Steering Wheel
- e. : ENGINE OIL DRAIN PLUG Magnetic
- f. : ENGINE SHUTDOWN Electric, Key Operated
- g. : FUEL FILTER Included with Fuel/Water Separator
- h. : FUEL/WATER SEPARATOR Fuel/Water Separator and Fuel Filter in a Single Assembly; With Water-in-Fuel Sensor; Engine Mounted
- i. : GOVERNOR Electronic
- j. : OIL FILTER, ENGINE Spin-On Type
- k. : WET TYPE CYLINDER SLEEVES

54. FAN DRIVE {Horton Drivemaster Polar Extreme} Direct Drive Type, Two Speed, With Residual Torque Device for Disengaged Fan Speed
Includes: FAN Nylon

55. RADIATOR Aluminum, Front to Back Cross Flow, Series System; 1663 SqIn Core and 885 SqIn Charge Air Cooler and 470 SqIn Low Temperature Radiator Down Flow
Includes

- a. : DEAERATION SYSTEM with Surge Tank
- b. : HOSE CLAMPS, RADIATOR HOSES Gates Shrink Band Type; Thermoplastic Coolant Hose Clamps
- c. : RADIATOR HOSES Premium, Rubber

56. FEDERAL EMISSIONS for 2010; MaxxForce 9 & 10 Engines

57. AIR CLEANER Single Element
Includes: GAUGE, AIR CLEANER RESTRICTION Air Cleaner Mounted

58. THROTTLE, HAND CONTROL Engine Speed Control for PTO; Electronic, Stationary Pre-Set, Two Speed Settings; Mounted on Steering Wheel

59. ENGINE CONTROL, REMOTE MOUNTED Provision for; Includes Wiring for Body Builder Installation of PTO Controls; With Ignition Switch Control for MaxxForce post 2007 Emissions Electronic Engines

60. ENGINE WATER COOLER {Sen-Dure} Auxiliary, For Use with Fire Trucks

61. EMISSION COMPLIANCE Engine Shutdown System Exempt Vehicles, Complies With California Clean Air Regulations

62. TRANSMISSION, AUTOMATIC {Allison 3000EVS_P} 4th Generation Controls; Close Ratio, 5-Speed; With Overdrive, Includes Oil Level Sensor, With Provision for PTO, Less Retarder, Max. GVW N/A
Includes

- a. : OIL FILTER, TRANSMISSION Mounted on Transmission



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**Bidder
Complies**

Yes No

b. : TRANSMISSION OIL PAN Magnet in Oil Pan

63. TRANSFER CASE {Meritor T-4210 2} 2 Spd, 10000 lb-ft Total Capacity, Without Provision for PTO, With Electric Over Air Control
Includes: LIGHT, INDIC, ALL-WHEEL DRIVE Illuminates with All Wheel Drive Engaged, Located on Instrument Panel

64. OIL COOLER, AUTO TRANSMISSION {Modine} Water to Oil, for Allison or CEEMAT Transmission

65. TRANSMISSION SHIFT CONTROL {Allison} Push-Button Type; for Allison 3000 & 4000 Series Transmission

66. TRANSFER CASE LUBE {EmGard 50W} Synthetic; 1 thru 14.99 Pints

67. OIL COOLER, TRANSFER CASE Remote Mounted Back of Cab

68. TRANSMISSION OIL Synthetic; 29 thru 42 Pints

69. ALLISON SPARE INPUT/OUTPUT for Emergency Vehicle Series (EVS); 127/198 Includes J1939 Based Auto Neutral: Fire/Pumper, Tank, Aerial/Ladder

70. SHIFT CONTROL PARAMETERS Allison Performance Programming in Primary and Allison Economy Programming in Secondary

71. AXLE, REAR, SINGLE {Dana Spicer S26-190} Single Reduction, 26,000-lb Capacity, R Wheel Ends. Gear Ratio: 5.57
Includes: REAR AXLE DRAIN PLUG (1) Magnetic, For Single Rear Axle

72. SUSPENSION, RR, SPRING, SINGLE Vari-Rate; 31,000-lb Capacity, With 4500 lb Auxiliary Rubber Spring

73. FUEL/WATER SEPARATOR with Filter Restriction/Change Indicator, Includes Standard Equipment Water-in-Fuel Sensor

74. FUEL TANK Top Draw; D Style, Non Polished Aluminum, 50 U.S. Gal., 189 L Capacity, 16" Tank Depth, With Quick Connect Outlet, Mounted Left Side, Under Cab

75. CAB Conventional 6-Man Crew Cab

Includes

a): ARM REST (2) Molded Plastic; One Each Door

b) : CLEARANCE/MARKER LIGHTS (5) Flush Mounted

c) : COAT HOOK, CAB Located on Rear Wall, Centered Above Rear Window

d) : CUP HOLDERS Two Cup Holders, Located in Lower Center of Instrument Panel

e) : DOME LIGHT, CAB Rectangular, Door Activated and Push On-Off at Light Lens, Timed Theater Dimming, Integral to Console, Center Mounted

f) : GLASS, ALL WINDOWS Tinted

g) : GRAB HANDLE, CAB INTERIOR (1) "A" Pillar Mounted, Passenger Side

h) : GRAB HANDLE, CAB INTERIOR (2) Front of "B" Pillar Mounted, One Each Side



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**Bidder
Complies**

Yes No

- i) : GRAB HANDLE, CAB INTERIOR (4) Two Each Side, Rear Door Mounted at Hinge Side and "C" Pillar Mounted
- j) : INTERIOR SHEET METAL Upper Door (Above Window Ledge) Painted Exterior Color
- k) : STEP (8) Two Steps Per Door

76. GAUGE CLUSTER English with English Electronic Speedometer
Includes

- a): GAUGE CLUSTER (6) Engine Oil Pressure (Electronic), Water Temperature (Electronic), Fuel (Electronic), Tachometer (Electronic), Voltmeter, Washer Fluid Level
- b) : ODOMETER DISPLAY, Miles, Trip Miles, Engine Hours, Trip Hours, Fault Code Readout
- c): WARNING SYSTEM Low Fuel, Low Oil Pressure, High Engine Coolant Temp, and Low Battery Voltage (Visual and Audible)

77. SEATBELT WARNING PREWIRE Includes Seat Belt Switches and Seat Sensors for all Belted Positions in the Cab and a Harness Routed to the Center of the Dash for the Aftermarket Installation of the Data Recorder and Seatbelt Indicator Systems, for 4 to 6 Seat Belts

78. GAUGE, OIL TEMP, ALLISON TRAN

79. GAUGE, AIR CLEANER RESTRICTION {Filter-Minder} with Black Bezel Mounted in Instrument Panel

80. IP CLUSTER DISPLAY On Board Diagnostics Display of Fault Codes in Gauge Cluster

81. SEAT, DRIVER {Seats, Inc. Universal Series} 911, NFPA Compliant, Air Suspension, High Back Vinyl with Covered Back and International Logo on Head Rest
Includes: SEAT BELT 3-Point, Lap and Shoulder Belt Type

82. SEAT, REAR {National 2000} Three Individual Seats, NFPA Complaint, Air Suspension, High Back, Vinyl, Isolator, with 2 Position Front Cushion Adjustment, -3 to + 14 Degree Seat Back Adjustment, Lumbar, with 18" Wide Cushion and 20" Seat Back
Includes: SEAT BELT (3) Two 3-Point Shoulder Belts for Driver and Outer Passenger and One 2-Point Lap Belt for Center Passenger

83. SEAT, PASSENGER {National 2000} NFPA Complaint, Air Suspension, High Back With Integral headrest, Vinyl, Isolator, 1 Chamber Lumbar, 2 Position Front Cushion Adjustment, -3 to + 14 Degree Back Angle Adjust
Includes: SEAT BELT 3-Point, Lap and Shoulder Belt Type

84. GRAB HANDLE (2) Chrome Towel Bar Type With Anti-Slip Rubber Inserts; for Cab Entry, Mounted Left and Right, Each Side at "B" Pillar

85. GRAB HANDLE, ADDITIONAL EXT (2) Chrome: Towel Bar Type with Anti-Slip Rubber Inserts; Mounted Left and Right Side on Exterior, Rear of Rear Doors, With Crew Cab



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**Bidder
Complies**

Yes

No

86. MIRRORS (2) {Lang Mekra} Styled; Rectangular, 7.09" x 15.75" & Integral Convex Both Sides, 102" Inside Spacing, Breakaway Type, Heated Heads Thermostatically Controlled, Power Both Sides, Clearance Lights LED, Bright Finish Heads & Brackets

87. SEAT BELT All Red; 4 to 6

88. AIR CONDITIONER {Blend-Air} With Integral Heater & Defroster

Includes

- a): HEATER HOSES Premium (EPDM)
- b) : HOSE CLAMPS, HEATER HOSE Mubea Constant Tension Clamps
- c): REFRIGERANT Hydrofluorocarbon HFC-134A

89. INSTRUMENT PANEL Center Section, Flat Panel

90. HVAC FRESH AIR FILTER

91. STORAGE POCKET, DOOR Molded Plastic, Full Width; Mounted on Passenger Door

92. FRESH AIR FILTER Attached to Air Intake Cover on Cowl Tray in Front of Windshield Under Hood

93. CAB INTERIOR TRIM Deluxe; for Crew Cab

Includes

- a) : "A" PILLAR COVER Molded Plastic
- b) : CAB INTERIOR TRIM PANELS Cloth Covered Molded Plastic, Full Height; All Exposed Interior Sheet Metal is covered Except for the Following: with a Two-Man Passenger Seat or with a Full Bench Seat the Back Panel is Completely Void of Covering
- c) : CONSOLE, OVERHEAD Molded Plastic; With Dual Storage Pockets with Retainer Nets and CB Radio Pocket
- d) : DOOR TRIM PANELS Molded Plastic; Driver and Passenger Doors
- e) : FLOOR COVERING Rubber, Black
- f) : HEADLINER Soft Padded Cloth
- g) : INSTRUMENT PANEL TRIM Molded Plastic with Black Center Section
- h) : STORAGE POCKET, DOOR (1) Molded Plastic, Full-Length; Driver Door
- i) : SUN VISOR (2) Padded Vinyl with Driver Side Toll Ticket Strap, Integral to Console

94. CAB REAR SUSPENSION Air Bag Type

95. WHEELS, FRONT DISC; 22.5" Polished Aluminum, 2 Hand Hole, 10-Stud (285.75MM BC) Hub Piloted, Flanged Nut, Metric Mount, 8.25 DC Rims; With Steel Hubs
Includes: PAINT IDENTITY, FRONT WHEELS White

96. WHEELS, REAR DUAL DISC; 22.5" Polished Aluminum, 2 Hand Hole, 10-Stud (285.75MM BC) Hub Piloted, Flanged Nut, Metric Mount, 8.25 DC Rims; With Steel Hubs
Includes: PAINT IDENTITY, REAR WHEELS White

97. (2) TIRE, FRONT 12R22.5 G622 RSD (GOODYEAR) 482 rev/mile, load range G, 16 ply



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Bidder
Complies

Yes No

98. (4) TIRE, REAR 12R22.5 G622 MSD (GOODYEAR) 498 rev/mile, load range H, 16 ply

CHASSIS ADDITIONS SPECIFICATIONS AND REQUIREMENTS

INTERNATIONAL CHASSIS

An International 4-door cabin chassis per the attached specifications shall be furnished by contractor:

DATA LABEL

A. HEIGHT LENGTH & WEIGHT

A highly visible label indicating the overall height, length, and weight of the vehicle shall be installed in the cab dash area.

B. CAB SEATING POSITION LIMITS

The label shall also include the seating positions for firefighters. A weight allowance of 250 pounds for each shall be factored into the gross vehicle weight rating of the chassis.

C. NO RIDE LABEL

One (1) "NO RIDERS" label shall be applied on the vehicle at the rear step area or other applicable areas. The label shall warn personnel that riding in or on these areas, while the vehicle is in motion is prohibited.

D. HELMET WARNING TAG

One (1) label shall be installed in the cab, visible from each seating position. The label shall read "CAUTION: DO NOT WEAR HELMET WHILE SEATED." Helmets must be properly stowed while the vehicle is in motion according to the current edition of NFPA 1901.

REAR TOWING PROVISIONS

A. There shall be two tow eyes furnished under the rear of the body and attached directly to each chassis frame rail. There shall be a reinforcement spreader bar connecting the two tow eyes. Tow eyes are to be constructed of 3/8" plate steel with a 4" I.D. hole, large enough for passing through a tow chain end hook.

B. The tow plates shall be painted black.

C. A receiver style rear hitch shall be center mounted in the rear bumper or body area and have a minimum towing capacity of 18,000 lbs and 4,000 lbs tongue weight. The hitch shall include an adjustable height pintle hook mount, pintle hook and receiver lock pin. Further details regarding hitch requirements will be provided at the pre-construction conference.

BUMPER EXTENSION

A. The chassis frame shall be extended 21" with reinforced steel angle and structural channel by the body builder. The extension shall be designed to support the bumper and other equipment to be installed.

B. The front bumper shall also include a heavy duty brush guard.



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**Bidder
Complies**

Yes No

C. The front bumper shall have a full width deadlay capable of holding 200 feet of purchaser supplied DJ fire hose. The hose shall be secured with a vinyl cover and end flaps.

FRONT BUMPER GRAVELSHIELD

A 21" front to rear filler panel constructed from NFPA compliant, slip resistant aluminum tread plate shall be provided on the front chassis frame extension. The extension shall be covered on the top and sides, up to the level of front bumper and shall be reinforced to support one (1) firefighter (approximately 250 pounds) and the equipment specified to be installed.

TIRE PRESSURE INDICATOR

There shall be a tire pressure indicator at each tire's valve stem on the vehicle that shall indicate if there is insufficient pressure in the specific tire.

VERTICAL EXHAUST SYSTEM

The vertical exhaust system shall be supplied with the commercial chassis.

REAR MUD FLAPS

One (1) pair of black mud flaps shall be installed behind the rear wheels.

CAB STEPS

The driver's side cab step area on the 4 door chassis shall be covered with slip resistant aluminum tread plate for compliance to applicable NFPA standards.

CAB STEPS

The passenger's side cab step area on the 4 door chassis shall be covered with slip resistant aluminum tread plate for compliance to applicable NFPA standards.

FRONT BRUSH GUARD

The front bumper shall also include a heavy duty brush guard.

PUMP AND PLUMBING SPECIFICATIONS AND REQUIREMENTS

AUXILIARY FIRE PUMP SPECIFICATIONS

A Darley portable pump model number 2-1/2AGE26LD shall be provided. The high pressure, medium volume pump shall meet the following performance requirements:

- 300GPM @ 80 PSI
- 100GPM @ 180PSI
- 50GPM @ 190 PSI

Pump to be mounted in the hosebed.

One (1) 2-1/2" Noshok discharge pressure gauges (30"-0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.



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Complies

Yes

No

PUMP CONSTRUCTION

The pump shall be constructed with high strength aluminum alloy casing and discharge valve, aluminum alloy gear case and engine adapter, bronze impeller and wear rings, stainless steel impeller shaft, injection style packing, heat treated alloy steel helical gear and ball bearing construction.

PUMP PACKING

The plunger injection packing glands shall have the ability to be repacked in less than 10 minutes and feature a long wearing ceramic coating to minimize friction and power loss. Plastallic injected packing supplied through an external supply cylinder shall allow for equalized pressure around the pump shaft and minimize friction.

ENGINE SPECIFICATION

The pump shall be powered by a 26 horsepower, two cylinder air cooled Lombardini diesel engine. The engine shall have a spin on oil filter, dry element air cleaner, manual compression release, 12 volt electric starter, 11-1/2 amp alternator and fuel pump.

The pump shall have dimensions of 35" long x 24" wide x 24" high and a weight of 330 pounds.

WARRANTY

The pump shall carry a three (3) year parts replacement warranty.

FUEL SYSTEM

The fuel system for the auxiliary fire pump shall be plumbed to the chassis fuel system. There shall be a separate fuel pickup tube mounted in the chassis fuel tank specifically for a separate engine driven pump assembly.

There shall be an electric fuel pump and fuel hose furnished between the chassis fuel tank and the auxiliary pump.

ELECTRIC START SYSTEM FOR AUXILIARY FIRE PUMP

The electric start system for the auxiliary fire pump shall be connected to the chassis electrical system. There shall be an on/off switch and push to start switch located near the pump operator's position.

AUXILIARY AND MAIN FIRE PUMP PLUMBING

The auxiliary fire pump shall be plumbed to the main pump discharge manifold. There shall be a one-way check valve installed in the discharge lines from fire pump discharge manifold.

ENGINE THROTTLE

A manually operated vernier engine control throttle shall be installed for the pump engine. The throttle shall be furnished on the pump operator's control panel. There shall be an engraved identification label provided to read "THROTTLE".

The controls for the aux. pump shall be in the cab center mounted console.



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Yes

No

WATER TANK TO PUMP LINE

One (1) 2-1/2" water tank to fire pump line shall be provided with a full flow quarter turn ball valve, 2-1/2" piping, flex hose and stainless steel hose clamps. The valve control shall be accessible from the pump operation area and equipped with a nameplate on the handle.

1000 GALLON PTO DRIVEN PUMP

DARLEY PSP SINGLE STAGE REAR MOUNT PUMP

A Darley model PSP single stage, centrifugal, rear mounted PTO driven fire pump shall be provided and installed.

Power to drive the pump shall be provided by the same engine used to propel the apparatus. The pump shall be rear mounted and designed to operate through a PTO. The pump is to be placed in gear from the chassis cab. Pump shift to be clearly labeled. The PTO and gear ratios are to be selected so as to provide good pump performance.

Pump casing shall be of ductile iron vertically split, with a minimum tensile strength of 65,000 PSI - bronze-fitted.

PUMP SHAFT

Pump shaft to be precision-ground stainless steel with long-wearing chromium hard coating under the packing glands with a hardness level of Rockwell C72. The pump shaft shall be splined to receive broached impeller hubs, for greater resistance to wear, torsion vibration, and torque imposed by engine, as well as ease of maintenance and repair

The bearings shall be heavy duty, deep groove, and radial-type ball bearings oversized for long life. Sleeve bearings on any portion of the pump or transmission shall be prohibited due to wear, deflection, and alignment concerns. Bearings to be protected at all openings from road dirt and water splash with oil seals and water slingers.

IMPELLOR

The impellers shall be high-strength bronze alloy of mixed flow design, splined to the pump shaft for precision fit, durability, and ease of maintenance. Impeller shall be vacuum cast designed for maximum lift and highest capacity. The seal rings shall be renewable, double labyrinth, wrap around bronze type.

Impeller shaft oil seals shall be constructed to be free from steel components except for the internal lip spring. The impeller shaft oil seals shall carry a lifetime warranty against damage from corrosion from water and other fire-fighting fluids.

PUMP TRANSMISSION

The pump transmission case shall be heavy duty cast iron. A magnetic drain plug shall be provided. Transmission case interior shall be powder coated to reduce oil contamination.



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Complies

Yes No

Gears shall be helical in design and precision ground for quiet operation and extended life. Gears to be cut from high strength alloy steel, ground, and carburized. Chain drive and/or design requiring extra lubricating pump is not acceptable. Pump drive shaft shall be precision-ground, heat-treated alloy steel-minimum 1-1/2" x 10-spline ends.

DRIVELINE INSTALLATION

The pump drivelines shall be sized for intended application and torque requirements. The installation shall comply with driveline manufacturer's guidelines.

The rear mounted PTO fire pump shall be installed and shall include installation of the fire pump, modification and/or fabrication of new drivelines and all pump-mounting brackets. The PTO drive shaft(s) shall be spin balanced prior to final installation.

MANUALS

Two (2) manuals covering the fire pump and pump transmission shall be provided with the apparatus.

1000 GPM FIRE PUMP SPECIFICATIONS

The centrifugal type fire pump shall be a Darley model PSP rear mounted with a rated capacity of 1000 GPM. The pump shall meet NFPA 1901 requirements.

The pump shall be certified to meet the following deliveries:

- 1000 GPM @ 150 PSI
- 1000 GPM @ 165 PSI
- 700 GPM @ 200 PSI
- 500 GPM @ 250 PSI

REAR CENTER 5" UNGATED INTAKE

- A. One (1) 5" un gated suction intake shall be installed on the rear center to supply the fire pump from an external water supply. The intake shall be provided with a removable screen and 5" NH male threads.
- B. One (1) 5" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped with long handles.

MECHANICAL SEAL SPECIFICATIONS

The mechanical seal shall use silicon carbide mechanical seals with welded springs. The stationary face of the mechanical seals shall be made from silicon carbide, an extremely hard and heat dissipative material, which resists wear and dry running damage.

PTO PUMP SHIFT SPECIFICATIONS PUMP AND ROLL

An electric powered PTO pump shift shall be installed in the cab driver's area where not subject to accidental engagement. The pump shift system shall permit "pump and roll" operations, as well as stationary pumping operations.



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Complies

Yes

No

The following indicator lights shall be included with pump shift.

- a) A green indicator light, labeled "PUMP ENGAGED" shall indicate pump shift has successfully been completed.
- b) A green indicator light, labeled "OK TO PUMP" shall indicate the chassis transmission is in proper gear and parking brake is engaged.
- c) Pump shift and interlocks shall comply with applicable sections of NFPA standards.
- d) The pump shift shall have an instruction label and nameplate to indicate proper pump shift instructions.

ELECTRIC PRIMER SPECIFICATIONS

- A. A 12 volt electrically driven positive displacement fire pump primer system shall be installed. The priming pump shall be constructed of heat treated aluminum and hard coat anodized and shall not use oil in the operation. The system shall perform in compliance to applicable NFPA standards.
- B. A single, push-pull control shall be located on the pump operator's panel with a "Pull to Prime - Push to Close" label.

ENGINE/PUMP GOVERNOR

Apparatus shall be equipped with a Class1 "Total Pressure Governor" (TPG) that is connected to the Electronic Control Module (ECM) mounted on the engine. The "TPG" will operate as a pressure sensor (regulating) governor (PSG) utilizing the engines J1939 data for optimal resolution and response when supported by the engine manufacturer. If J-1939 engine control is not supported, then analog remote throttle control shall be provided by the TPG.

The TPG shall utilize control algorithms that minimize pressure spikes during low or erratic water supply situations. The TPG shall be backwards compatible to any engine that supplies J1939 RPM, Temperature and Oil Pressure information providing the ability to maintain a consistent fleet fire-fighting capability and reduce operator cross training and confusion.

The TPG shall have the ability to use either a 300 PSI or a 600 PSI transducer for best operation. PSG system diagnostics shall be built in and accessible by technicians. Programmable presets for RPM and Pressure settings shall be easily configurable. The straightforward menu structure shall allow the "TPG" configuration to match existing apparatus operation as closely as possible.

The "TPG" shall also include indication of engine RPM, system voltage, engine oil pressure and engine temperature with audible alarm output for all. The "TPG" uses the J1939 data bus for engine information, requiring no additional sensors to be installed. The TPG shall use J1939 broadcast warnings for the alarm as a standard and allow the "user" to select warning values if "SOPs" dictate.



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Complies

Yes No

PUMP ANODES

There shall be sacrificial, zinc anodes in the pump steamer ports which shall protect the pump and piping from electrolysis. These anodes shall also act as screens.

PUMP PLUMBING SYSTEM

The fire pump plumbing system shall be of rigid Schedule 40 galvanized piping/brass or flexible piping with stainless steel fittings. Mechanical grooved couplings shall be installed, where necessary, to permit flexing of the plumbing system and allow for quick removal of piping or valves for service. Flexible hose couplings shall be threaded stainless steel or mechanical grooved coupling connections.

The fire pump and plumbing shall be hydrostatically tested in compliance to applicable sections of NFPA standards. The test results shall be included in the delivery documentation.

FIRE PUMP MASTER DRAIN

The fire pump plumbing system and fire pump shall be piped to a single push-pull type master pump drain assembly.

ADDITIONAL LOW POINT DRAINS

The plumbing system shall be equipped with additional low point manually operated drain valves to allow total draining of the fire pump plumbing system. These valves shall be accessible from the side of the vehicle and labeled.

HOT-DIP GALVANIZED INTAKE MANIFOLD

The suction and intake manifold for the pedestal pump shall be fabricated from heavy-duty tubular steel. The suction manifold shall have radiused sweep elbows to minimize water turbulence into the suction volute. The suction manifold shall be welded and pressure tested prior to the galvanizing process. After testing the entire suction manifold shall be hot-dip galvanized to minimize corrosion. The hot-dip galvanized suction manifold shall be attached to the pump intake volute with a heavy-duty, flexible Victaulic coupling.

The hot-dip galvanized manifold assembly shall have a ten (10) year warranty.

HOT DIP GALVANIZED DISCHARGE MANIFOLD

The discharge manifold shall be fabricated from heavy-duty tubular steel. The discharge manifold shall be fabricated, welded, all fittings attached and pressure tested prior to the galvanizing process. After testing the entire discharge manifold shall be hot dip galvanized to minimize corrosion. The hot dip galvanized discharge manifold assembly shall be bolted to the pump and have stabilizer arms attached to reinforce the discharge manifold.

The hot dip galvanized manifold assembly shall have a ten (10) year warranty.

FIRE PUMP & PLUMBING SYSTEM PAINTING

The fire pump and plumbing system shall be painted by the fire apparatus manufacturer. The fire pump and the plumbing shall be painted metallic silver.



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**Bidder
Complies**

Yes No

HOSE THREADS

The hose threads shall be National Standard Thread (NST) on all base threads on the apparatus intakes and discharges.

WATER TANK TO PUMP LINE

One (1) 3" water tank to the rear mounted fire pump line shall be provided with a full flow quarter turn ball valve, 4" piping, and with flex hose and stainless steel hose clamps. The tank to pump line shall be equipped with a check valve to prevent pressurization of the water tank.

The line shall be flow tested during the fire pump testing and shall meet applicable requirements of NFPA standards.

The specified valve shall be an Akron 8000 Series three-inch (3") valve with a stainless ball.

One (1) Akron valve equipped with a manually operated pull rod, with quarter turn locking feature shall be provided on the specified intake. The handle shall be equipped with color coded engraved type name plate.

FIRE PUMP TO WATER TANK FILL LINE

One (1) 2" fire pump to water tank refill and pump bypass cooler line shall be provided. The valve shall be a full flow quarter turn ball valve with 2" piping and flex hose to tank. The valve control handle shall have a nameplate located near the valve control.

The specified valve shall be an Akron 8000 Series two-inch (2") valve with a stainless ball.

The specified intake valve shall be equipped with one (1) manually operated swing type manual control located adjacent the intake. The valve shall be equipped with a color coded engraved type name plate.

UNDERWRITERS LABORATORIES FIRE PUMP TEST

The pump shall undergo an Underwriters Laboratories Incorporated test per applicable sections of NFPA standards, prior to delivery of the completed apparatus.

The UL acceptance certificate shall be furnished with the apparatus on delivery.

FIRE PUMP TEST LABEL

A fire pump performance and rating label shall be installed on the fire apparatus pump panel. The label shall denote levels of pump performance and testing completed at factory. These shall include GPM at net pump pressure, RPM at such level, and other pertinent data as required by applicable NFPA standards. In addition, the pressure control device, tank to pump flow tests, and other required testing shall be completed.

In addition, the entire pump, suction and discharge passages shall be hydrostatically tested to a pressure as required by applicable NFPA standards. The pump shall be fully tested at the pump manufacturer's factory to the performance specifications as outlined by applicable NFPA standards. Pump shall be free from objectionable pulsation and vibration.



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Complies

Yes No

If applicable, the fire pump shall be tested and rated as follows:

- 100% of rated capacity at 150 pounds net pressure.
- 70% of rated capacity at 200 pounds net pressure.
- 50% of rated capacity at 250 pounds net pressure.
- 100% of rated capacity at 165 pounds net pressure.

INTAKE RELIEF/DUMP VALVE

One (1) TFT A18 series, 2-1/2" intake relief/dump valve preset at 125 psi shall be permanently installed on the suction side of the fire pump. The valve shall have an adjustment range of 75 psi to 250 psi, and shall be designed to automatically self-restore to a non-relieving position when excessive pressure is no longer present.

Discharge side of the intake relief valve shall be plumbed away from the pump operator.

FIRE PUMP COOLING

The fire pump shall be equipped with 3/8" cooling line from the pump to the water tank. This re-circulation line shall be controlled by a pump panel control valve with nameplate label noting it as the "fire pump bypass cooler". There shall be a check valve installed in the pump cooler line to prevent tank water from back flowing into the pump when it is not in use.

CHASSIS ENGINE HEAT EXCHANGER COOLING SYSTEM

The apparatus shall be equipped with a heat exchanger for supplementary chassis engine cooling during fire pump operations. A manually opened valve, mounted at the operator's panel, shall direct water from the fire pump to the heat exchanger that is mounted in the engine radiator cooling hose. The system shall provide cooling water from the fire pump to circulate around the engine radiator coolant without mixing or coming in direct contact with the engine coolant. The unit shall be installed by the chassis manufacturer and connected to the plumbing system by the fire apparatus manufacturer.

A nameplate label shall be installed on the pump panel noting "engine cooling system" with "on-off" opening directions noted.

REAR LEFT SIDE 2-1/2" GATED INTAKE

One (1) 2-1/2" gated suction intake shall be installed on rear left side of apparatus to supply the fire pump from an external water supply. The control valve shall be a quarter turn ball valve and shall have 2-1/2" NST female thread of brass, chrome plated, or stainless steel material. The intake shall be provided with a removable screen and equipped with a 3/4" drain and bleeder valve, controlled at the base of the pump panel or rear panel of apparatus.

One (1) 2-1/2" chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain or cable securement.

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a



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Complies

Yes No

stainless ball.

The specified intake valve shall be equipped with one (1) manually operated swing type manual control located adjacent the intake. The valve shall be equipped with a color coded engraved type name plate.

COMPRESSED AIR FOAM SYSTEM

PNEUMAX COMPRESSED AIR FOAM SYSTEM

One (1) Pneumax Model 140-SP CAFSystem™ shall be installed to provide compressed air foam. It shall be capable of providing foam solution or compressed air foam from any of the specified CAFS discharges simultaneously. In addition, the consistency of the compressed air foam (expansion ratio) shall be individually adjustable to each discharge outlet.

AIR COMPRESSOR SYSTEM

- A. The compressor shall be driven by the chassis engine, utilizing a "Hot Shift" transmission PTO. The air compressor shall be an oil flooded rotary screw type, with the system designed to supply a minimum of 140 SCFM of free air at maximum CAFS operating RPM. The compressor shall incorporate an integral gear box with oil lubricated helical gears. The gear ratio shall be approximately 3:1 over the input shaft speed. The air compressor drive system shall be designed to operate the air end at maximum RPM when the water pump is developing 130 to 140 PSI in a "no flow" state. The completed compressor system shall be capable of maintaining prolonged pressures from 100 to 175 lbs. per square inch throughout its service life.
- B. The compressor shall be controlled by a pneumatic modulating inlet valve mounted on the air end inlet. This control shall sense air pressure and control the air delivery of the air end while maintaining constant pressure. An Auto Sync balancing system shall be provided to maintain the air pressure within plus or minus 5% of the water pump pressure, throughout the pressure range. Auto Sync controls shall be installed on the pump operator's panel with the following modes:
 - 1. AUTOMATIC: Air pressure matched to water pump pressure.
 - 2. FIXED: Air pressure defaults to manual setting on compressor mounted control valve.
 - 3. UNLOADED: Air pressure reduced to 40 PSI for standby operations.
- C. All oil and control air shall be routed in wire braided hose conforming to SAE 100R1 standards for hydraulic hose. The compressor system sump/pressure vessel shall be constructed entirely of stainless steel and in compliance with the requirements of the ASME Boiler and Pressure Vessel Code. The sump/pressure vessel shall be equipped with an oil level sight glass, drain valve, air pressure relief valve and 1.5" threaded brass oil fill cap.
- D. The air compressor system shall feature a spin-on, full flow oil filter unit and a thermostatic valve to control oil flow to the cooler. This thermostat shall maintain the system oil temperature within 160 to 225 degrees Fahrenheit range.



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Yes

No

- E. A modular air/oil separator unit with spin-on element shall be provided and installed in close proximity to the sump. Replacement elements for the oil filter and separator shall be readily available.
- F. The compressor shall be cooled by the apparatus fire pump, utilizing an all copper and brass shell and tube heat exchanger. Water will flow through the heat exchanger whenever the fire pump is operating. An in-line strainer shall be installed on the water inlet side of the heat exchanger to prevent clogging. The strainer shall be removable for cleaning. The compressor cooling system shall be capable of maintaining recommended operating temperatures throughout its full operating range at ambient temperatures up to 115 degrees Fahrenheit. A "fail safe" switch shall be provided to preclude engagement of the compressor PTO unless the fire pump is engaged.

PLUMBING

- A. A foam manifold with minimum 600 GPM flow capacity and an integral paddlewheel flow sensor shall be installed by the apparatus manufacture to distribute foam solution to the designated foam discharges. A check valve is provided at the inlet end of the foam manifold to prevent foam solution back-flow into the pump. All added foam discharge piping shall be stainless steel or high pressure wire braided reinforced hose with stainless steel fittings.
- B. Each compressed air foam discharge shall be equipped with individual corrosion resistant check valves on both the water and compressed air plumbing that prevent back-flow of foam solution, air and/or compressed air foam into the pump, air lines or foam proportioning system.
- C. All components of the piping system exposed to pressurized air from the CAFS shall be designed for at least 500 PSIG burst pressure.

INSTRUMENTS AND CONTROLS

- A. The following CAFS controls and instruments shall be provided on the pump operator's panel, arranged in a logical and operator friendly manner:
 - 1. Air compressor PTO engagement switch
 - 2. Auto Sync compressor controls (Auto/Manual, Run/Unloaded) with engraved instruction plate.
 - 3. Air compressor temperature gauge with warning light and audible alarm
 - 4. CAFS system air pressure gauge
 - 5. An air valve for each compressed air foam discharge; controls to be adjacent to and color coded with water valves
 - 6. NFPA required warning labels and instruction plates

SYSTEM TESTS

Prior to delivery, the completed apparatus shall pass the following tests which shall be performed by the apparatus manufacturer:



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Yes No

- A. The apparatus manufacturer shall test the operation of the water pump and air compressor system simultaneously to determine the integrity of the system and to ensure that there is adequate power available to operate these components as a complete compressed air foam system. The compressed air source shall be operated to flow 140 SCFM at a minimum of 125 PSIG and the water pump shall discharge 280 GPM at 125 PSI net pump pressure through separate discharge outlets for a period of one (1) hour. Readings of the airflow rate and pressure, and the water pump pressure and discharge rate shall be taken and recorded at least every ten (10) minutes.
- B. A standby run test shall be performed in which the CAFS is operated to discharge finished foam through 200 feet of 1 1/2" hose at 125 PSI. With the apparatus booster tank at 1/2 full, the valve at the end of the hose shall be closed no faster than in 3 seconds and no slower than 10 seconds, and the engine speed maintained for 10 minutes without discharging water, air or foam solution. At the end of 10 minutes, the valve shall be reopened no faster than in 3 seconds and no slower than in 10 seconds. Any damage to the system that affects its rated performance characteristics or the lack of a fire stream immediately upon opening the hose line valve shall constitute failure of this test.

MANUALS

Two (2) complete operation and maintenance manuals shall be provided with the completed apparatus. Manuals shall include instruction in the operation and maintenance of the overall compressed air foam system and each major component.

FOAM PRO FOAM SYSTEM

FOAM PRO SYSTEM

- A. One (1) FoamPro part number S105-2001 electronic foam proportioning system shall be provided. The system shall be capable of using both Class A and most Class B foam concentrates. The foam proportioning operation shall be designed for direct measurement of water flows, and shall remain consistent within the specified flows and pressures. The system shall be capable of accurately delivering foam solution as required by applicable sections of the NFPA standards.
- B. The system shall be equipped with a digital electronic control display suitable for installation on the pump panel. There shall be a microprocessor incorporated within the electronic controls that shall receive input from the system's flow meter, while also monitoring the foam concentrate pump output. The microprocessor shall compare the values to ensure that the desired amount of foam concentrate is injected onto the discharge side of the fire pump.
- C. Paddlewheel-type flow meter(s) shall be installed in the discharges specified to be "foam capable". When the use of more than one (1) flow meter is required, an electronic interface module will be provided to total these flows and send the flow total to the microprocessor in the computer control module.



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Complies**

Yes No

D. The digital computer control display shall enable the pump operator to perform the following control and operation functions for the foam proportioning system:

1. Provide push-button control of foam proportioning rates from 0.1% to 3%, in 0.1% increments
2. Show current flow-per-minute of water
3. Show total volume of water discharged during and after foam operations are completed
4. Show total amount of foam concentrate consumed
5. Simulate flow rates for manual operation
6. Perform setup and diagnostic functions for the computer control microprocessor
7. Flash a "low concentrate" warning when the foam concentrate tank (s) become low
8. Flash a "no concentrate" warning and shut the foam concentrate pump off, preventing damage to the pump, should the foam tank(s) become empty

E. A 12 volt electric motor driven positive displacement foam concentrate pump shall be provided and installed in an accessible location. The pump capacity range shall be 0.1 to 2.6 GPM (9.5L/min) at 150 PSI with a maximum operating pressure up to 400 PSI (27.6 BAR). The system shall draw a maximum of 40 amps at 12 volts. An electronic driver for the pump motor shall be mounted to the base of the pump and shall receive signals from the computer control display, and regulate the 1/2 horsepower (.40 Kw) electric motor directly coupled to the concentrate pump in a variable speed duty cycle to ensure that the correct proportion of concentrate, preset by the pump operator is injected into the water stream.

F. A full flow check valve shall be provided to prevent foam contamination of the fire pump and water tank or water contamination of the foam tank.

Components of the complete proportioning system as described above shall include:

1. Operator control and display
2. Paddlewheel flow meter(s)
3. Pump and electric motor/motor driver
4. Wiring harnesses
5. Low level tank switch
6. Foam injection check valve
7. Main waterway check valve

G. The foam system shall be installed and calibrated to manufacturer's requirements. In addition the system shall be tested and certified by the apparatus manufacturer to meet applicable NFPA standards.

H. The foam system design shall be tested and pass environmental testing in accordance to SAE standards. The system shall be third party tested to certify compliance with RFI/EMI emissions per MIL-STD-416E.

I. An installation and operation manual shall be provided for the unit. The system shall have a one (1) year limited warranty by the foam system manufacturer.



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Complies**

Yes No

CONTROL CONNECTION CABLE FOAM SYSTEM

The FoamPro 2001 Series foam system shall be provided with a twelve (12) foot control cable from the controller to the foam pump assembly.

PUMP PANEL CONTROL FOAM SYSTEM

The FoamPro 2001 Series foam system shall be provided with pump panel mounted control assembly.

INSTRUCTION AND RATING LABEL FOAM SYSTEM

A FoamPro part number 6032-0020 instruction and system rating label shall be provided. The label shall display information for a FoamPro 2001 Series foam system and shall meet applicable sections of the NFPA standards.

SCHEMATIC LABEL FOAM SYSTEM

A FoamPro foam system schematic label shall be installed on the pump panel near foam controls. The label shall be a diagram of the FoamPro 2001 foam system layout and shall meet applicable sections of the NFPA standards.

1" FOAM TANK CONTROL CLASS A

One (1) Class A foam tank shall be plumbed with 1" valve and corrosion resistant hose from the foam tank to the foam inlet of the foam system. The manually opened valve shall be provided behind the pump panel with a label.

INTEGRAL CLASS A FOAM TANK 30 GALLON

- A. One (1) thirty (30) gallon Class A foam tank shall be installed within the water tank. The non-corrosive foam tank shall meet applicable sections of NFPA standards. The foam concentrate tank shall be provided with sufficient wash partitions so that the maximum dimension perpendicular to the plane of any partition shall not exceed 36 inches. The swash partition(s) shall extend from wall to wall and cover at least 75 percent of the area of the plane of the partition.
- B. The foam concentrate tank shall be provided with a fill tower or expansion compartment having a minimum area of 12 square inches and having a volume of not less than 2 percent of the total tank volume. The fill tower opening shall be protected by a completely sealed air-tight cover. The cover shall be attached to the fill tower by mechanical means. The fill opening shall be designed to incorporate a 1/4 inch removable screen and shall be located so that foam concentrate from a five (5) gallon container can be dumped directly to the bottom of the tank to minimize aeration without the use of funnels or other special devices.
- C. The foam tank fill tower shall be equipped with a pressure/vacuum vent that enables the tank to compensate for changes in pressure or vacuum when filling or withdrawing foam concentrate from the tank. The pressure/vacuum vent shall not allow atmospheric air to enter the foam tank except during operation or to compensate for thermal



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Complies**

Yes

No

fluctuations. The vent shall be protected to prevent foam concentrate from escaping or directly contacting the vent at any time. The vent shall be of sufficient size to prevent tank damage during filling or foam withdrawal.

- D. A color coded label or visible permanent marking that reads "FOAM TANK FILL" shall be placed at or near any foam concentrate tank fills opening. A label shall be placed at or near any foam concentrate tank fill opening that specifies the type of foam concentrate the system is designed to use. Any restrictions on the types of foam concentrate that can be used with the system shall also be stated, and a warning message that reads "WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM."
- E. The foam concentrate tank outlet connection shall be designed and located to prevent aeration of the foam concentrate and shall allow withdrawal of 80 percent of the foam concentrate tank storage capacity under all operating conditions with the vehicle level.
- F. The foam tank(s) shall be fabricated by United Plastic Fabricating.

FOAM TANK DRAIN UNDER TANK

The foam tank shall have one (1) 1" gate valve drain provision installed.

CLASS A FOAM TANK GAUGE

- A. One (1) Fire Research TankVision model WLA260-A00 foam tank indicator kit shall be installed at the operator's panel. The kit shall include an electronic indicator module, a pressure sensor, a 10-ft sensor cable and a tank vent. The indicator shall show the volume of Class A foam concentrate in the tank on nine (9) easy to see super bright LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be waterproof, manufactured of aluminum, and have a distinctive green label.
- B. The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, and a datalink to connect remote indicators. Low foam warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.
- C. The indicator shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted from the outside of the foam tank near the bottom. No probe shall be placed on the interior of the tank. The foam tank vent shall be installed on the foam fill tower. Wiring shall be weather resistant and have automotive type plug-in connectors.

CAB MOUNTED CLASS A FOAM TANK GAUGE

One (1) Fire Research Tank Vision model WLA265-A00 miniature foam tank indicator shall be installed in the cab. The indicator shall show the volume of Class A foam concentrate in the tank on five (5) easy to see super bright LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be manufactured of aluminum and have a distinctive green label.



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Bidder
Complies

Yes

No

The miniature indicator shall receive input information over a single wire from a Fire Research Tank Vision model WLA260-A00 tank primary indicator.

REMOTE FOAM ACTIVATION SWITCH AND LIGHT

There shall be a switch and indicator light mounted in the cab; to energize the foam pump remotely for pump and roll operations.

The remote foam switch shall be located in the center mounted cab console.

FOAM SYSTEM DISCHARGE

One (1) 1-3/4" to three (3) 2" discharges and locations shall be either water or CAFS foam discharges. The CAFS air valve shall be a 1/2" diameter, manually controlled ball valve suitable for the application.

The number and sizes of the discharges to be CAFS capable shall be determined at the pre-construction conference.

PUMP DISCHARGE AND HOSE REEL

LEFT & RIGHT SIDE CAB STEP OVERLAY 1-1/2" DISCHARGE

- A. One (1) 1-1/2" discharge shall be located in each of the cab step overlays and controlled by a quarter turn ball valve on the rear mount pump panel. The discharge shall have 2" NPT x 1-1/2" NST male hose threads. An engraved nameplate label shall be provided adjacent the control handle.
- B. A Class 1 automatic type 3/4" bleeder valve shall be installed on discharges larger than 1-1/2" in size.
- C. The specified valve shall be an Akron 8000 Series two-inch (2") valve with a stainless ball.
- D. For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.
- E. The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.
- F. Two (2) 2-1/2" Noshok discharge pressure gauges (30"-0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.



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Bidder
Complies

Yes No

RIGHT SIDE FRONT OF HOSEBED 2-1/2" DISCHARGE

- A. One (1) 2-1/2" discharge shall be installed to the right rear of body face just below the hosebed and controlled by a quarter turn ball valve on the rear mount pump panel. The discharge shall have 2-1/2" NPT x 2-1/2" NST male hose threads. An engraved nameplate label shall be provided adjacent the control handle.
- B. A Class 1 3/4" cast bronze quarter-turn drain and bleeder valve shall be installed on gated intakes and discharges larger than 1-1/2" in size.
- C. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a 1"x 1 1/2" recessed ID label provision.
- D. The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.
- E. For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.
- F. The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.
- G. One (1) 2-1/2" Noshok discharge pressure gauges (30"-0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

REAR CENTER PUMP PANEL LEFT SIDE 2-1/2" DISCHARGE

- A. One (1) 2-1/2" discharge shall be installed on the left side of the rear center pump panel and shall be controlled by a quarter turn ball valve on the rear mount pump control panel. The discharge shall have 2-1/2" NPT x 2-1/2" NST male hose threads. An engraved nameplate label shall be installed adjacent the valve control handle.
- B. A 3/4" quarter turn bleeder valves shall be installed.
- C. One (1) chrome plated elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" NST male hose threads.
- D. One (1) 2-1/2" NST rocker lug chrome plated vented cap and cable or chain securement shall be provided.
- E. The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.



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Complies**

Yes

No

- F. For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.
- G. The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.
- H. One (1) 2-1/2" Noshok discharge pressure gauges (30"-0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

REAR CENTER PUMP PANEL LEFT CENTER 2-1/2" DISCHARGE

- A. One (1) 2-1/2" discharge shall be installed to the left of center on the rear center pump panel and shall be controlled by a quarter turn ball valve on the rear mount pump control panel. The discharge shall have 2-1/2" NPT x 2-1/2" NST male hose threads. An engraved nameplate label shall be installed adjacent the valve control handle.
- B. A 3/4" quarter turn bleeder valves shall be installed.
- C. One (1) chrome plated elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" NST male hose threads.
- D. One (1) 2-1/2" NST rocker lug chrome plated vented cap and cable or chain securement shall be provided.
- E. The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.
- F. For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.
- G. The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.
- H. One (1) 2-1/2" Noshok discharge pressure gauges (30"-0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.



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Bidder
Complies

Yes No

REAR RIGHT SIDE 2-1/2" DISCHARGE

- A. One (1) 2-1/2" discharge shall be installed on the right side of the rear center pump panel and shall be controlled by a quarter turn ball valve on the rear mount pump control panel. The discharge shall have 2-1/2" NPT x 2-1/2" NST male hose threads. An engraved nameplate label shall be installed adjacent the valve control handle.
- B. A 3/4" quarter turn bleeder valves shall be installed.
- C. One (1) chrome plated elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" NST male hose threads.
- D. One (1) 2-1/2" NST rocker lug chrome plated vented cap and cable or chain securement shall be provided.
- E. The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.
- F. For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.
- G. The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.
- H. One (1) 2-1/2" Noshok discharge pressure gauges (30"-0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

FRONT BUMPER MONITOR DISCHARGE

- A. One (1) 2" discharge shall be piped to the front center bumper area with 2" NPT male threads. The quarter turn ball valve shall be controlled in the chassis cab. The monitor shall be supplied by a flexible high pressure hose mounted with adequate support brackets and abrasion resistant mountings.
- B. Low point drains shall be installed where necessary. A color coded nameplate label shall be provided.
- C. A Class 1 automatic type 3/4" bleeder valve shall be installed on discharges larger than 1-1/2" in size.

ELECTRICALLY REMOTE CONTROLLED MONITOR

- A. One (1) TFT Model Y2-E84A bumper monitor shall be provided. The lightweight monitor shall have a vaned waterway. The monitor shall be equipped with a 12 volt



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Complies

Yes

No

electric motor. The monitor is designed to mount on a front bumper of an apparatus.

- B. The monitor shall have a 2" NPT female inlet with a 1-1/2" NST male outlet. The unit shall be painted red urethane enamel with hard anodized trim.
- C. One (1) TFT Y4E-JS joystick control for front monitor shall be installed.

REMOTE ELECTRIC NOZZLE TIP

- A. Task Force Tips Ultimatic 125, model # B-TOS-ERP adjustable nozzle with electrically operated pattern control shall be provided. The nozzle design shall allow for straight stream through dense wide fog patterns and be able to be flushed without shutting down.
- B. The electric drive unit shall develop over 400 pounds of torque, be enclosed in a waterproof cast aluminum housing and include a manual override device in the event the power source fails. The unit shall be compatible with 12 or 24 volt power systems and require no more than a 3 amp power draw and include a 6" connection cable with plug.
- C. Nozzle stream shaper actuator shall have position encoder for smooth transition between straight stream and fog pattern with fine stream adjustment. Nozzle stream shaper shall stop and pause at full fog position. A second electrical actuation of the stream shaper shall move the shaper to the flush position for removing debris from the nozzle.
- D. For corrosion resistance and durability the nozzle shall be constructed from hardcoat anodized aluminum alloy, a protective rubber bumper with fog teeth, laser engraved serial number, reflective labeling and five year warranty.
- E. The nozzle shall have a 1-1/2" female NH swivel rocker lug coupling and a user adjustable flow range of 15-120 GPM at 100 PSI. A waterproof six-pin electrical connection for use with TFT remote control monitors shall be included. The nozzle shall be designed to accept the TFT FJ-U or FJ-UMX FoamJet low expansion air aspirating attachments.
- F. One (1) 2-1/2" diameter discharge pressure gauges (30"-0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located in the chassis cab.

ELECTRIC REWIND HOSE REEL

- A. One (1) Hannay painted steel hose reel with leak proof ball bearing swing joint, adjustable friction brake, electric rewind shall be installed. The reel shall be plumbed with wire reinforced, high-pressure hose coupled. The reel shall be bolted to a mounting system for easy service or removal.
- B. The hose reel is to be mounted in left side cab step compartment area.
- C. A push button hose reel rewind switch shall be installed to control the electric rewind hose reel. The exact location shall be determined at construction.



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Yes No

- D. One (1) 1" discharge shall be provided and piped from the fire pump to the hose reel with flexible high pressure hose. The quarter turn ball valve shall be controlled on pump panel. A color coded engraved nameplate label shall be provided near the valve control handle.
- E. A 3/4" quarter turn bleeder valves shall be installed.
- F. The specified hose reel shall be piped to the normal pressure side of the fire pump.
- G. One (1) Akron 8000 Series one-inch (1") valve with a stainless ball shall be supplied.
- H. For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.
- I. The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.
- J. One (1) 2-1/2" Noshok discharge pressure gauges (30"-0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.
- K. 100' foot length(s) of 1" water hose with pin lug couplings and 800 PSI working pressure shall be provided and mounted on the specified hose reel.

ELECTRIC REWIND HOSE REEL

- A. One (1) Hannay painted steel hose reel with leak proof ball bearing swing joint, adjustable friction brake, electric rewind shall be installed. The reel shall be plumbed with wire reinforced, high-pressure hose coupled. The reel shall be bolted to a mounting system for easy service or removal.
- B. The hose reel is to be mounted in right side cab step compartment area.
- C. A push button hose reel rewind switch shall be installed to control the electric rewind hose reel. The exact location shall be determined at construction.
- D. One (1) 1" discharge shall be provided and piped from the fire pump to the hose reel with flexible high pressure hose. The quarter turn ball valve shall be controlled on pump panel. A color coded engraved nameplate label shall be provided near the valve control handle.
- E. A 3/4" quarter turn bleeder valves shall be installed.



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**Bidder
Complies**

Yes No

- F. The specified hose reel shall be piped to the normal pressure side of the fire pump.
- G. One (1) Akron 8000 Series one-inch (1") valve with a stainless ball shall be supplied.
- H. For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.
- I. The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.
- J. One (1) 2-1/2" Noshok discharge pressure gauges (30"-0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.
- K. 100' foot length(s) of 1" water hose with pin lug couplings and 800 PSI working pressure shall be provided and mounted on the specified hose reel.

HOSE REEL PAINTING

The hose reel(s) shall be painted silver grey.

PUMP ENCLOSURE, WATER TANK AND HOSEBED SPECIFICATIONS

REARMOUNT PUMP ENCLOSURE

- A. The rearmount pump enclosure, rear pump, and plumbing installation shall be contained entirely in the rear compartment and shall be supported from the rear body sub-structure. The pump, plumbing, and controls shall be totally enclosed in the rear compartment to contain the system inside the body.
- B. Nameplates labels shall be furnished for the discharges and intakes and for other controls and indicators.
- C. Located within the module shall be:
 - 1. Electric primer.
 - 2. Pump area service lights.
 - 3. All gauge piping and hoses.
 - 4. Intake dump valve.
 - 5. Pressure control device and throttle control.
 - 6. Pump engagement lights.
 - 7. Engine instruments.
 - 8. Master intake and discharge gauges



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Yes

No

- 9. Tank fill control.
- 10. Tank-to-pump control.

PUMP PANEL LOCATION REAR CENTER

The operator's instrument panel for the rearmount pump shall be located at the rear center of the apparatus body.

PUMP CONTROL PANEL ROLL-UP DOOR REAR CENTER

The rearmount pump operator's panel shall be located at the rear center of the apparatus body. A roll-up style compartment door shall be provided for the door opening.

PUMP CONTROL PANEL REAR MOUNT

The pump operator's instrument panel for the rearmount pump shall be constructed of black thermoplastic coating material applied to smooth aluminum and be fastened to the pump enclosure with 1/4" stainless steel bolts.

REARMOUNT PUMP AND PLUMBING ACCESS

The rearmount pump enclosure and plumbing area shall be accessible through removable panels, with stainless steel bolts in rear side compartment walls.

PUMP PANEL STAINLESS STEEL TRIM PANELS

Stainless steel intake and discharge trim rings shall be installed to the apparatus with mounting bolts. These assemblies will be used to identify intake and discharge ports with color and verbiage, using separate identification tags protected by chrome plated bezels. These trim rings are designed and manufactured to withstand the environment and shall be backed by a warranty equal to that of the exterior paint and finish. All labels shall be backed with 3M permanent adhesive (200MP), which meets UL969 and NFPA standards.

LABELS

- A. Safety, information, data, and instruction labels for apparatus shall be provided and installed at the operator's instrument panel.
- B. The labels shall include rated capacities, pressure ratings, and engine speeds as determined by the certification tests. The no-load governed speed of the engine, as stated by the engine manufacturer, shall also be included.
- C. The labels shall be provided with all information and be attached to the apparatus prior to delivery.

COLOR CODED PUMP PANEL LABELING AND NAMEPLATES

- A. Discharge and intake valve controls shall be color coded in compliance to guidelines of applicable sections of NFPA standards.



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Complies

Yes

No

- B. Permanent type nameplates and instruction panels shall be installed on the pump panel for safe operation of the pumping equipment and controls.

REARMOUNT PUMP PANEL LIGHTS

Three (3) Weldon #2025 or equal lights with clear lenses shall be installed on the pump panel light hood. The lights shall be controlled by a switch located on the operator's instrument panel.

PUMP PANEL LIGHTS

One (1) pump panel light shall be illuminated at the time the fire pump is engaged into operation. The remaining lights shall be controlled by a switch located on the operator's instrument panel.

MASTER DISCHARGE AND INTAKE GAUGES

- A. Two (2) 4" diameter Noshok discharge pressure and intake gauges (30"-0-600 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.
- B. The master gauges shall have clear scratch resistant molded crystals with captive O-ring seals shall be used to ensure distortion free viewing and to seal the gauge. The gauges shall be filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from - 40 °F to +160 °F. Each gauge shall exceed ANSI B40.1 Grade A requirements with an accuracy of +/- 1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy. A polished chrome-plated brass bezel shall be provided to prevent corrosion and protect the lens and gauge case.

TEST TAPS

Test taps for pump intake and pump pressure shall be provided on the pump instrument panel and be properly labeled.

REAR OF BODY SPEEDLAY 1-1/2" DISCHARGE

- A. One (1) 1-3/4" pre-connect hose speedlay shall be installed at the right rear of body. The speedlay shall have a diamond plate door and latch. It shall be incorporated into the pump house and the floor of the R3 compartment and completely contained. It shall be controlled with quarter turn 2" diameter ball valve at the rear mount pump panel. The outlet shall be equipped 2" NPT female swivel x 1-1/2" male NST hose threads.
- B. The speedlay hosebed shall have smooth aluminum sides and slots integrated into the hosebed floor. The hosebed shall have a minimum capacity of 200 feet of 1-3/4" diameter double jacket hose with hose and nozzle provided by purchaser.
- C. The hose bed openings shall be equipped with hose and nozzle securement devices to



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Complies

Yes No

comply with applicable NFPA standards.

- D. A Class 1 automatic type 3/4" bleeder valve shall be installed on discharges larger than 1-1/2" in size.

SLIDE OUT TRAY FOR PRE-CONNECTED HOSE BEDS

- A. The 1-3/4" pre-connect hosebed(s) shall be equipped with a "U" shaped aluminum hose tray. The unit shall be equipped with pull out hand holes and retaining devices to secure the tray, nozzle, and hose in transit.
- B. The specified valve shall be an Akron 8000 Series two-inch (2") valve with a stainless ball.
- C. For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.
- D. The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.
- E. One (1) 2-1/2" Noshok discharge pressure gauges (30"-0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

EQUIPMENT SECUREMENT

The hose bed openings shall be equipped with hose and nozzle securement devices to comply with applicable NFPA standards.

ALUMINUM HOSEBED GRATING SINGLE AXLE

- A. The hose bed compartment deck shall be constructed entirely from maintenance-free, extruded aluminum slats. The slats shall have an anodized, radiused ribbed top surface. The slats shall be of widths approximately 3/4" high x 6" wide and shall be assembled into a one-piece grid system to prevent the accumulation of water and allow ventilation to assist in drying hose.
- B. The apparatus hose body shall be properly reinforced without the use of angles or structural shapes and free from all projections that might injure the fire hose.
- C. The main apparatus hose body shall run the full length of the apparatus body from behind the pump panel area to the rear face of the body.
- D. The upper rear interior of the hose body on the right and left sides shall be overlaid with brushed stainless steel to protect the painted surface from damage by hose couplings.



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Yes

No

HOSE BED STORAGE CAPACITY

The hose bed shall be designed to have a storage capacity for a minimum of 55 cubic feet of purchaser supplied fire hose.

ALUMINUM HOSEBED DIVIDER

One (1) adjustable hosebed divider constructed of .250" aluminum shall be installed on the apparatus.

BULKHEAD DIVIDER

There shall be a full width smooth aluminum bulkhead behind the auxiliary pump and fill tower(s).

ALUMINUM HOSEBED COVER

- A. The hosebed shall be equipped with a reinforced hinged .125" aluminum diamond plate cover. The covers shall be of the sloped design for proper water runoff. The walking surface on the cover shall be a NFPA #1901 compliant surface. Positive hold-open devices shall be provided to hold the door in the open position.
- B. The cover, approximately 49" to 74" wide with a center opening, shall be installed the full length of the hose bed, and have a cutout for the booster tank fill tower.

REAR VINYL FLAPS FOR ALUMINUM COVER

- A. There shall be vinyl flaps attached to each aluminum hosebed cover. The vinyl flaps shall cover the area on the rear of the hosebed from top to bottom. The flaps shall be independent of each other but attachable with velcro in the center. The bottom edge of the flap shall be secured utilizing a hook and loop fastening system.
- B. The color of the end flaps shall be determined at the pre-construction conference.

WATER TANK GAUGE

- A. One (1) Fire Research Tank Vision model WLA200-A00 tank indicator kit shall be installed on the pump panel. The kit shall include an electronic indicator module, a pressure sensor, and a 10' sensor cable. The indicator shall show the volume of water in the tank on nine (9) easy to see super bright LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be waterproof, manufactured of aluminum, and have a distinctive blue label.
- B. The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, and a datalink to connect remote indicators. Low water warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.
- C. The indicator shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted from the outside of the water tank near the bottom. No probe



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Complies**

Yes No

shall place on the interior of the tank. Wiring shall be weather resistant and have automotive type plug-in connectors.

CAB MOUNTED WATER TANK GAUGE

One (1) Fire Research TankVision model WLA205-A00 miniature tank indicator shall be installed in the chassis cab. The indicator shall show the volume of water in the tank on five (5) easy to see super bright LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be manufactured of aluminum and have a distinctive blue label.

WATER TANK – 750 GALLON

The apparatus shall be equipped with a seven hundred fifty (750) gallon polypropylene water tank. The tank shall be equipped with a four-inch (4") overflow pipe.

WATER TANK

The apparatus shall be equipped with a "T" shaped tank.

WATER TANK FILL TOWER

- A. A fill tower measuring approximately 10" x 10" square shall be provided on the water tank up to and including 1500 gallons total capacity.
- B. The apparatus shall be equipped with a polypropylene water tank. The tank body and end bulkheads shall be constructed of .5" thick, polypropylene, nitrogen-welded and tested inside and out. Tank construction shall conform to applicable NFPA standards. The tank shall carry a lifetime warranty.
- C. The transverse and longitudinal .375" thick swash partitions shall be interlocked and welded to each other as well as to the walls of the tank. The partitions shall be designed and equipped with vent holes to permit air and liquid movement between compartments.
- D. The .5" thick cover shall be recessed .375" from the top of the side walls. Hold down dowels shall extend through and be welded to both the covers and the transverse partitions, providing rigidity during fast fill operations. Drilled and tapped holes for lifting eyes shall be provided in the top area of the booster tank.
- E. The water fill tower shall be provided at front of the tank. The 0.5" thick polypropylene fill and overflow tower shall be equipped with a hinged lid and a removable polypropylene screen. The overflow tube shall be installed in fill tower and piped with schedule 40 PVC pipe through the tank.
- F. The water tank sump shall be located in the forward area of the tank. There will be a schedule 40 polypropylene tank suction pipe from the front of the tank to the tank sump. The tank drain and clean out shall be located in the bottom of the tank sump.
- G. The pump to tank refill connection shall be a sized to mate with tank fill discharge line. A deflector shield inside the tank will also be provided.



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Bidder Complies

Yes No

- H. The water tank manufacturer shall certify the capacity of the water tank prior to delivery of the apparatus. This capacity shall be recorded on the manufacturer's record of construction and the certification shall be provided to the purchaser when the apparatus is delivered.
- I. The apparatus shall be equipped with a water tank manufactured by United Plastic Fabricating and supply the following warranty.

WATER TANK WARRANTY

UNITED PLASTIC FABRICATION INC. Warrants each UPF POLY-TANK IIE Booster/Foam tank to be free from manufacturing defects in material and workmanship for the service life of the vehicle (vehicle must be actively used in fire suppression). The UPF POLY-TANK IIE must be installed in accordance with the United Plastic Fabricating installation manual. Every UPF POLY-TANK IIE is thoroughly inspected and tested for leaks before leaving our facility. Should any problems develop with your UPF POLY-TANK IIE booster/foam tank and will not meet performance criteria during the service life of the vehicle, notify UPF in writing or call our TOLL FREE SERVICE HOT LINE 1-800-USA-POLY. Provide UPF with the serial number and a description of the problem. If the tank problem would render the truck out of service, UPF will dispatch a service technician WITHIN 48 HOURS (2 DAYS) to repair the tank. (This time period is for North America only). If the vehicle can remain in service, UPF will dispatch a service technician within a mutually agreed upon time period.

We will repair, or at our option, replace the tank with a new UPF POLY-Tank IIE. UPF will cover customary and reasonable costs to remove and install the UPF POLY-TANK IIE. This warranty will not cover tanks that have been improperly installed, misused or abused, and the serial number must not have, been altered, defaced or removed. UPF will not cover any unauthorized third party repairs or alterations. Any of these actions may void the warranty.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF. THERE IS NO EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. ADDITIONALLY, THIS WARRANTY IS IN LIEU OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF UNITED PLASTIC FABRICATION, INC.

This warranty contains the entire warranty. It is the sole warranty and price agreements or representation, whether oral or written, are either merged herein or expressly cancelled. UNITED PLASTIC FABRICATION, INC. Neither assumes, nor authorizes any person supposing to act on its behalf, to change, nor assume for it, any warranty or liability concerning its product.

IN NO EVENT WILL UNITED PLASTIC FABRICATION, INC BE LIABLE FOR AN AMOUNT IN EXCESS OF THE PRESENT RETAIL, PURCHASE PRICE PLUS INSTALLATION AND REMOVAL COST OF THE BOOSTER TANK, FOR ANY LOSS OR DAMAGE, WHETHER DIRECT OR INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR OTHERWISE ARISING OUT OF FAILURE OF ITS PRODUCT.



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Bidder
Complies

Yes

No

This warranty gives you specific legal rights, and you may have other rights, which vary from state to state. Some states do not allow exclusion or limitation of incidental or consequential damage, so the above limitation or exclusion may not apply to you. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

DIRECT TANK FILL

- A. One (1) 2-1/2" diameter direct tank fill inlet shall be provided, including a 2-1/2" female NH swivel, plug and screen.
- B. The valve shall be located and controlled on the right side pump panel.

APPARATUS BODY SPECIFICATIONS AND REQUIREMENTS

1/8" ALUMINUM BODY

- A. The body shall be fabricated of aluminum extrusions, smooth aluminum sheet and aluminum tread plate.
- B. The aluminum extrusion alloy shall be 6061 with a temper rating of T6, and have a tensile strength of 45,000 PSI and yield strength of 40,000 pounds. The aluminum extrusions shall 3" x 3" aluminum tubing, 1-3/4" x 3" aluminum tubing and 3" x 3" aluminum angle and specially designed extrusions, up to .250" wall thickness where applicable.
- C. The smooth aluminum sheet material alloy shall be 5052 with a temper rating of H32, and have a tensile strength of 33,000 PSI and yield strength of 28,000 pounds.
- D. The aluminum tread plate alloy shall be 3003 with a temper rating of H22, and have a tensile strength of 30,000 PSI and yield strength of 28,000 pounds.
- E. The extrusions shall be designed as structural-framing members with the smooth aluminum and tread plate fabricated to form compartments, hosebeds, and floors. All aluminum material shall be welded together using the latest mig spray pulse arc welding system.
- F. Compartments to be sweepout design and to be water and dust proof. All compartments shall be made to the maximum practical dimensions to provide maximum storage capacity. To ensure maximum storage space, the apparatus shall be constructed without any void spaces between the body and the compartment walls. Double wall construction does not meet this requirement.
- G. All exterior compartments shall have polished aluminum drip moldings installed above the doors where necessary to prevent water from entering the compartments.
- H. Wheel well panels shall be formed aluminum that is welded in place. There shall be no visible bolt heads, retention nuts or fasteners on the exterior surface of the panel. To fully protect the wheel well area from road debris and to aid in cleaning, a full depth



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Complies

Yes

No

radius wheel well liner shall be provided. The frame side of the wheel well area on each side of the opening shall be attached to the frame side of the front and rear compartments. All seams on the frame side of the body shall be welded and caulked to prevent moisture from entering the compartments.

- I. The rear wheel wells shall be radius cut for a streamlined appearance. A polished aluminum fenderette shall be furnished at each rear wheel well opening, held in place with stainless steel fasteners.

FASTENERS

- A. All aluminum and stainless steel components shall be attached using stainless steel fasteners.
- B. Compartment door hinges, handrails and running boards shall be attached using minimum 1/4" diameter machine bolt fasteners.
- C. 3/16" diameter fasteners shall only be used in nonstructural areas such as; door handles, trim moldings, gauge mounting, etc.

COMPARTMENT FLOORS

The compartment floors shall be constructed of smooth aluminum material, to match the compartment interior walls.

GALVANIZED SUB-FRAME

- A. The apparatus body subframe shall be constructed entirely of heavy steel structural channel material.
- B. Two full frame lengths, three-inch (3") 3.4 pound per foot longitudinal steel channels shall form the sides of the body subframe and sides of the water tank cradle. Subframe crossmembers shall be fabricated with three inch (3") 3.4 pound per foot heavy steel channel cross members welded to the longitudinal body subframe sides and the full length frame pads.
- C. Two full frame length 1/2" x 3" flat steel frame pads shall be attached to the body subframe and rest on top of the chassis frame rails for proper frame weight distribution.
- D. The steel frame pads, longitudinal steel channels and subframe crossmembers shall be attached to the chassis frame rails using heavy "U" bolt fasteners to allow removal of the subframe and body assembly from the chassis. There shall be a barrier provided between the subframe and body to prevent electrolysis.
- E. The rear subframe and lower body platform support members shall be of the "two piece" design, fabricated of 3.4 lb. per foot heavy channel and welded to the full length subframe channel liners at the rear.
- F. A minimum of two rear platform support channels shall be provided and constructed of



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Yes

No

3.4 lb. per foot heavy steel material. Each support channel shall have welded in gusset where the support meets the rear subframe rails.

G. After fabrication the entire subframe assembly shall be hot dip galvanized to prevent corrosion. The hot dip galvanized subframe shall have a lifetime warranty against failure due to corrosion.

H. This steel subframe shall carry the weight of the apparatus body, tank, water and equipment. This method of apparatus construction gives an excellent strength/weight ratio.

BODY CONFIGURATION

The aluminum apparatus body shall be up to 144" long, reference the drawing for actual body length.

SINGLE AXLE WHEEL AREA

A. For ease of accessibility and maintenance, wheel well panels shall be double break formed painted smooth plate that is welded in place.

B. To fully protect the wheel well area from road debris and to aid in cleaning, a full depth (minimum of 25") radius wheel well liner shall be provided. Wheel well liner shall be smooth aluminum to prevent corrosion.

FENDERETTES

The rear wheel wells shall be radius cut for a streamlined appearance. A black rubber fenderette shall be furnished at each rear wheel well opening, held in place with concealed stainless steel fasteners.

HOSEBED WIDTH

The width of the pumper body hosebed shall be 68".

BODY WIDTH

The overall width of the pumper body shall not exceed 98".

COMPARTMENT HEIGHT

The left side body compartments shall be 63" high.

COMPARTMENT HEIGHT

The right side body compartments shall be 63" high.

HINGED COMPARTMENT FLUSH DOOR CONSTRUCTION

A. All hinged compartment doors shall be of the flush style so that the entire door fits flush against the apparatus body sides. Doors shall be designed, in the closed position, to have the painted edges protected from damage on the tops by forming the tread plate



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Complies

Yes

No

compartment tops into an extended drip edge and on the bottom by the rub rail.

- B. Doors shall be a minimum 2" thick, fabricated of a minimum of 1/8" smooth aluminum. Full panel inner compartment door liners shall be provided and constructed from smooth aluminum. The compartment doors shall have a foam panel glued in place between the exterior and interior door skin. Exterior door panels shall be smooth with no welds visible on the exterior skin. Double door compartments shall be equipped with a secondary latch to hold the secondary door in position.
- C. All compartment door hinges shall be full-length piano type constructed of a minimum 14-gauge type 304, polished stainless steel with 3/16" stainless steel hinge pin with dual directional bolt holes for ease of adjustment.
- D. When horizontally hinged lift-up doors are specified, they shall be equipped with heavy-duty gas filled dampeners to hold the doors in the open position. All other hinged doors shall be equipped with spring loaded hold open devices specifically designed for use on vertically hinged doors. Door holders shall be bolted in position. The door ajar switches shall be fully enclosed within structural members and shall not extend into the clear door opening.
- E. All compartment doors shall be provided with hollow core weather stripping to provide a weather tight seal at the door opening and to prevent road spray and debris from entering the compartment.
- F. A non-moisture absorbing gasket shall be installed between the door latch and the door skin panel.

EXTERIOR DOOR HANDLES

- A. All compartment doors shall be furnished with a large solid STAINLESS STEEL spring loaded Maltese Cross D-handle with slam type latches. D-handles shall have the large style "bent" D-ring for ease of grabbing the handle even when wearing mitts or gloves. Chrome plated standard steel D-handles are not acceptable.
- B. Door handles shall be held in place with four stainless steel stud fasteners secured on the interior of the door skin to eliminate bolt heads on the exterior latch ring. To prevent possible interaction between dissimilar metals, the studs shall not break any painted surface. A non-moisture absorbing gasket shall be installed between the door latch and the door skin panel.
- C. Handles which are held in place with visible fasteners, two sided tape or glue do not meet the intent of this requirement.

LEFT FRONT COMPARTMENT

There shall be one (1) full height compartment located ahead of the rear wheels. The compartment shall be equipped with a single full height hinged door.

The compartment shall be equipped with the following items:



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Yes

No

LOUVER

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

ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

ADJUSTABLE SHELVES

Two (2) adjustable shelves shall be constructed of .188" smooth aluminum plate with 1.5" formed vertical lip front & back. Shelf supports on each side to be constructed of .188" aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8" bolts and spring-loaded cam locks. If shelf is longer than 40" a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.

COMPARTMENT LIGHT

One (1) LED light fixture shall be installed on the ceiling of the exterior compartment of the apparatus. The light shall have a clear lens.

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

LEFT OVERWHEEL COMPARTMENT

There shall be one (1) compartment above the lower front compartment. The compartment shall be equipped with a single hinged lift up door.

The compartment shall be equipped with the following:

LOUVER

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

ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

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Complies

Yes No

compartment door.

LEFT REAR COMPARTMENT

There shall be one (1) full height compartment located behind the rear wheels. The compartment shall be equipped with full height double hinged doors.

The compartment shall be equipped with the following:

LOUVER

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

ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

ADJUSTABLE SHELF

One (1) adjustable shelf shall be constructed of .188" smooth aluminum plate with 1.5" formed vertical lip front & back. Shelf supports on each side to be constructed of .188" aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8" bolts and spring-loaded cam locks. If shelf is longer than 40" a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.

COMPARTMENT LIGHT

One (1) LED light fixture shall be installed on the ceiling of the exterior compartment of the apparatus. The light shall have a clear lens.

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

RIGHT FRONT COMPARTMENT

There shall be one (1) full height compartment located ahead of the rear wheels. The compartment shall be equipped with a single full height hinged door.

The compartment shall be equipped with the following:

LOUVER

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

ADJUSTABLE SHELVING TRACKS



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Yes

No

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

ADJUSTABLE SHELVES

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The compartment shall be equipped with the following:



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Complies

Yes

No

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COMPARTMENT LIGHT

One (1) LED light fixture shall be installed on the ceiling of the exterior compartment of the apparatus. The light shall have a clear lens.

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

REAR BODY CONFIGURATION

The rear of the apparatus body shall be of the flat back design.

REAR BODY

The apparatus body, behind the rear wheels shall be raised to allow for a high angle of departure.

REAR STEP - 12" BOLT-ON

A 12" deep step surface shall be provided at the rear of the apparatus body, bolted in place and easily removable for replacement or repair. The tailboard shall be constructed of .188" aluminum diamond plate or equal non-slip surface in compliance with NFPA #1901 standards.

The maximum height of the step assembly shall be no more than 24" from the ground when the apparatus is in the loaded condition. A label shall be provided warning personnel that riding on the rear step while the apparatus is in motion is prohibited.

SLIDE OUT LADDER MOUNTINGS IN HOSEBED WITH DOOR

The ladders shall be stored in the hosebed in a full width enclosed compartment. The area shall house three (3) sets of dual ladder slide in tracks to store specified ladders in a horizontal position. The mounting system shall be equipped with fiberglass angles and stop at front of



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Yes

No

ladders.

A full width aluminum diamond plate swing up door, with dual gas operators, shall be installed to enclose the ladder storage area.

EXTERIOR FOLDING ATTIC LADDER MOUNTING

- A. An exterior mounting shall be provided for the specified folding attic ladder.
- B. New ground ladders shall be provided by the body builder.

PIKE POLE MOUNTING BRACKET

- A. Two (2) tubes shall be provided for pike pole mounting. The tube shall have a 2" interior diameter and shall be mounted inside of the apparatus body.
- B. The new pike poles shall be provided by the body builder.

HARD SUCTION MOUNTING

Two (2) horizontally mounted aluminum hard suction hose trays shall be mounted one (1) each side.

SUCTION HOSE SOURCE

New suction hose shall be provided by the body builder.

FRONT BODY PROTECTION PANELS

Aluminum tread plate overlays and panels shall be installed on the front of the body from the lower edge to the top of the compartment doors.

REAR BODY PROTECTION PANELS

Smooth aluminum shall be installed on the rear of the body, to allow for the proper application and installation of a "Chevron" stripe on the rear.

I-ZONE BRACKETS

The rear of the body shall be equipped with two (2) removable I-Zone brackets for the temporary holding of coiled fire hose.

ACCESS LADDER_EZ CLIMB - LEFT REAR

There shall be a swing out and down access ladder supplied and installed on the apparatus, for accessing the top of the apparatus. It shall be of an all-aluminum design and shall incorporate treads six (6") inches deep and no more than eighteen (18") inches apart. The ground to the first step dimension, on level ground, shall be no more than eighteen (18") inches. When in the deployed position the ladder shall have an angle of approximately 75-degrees to facilitate ascending and descending the ladder. The ladder shall be retained in the stowed and deployed



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Yes

No

position by two (2) gas cylinders and shall not require the use of lathes to hold it in position.

HANDRAIL REAR STEP

Two (2) extruded aluminum non-slip handrails, approximately 48" in length, shall be provided and vertically mounted on the rear of the apparatus, one (1) on each side of the body.

HANDRAIL BELOW HOSEBED

One (1) extruded aluminum non-slip handrail, approximately 48" in length, shall be provided and horizontally mounted below the hosebed on the rear of the apparatus.

EXTRUDED ALUMINUM RUB RAILS

Full body length polished aluminum rub rails shall be bolted in place on the lower right and left body sides. The side rub rails shall be a heavy extruded aluminum "C" channel.

WHEEL WELL PROVISION LOCATION

The wheel well provisions shall be located on the left side of the apparatus, behind of the rear wheels.

One (1) breathing air cylinder storage compartment shall be provided and located in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be bolted in-place and removable for repair or replacement.

Compartment shall be provided with SCBA cylinder scuff protection. A brushed aluminum door with push button trigger latch shall be provided.

Specify the following:

Brand:

Model:

Size:

One (1) one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

WHEEL WELL PROVISION LOCATION

The wheel well provisions shall be located on the right side of the apparatus, ahead of the rear wheels.

One (1) breathing air cylinder storage compartment shall be provided and located in the rear wheel well of the apparatus body.



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Bidder
Complies

Yes

No

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be bolted in-place and removable for repair or replacement.

Compartment shall be provided with SCBA cylinder scuff protection. A brushed aluminum door with push button trigger latch shall be provided.

Specify the following:

Brand:

Model:

Size:

One (1) one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

12-VOLT ELECTRICAL SPECIFICATIONS AND REQUIREMENTS

LOW VOLTAGE ELECTRICAL SYSTEM SPECIFICATIONS

- A. The electrical system shall include all panels, electrical components, switches and relays, wiring harnesses and other electrical components. The electrical equipment installed by the apparatus manufacturer shall conform to current automotive electrical system standards, the latest Federal DOT standards, and the requirements of the applicable NFPA standards.
- B. All wiring shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for the protected circuit. Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent. The wiring and wiring harness and insulation shall be in conformance to applicable SAE and NFPA standards. The wiring harness shall conform to SAE J-1128 with GXL temperature properties. All exposed wiring shall be protected in a loom with a minimum 289 degree Fahrenheit rating. All wiring looms shall be properly supported and attached to body members. The electrical conductors shall be constructed in accordance with applicable SAE standards, except when good engineering practice requires special construction.
- C. The wiring connections and terminations shall use a method that provides a positive mechanical and electrical connection and shall be installed in accordance with the device manufacturer's instructions. Electrical connections shall be with mechanical type fasteners and large rubber grommets where wiring passes through metal panels.
- D. The wiring between the cab and body shall be joined using Deutsche type connectors or an enclosed in a terminal junction panel area. This system will permit body removal with minimal impact on the apparatus electrical system. All connections shall be crimp-type with insulated shanks to resist moisture and foreign debris such as grease and road grime. Weather-resistant connectors shall be provided throughout to ensure the integrity



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Yes

No

of the electrical system.

- E. There shall be no exposed electrical cabling, harnesses, or terminal connections located in compartments, unless they are enclosed in a junction box or covered with a removable electrical panel. The wiring shall be secured in place and protected against heat, liquid contaminants and damage. Wiring shall be uniquely identified every three-inches (3") by color coding or permanent marking with a circuit function code and identified on a reference chart or electrical wiring schematic per requirements of applicable NFPA #1901 standards.
- F. The electrical circuits shall be provided with low voltage overcurrent protective devices. Such devices shall be accessible and located in required terminal connection locations or weather resistant enclosures. The overcurrent protection shall be suitable for electrical equipment and shall be automatic reset type and meet SAE standards. All electrical equipment, switches, relays, terminals, and connectors shall have a direct current rating of 125 percent of maximum current for which the circuit is protected. The system shall have electro-magnetic interference suppression provided as required in applicable SAE standards.
- G. The electrical system shall include the following:
 - 1. Electrical terminals in weather exposed areas shall have a non-conductive grease or spray applied. A corrosion preventative compound shall be applicable to all terminal plugs located outside of the cab or body.
 - 2. The electrical wiring shall be harnessed or be placed in a protective loom.
 - 3. Holes made in the roof shall be caulked with silicone. Large fender washers shall be used when fastening equipment to the underside of the cab roof.
 - 4. Any electrical component that is installed in an exposed area shall be mounted in a manner that will not allow moisture to accumulate in it.
 - 5. A coil of wire must be provided behind an electrical appliance to allow them to be pulled away from mounting area for inspection and service work.
 - 6. All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.
- H. The warning lights shall be switched in the chassis cab with labeled switches in an accessible location. Individual rocker switches shall be provided only for warning lights provided over the minimum level of warning lights in either the stationary or moving modes. All electrical equipment switches shall be mounted on a switch panel mounted in the cab convenient to the operator. The warning light switches shall be of the rocker type. For easy nighttime operation, an integral indicator light shall be provided to indicate when the circuit is energized. All switches shall be appropriately identified as to their function.
- I. A single warning light switch shall activate all required warning lights. This switch will allow the vehicle to respond to an emergency and "call for the right of way". When the parking brake is applied, a "blocking right of way" system shall automatically activate per requirements of the applicable NFPA standards. All "clear" warning lights shall be automatically turned off upon application of the parking brake.



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Yes

No

NFPA REQUIRED TESTING OF ELECTRICAL SYSTEM

The apparatus shall be electrically tested upon completion of the vehicle and prior to delivery. The electrical testing, certifications, and test results shall be submitted with delivery documentation per requirements of the applicable NFPA standards. The following minimum testing shall be completed by the apparatus manufacturer:

1. Reserve capacity test:

The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged. The engine shall be shut off and the minimum continuous electrical load shall be activated for ten (10) minutes. All electrical loads shall be turned off prior to attempting to restart the engine. The battery system shall then be capable of restarting the engine. Failure to restart the engine shall be considered a failed test.

B. Alternator performance tests at idle:

The minimum continuous electrical load shall be activated with the engine running at idle speed. The engine temperature shall be stabilized at normal operating temperature. The battery system shall be tested to detect the presence of battery discharge current. The detection of battery discharge current shall be considered a test failure.

C. Alternator performance test at full load:

The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed. The test duration shall be a minimum of two (2) hours. Activation of the load management system is permitted during this test. However, if an alarm sounds due to excessive battery discharge, as detected by the system requirements in the NFPA standards, or a system voltage of less than 11.7 volts dc for more than 120 seconds is present, the test has failed.

D. Low voltage alarm test:

Following the completion of the above tests, the engine shall be shut off. The total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates. The battery voltage shall be measured at the battery terminals. With the load still applied, a reading of less than 11.7 volts dc for a 12 volt system shall be considered a test failure. The battery system shall then be able to restart the engine. Failure to restart the engine shall be considered a test failure.

NFPA REQUIRED DOCUMENTATION

The following documentation shall be provided on delivery of the apparatus:

- a. Documentation of the electrical system performance tests required above.



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Yes

No

b. A written load analysis, including:

1. The nameplate rating of the alternator.
2. The alternator rating under the conditions.
3. Each specified component load.
4. Individual intermittent loads.

WEATHER RESISTANT ELECTRICAL JUNCTION BOX

The electrical junction or terminal boxes shall be weather resistant and located away from water spray conditions. In addition, the main body junction panel shall house the automatic reset breakers and relays where required. The main body junction panel shall be located in the pump compartment.

LOAD MANAGER 2

- A. The apparatus shall be equipped with a Kussmaul model 091-79 Automatic Load Shedding System for performing continuous electrical load management. The Load Manager shall have the following features:
1. Monitor 12-volt system and detect low voltage.
 2. Capability to control two (2) loads.
 3. Automatic reset when voltage rises.
 4. Adjustable voltage setpoint.
- B. The load manager shall be protected against reverse polarity and shorted outputs, and be enclosed in an enclosure to enhance EMI/RFI protection. The manufacturer shall provide for all electrical loads in excess of the NFPA minimum electrical requirements that exceed the alternator output.

ELECTRICAL CONSOLE WITH EMERGENCY LIGHT SWITCH PANEL – THERMAL COATED

- A. An electrical console shall be constructed of .125" 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. The switch panel shall be hinged for easy access to the switch connections.
- B. All emergency light switches shall be lighted, rocker style. Switches shall be internally lit when the switch circuit is in the on position. A plug-in identification label is to be provided and installed adjacent to each rocker switch with backlighting provided behind the label.

SWITCHES

A rocker style internally lighted switch shall be provided and wired through a heavy-duty relay



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Yes

No

to activate power to the emergency lights. The emergency lights shall be activated by a single "MASTER SWITCH" on the electrical console.

AIR HORNS

Two (2) Stuttertone chrome plated air horns shall be mounted on the side of the hood of the commercial chassis. An air protection valve shall be provided in the air horn piping that will not allow the chassis air brake system to drop below 90 PSI.

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.

ENGINE COMPARTMENT LIGHT

One (1) 12 volt incandescent light with switch shall be mounted in the engine enclosure.

PUMP ENCLOSURE LIGHTS

One (1) LED work light shall be provided in the pump enclosure. The control switch shall be mounted on the light head.

BACK-UP ALARM

One (1) automatic electric back-up alarm shall be wired to the back-up light circuit, and mounted under the rear of the apparatus body.

BACKUP CAMERA

One (1) ASA color rear camera system shall be mounted on the rear of the vehicle. All system components shall be installed by the apparatus body manufacturer.

HAND LIGHTS

All NFPA required portable hand lights will be supplied and installed by the Customer before the apparatus is placed into service.

INTERCOM SYSTEM

- A. The vehicle shall be equipped with a Firecom 3010R intercom master station. The system comes standard with connections for up to six (6) positions. Additional positions can be added through daisy chaining or wireless transmitters.
- B. This system can operate with one (1) mobile radio. Connection of this system to the mobile radio is not included, unless specified.



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Yes

No

INTERCOM HEADSET

Two (2) UHW-10 Wireless Headset(s) plus wireless base station with single channel transmitter for each headset shall be provided with the intercom system. The red PTT button activates radio transmit. The mic is always live for intercom communication. Appropriate for driver or officer positions.

INTERCOM HEADSET

Three (3) UHW-20 Wireless Under-The-Helmet-Headset shall be provided with the system. The black PTT button activates Mic for intercom communication ONLY. Appropriate for jumpseat positions. Requires (1) WLSM wireless base station with multiple channel transmitter.

WIRELESS BASE STATION

One (1) WLSM wireless base station with multiple channel transmitter. Supports multiple UHW-20 non-radio transmit wireless headsets.

RADIO ANTENNA

One (1) radio antenna shall be supplied by the customer and installed on the apparatus. The location shall be determined by the customer.

RADIO

One (1) fire radio shall be supplied by the customer and installed on the apparatus. The location shall be determined by the customer.

RADIO SPEAKER

One (1) fire radio speaker shall be supplied by the customer and installed on the apparatus. The location shall be determined by the customer.

RADIO

One (1) fire radio remote head shall be supplied by the customer and installed on the apparatus. The location shall be determined by the customer.

VEHICLE DATA RECORDER

Apparatus shall be equipped with a Class 1 "Vehicle Data Recorder (VDR) that is connected to the power train CAN (Controller Area Network) bus consisting of transmission (TCM), engine control (ECM) and anti-lock brake (ABS) modules mounted on the apparatus. The VDR will function per NFPA 1901-2009 sections 4.11 (Vehicle Data Recorder) utilizing the power train s J1939 data.

The VDR data shall be downloadable by USB cable to a computer using either Microsoft™ or Apple™ Operating Systems using Class I/ O.E.M. supplied reporting software.



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Yes

No

SEAT BELT WARNING SYSTEM

Apparatus shall be equipped with a Class I Seat Belt Warning System (SBW) that is connected to the power train CAN (Controller Area Network) bus consisting of transmission (TCM), engine control (ECM) and anti-lock brake (ABS) modules mounted on the apparatus. The SBW will function per NFPA 1901-2009 14.1.3.10 (Seat Belt Warning) using the Class I "Seat Belt Input Module" for seat occupied and belt status information.

The SBW system shall have the ability to use either normally open (NO) or normally closed (NC) switches (user selectable by "dip switches" at ground potential) for operation.

SEAT BELT WARNING DISPLAY

A small rocker style display shall be installed in the chassis cab for the seat belt warning system.

MARKER LIGHTS

LED marker lights shall be installed on the vehicle in conformance to the Department of Transportation requirements.

LICENSE PLATE BRACKET

One (1) license plate bracket shall be provided at the rear bumper. The bracket shall have a light and shall be chrome plated.

TAIL LIGHTS

Two (2) Whelen LED tail/brake lights shall be provided. The rectangular 4"x6" light shall be red.

TURN SIGNALS

Two (2) Whelen turn signals shall be provided. The rectangular LED light shall be 4" x 6" in dimension.

BACKUP LIGHTS

Two (2) Whelen Series 600 LED backup lights shall be installed on the rear of the apparatus body. The dimensions shall be 4" x 6" and the lens color shall be clear.

FOUR LIGHT BEZEL

Two (2) tail light cluster bezels shall be supplied. Each bezel shall be designed to hold the specified rear lights located at the lower rear corners of the body.

CAB GROUND LIGHTS

Four (4) LED ground lights shall be installed under the cab doors, one (1) under each door.



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Yes

No

PUMP PANEL GROUND LIGHTS

Two (2) LED ground lights shall be installed under the pump panel running boards. One (1) light shall be located on the driver's side and one (1) light located on the officer's side of the apparatus.

REAR STEP GROUND LIGHTS

Two (2) LED ground lights shall be installed under rear step of the apparatus.

The ground lights shall automatically activate when the parking brake is applied.

REAR TAILBOARD LIGHTS

Two (2) LED step lights with clear lens shall be installed to illuminate the step surface(s) at rear of the apparatus body.

The step/walkway light switch shall be installed and wired to the parking brake.

SCENE LIGHT

Six (6) Whelen M6 Series Super-LED 6-3/4" x 4-5/15" gradient scene light(s) with chrome plated surface mount flange shall be installed.

Two (2) scene lights shall be located on the left side of the apparatus body.

Two (2) scene lights shall be located on the right side of the apparatus body.

Two (2) scene lights shall be located on the rear of the apparatus body.

One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the left side scene light(s). The switch shall be labeled "LEFT SCENE".

One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the right side scene light(s). The switch shall be labeled "RIGHT SCENE".

One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the rear scene light(s). The switch shall be labeled "REAR SCENE".

DOOR OPEN/HAZARD WARNING LIGHT

One (1) red flashing, warning light shall be provided and installed in the driver's compartment to indicate an open passenger or apparatus compartment door. The warning light shall also be attached to folding equipment racks and light towers as specified. The light shall be a flashing rectangular incandescent marker light with a red lens and shall be properly marked and identified.

Per NFPA 13.11.4, the hazard light shall be marked w/ a sign/tag that reads, "DO NOT MOVE APPARATUS WHEN LIGHT IS ON".



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Yes

No

APPARATUS WARNING PROVISIONS SPECIFICATIONS AND REQUIREMENTS

ELECTRIC SIREN

One (1) Code 3 Model #3692 V-Con electronic siren shall be mounted in the cab. The unit shall feature an electronic air horn, wail, yelp, hi-lo siren and shall have a hard wired microphone.

SPEAKER

One (1) Federal Signal DynaMax Model #ES100 100-watt speaker shall be installed. The black aluminum speaker shall include a polished trim #ESFMT.

SPEAKER LOCATION

The siren speaker shall be installed in the center of the apparatus bumper.

LIGHTBAR

One (1) Whelen Ultra Freedom Model #FN72QLED LED light bar shall be installed. The lightbar shall be 72" in length. The configuration and lens color shall be red / clear / red. The light bar shall be installed on the apparatus cab roof.

UPPER REAR WARNING LIGHTS

One (1) pair of Whelen model #900 red Super LED warning lights shall be installed, one each side on the upper rear of the apparatus body. The dimensions of the lights shall be 7" x 9".

UPPER SIDE REAR WARNING LIGHTS

One (1) pair of Whelen model #900 red Super LED warning lights shall be installed, one each side on the upper portion of the body side, towards the rear of the body. The dimensions of the lights shall be 7" x 9".

LOWER FRONT WARNING LIGHTS

One (1) pair of Whelen model #600 red Super LED warning lights shall be installed, one each side one the front of the chassis cab. The dimensions of the lights shall be 4" x 6".

INTERSECTION WARNING LIGHTS

One (1) pair of Whelen model #600 red Super LED warning lights shall be installed one each side of the chassis cab. The dimensions of the lights shall be 4" x 6".

LOWER REAR SIDE WARNING LIGHTS

One (1) pair of Whelen model #500 surface mounted red Super LED warning lights shall be installed, one each side of the apparatus body, towards the rear of the body. The dimensions of the lights shall be 1-5/8" x 5" x 1".



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Yes

No

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

LOWER REAR WARNING LIGHTS

One (1) pair of Whelen model #600 red Super LED warning lights shall be installed, one each side on the lower rear of the apparatus body. The dimensions of the lights shall be 4" x 6".

APPARATUS PAINT, LETTERING AND STRIPING SPECIFICATIONS

BODY PAINT PROCESS

- A. All bright metal fittings, if unavailable in stainless steel shall be heavily chrome plated. Iron fittings shall be copper plated prior to chrome plating.
- B. All seams shall be caulked both inside and along the exterior edges with a urethane automotive sealant to prevent moisture from entering between any body panels.
- C. The body and all parts shall be thoroughly washed with grease cutting solvent (PPG DX330) prior to any sanding. After the body has been sanded and the weld marks and minor imperfections are filled and sanded, the body shall be washed again with (PPG DX330) to remove any contaminants on the surface.
- D. The first coating to be applied is a pre-treat self-etching primer (PPG DX1787) (.5 to 1.0 dry film build) for maximum adhesion to the body material. The next two to four coats (depending on need) shall be an acrylic urethane primer surfacer (PPG K38). The film build shall be 4-6 mils when dry. The primer surfacer coat, after appropriate dry time, shall be sanded with 320-600 grit sandpaper to ensure maximum gloss of the paint. The last step is the application of at least three coats of PPG Concept acrylic urethane two-component color (single stage). The film build being 2-3 mils dry. The single stage acrylic urethane, when mixed with component (PPG DCX61) catalyst shall provide a UV barrier to prevent fading and chalking.
- E. All products and technicians are certified by PPG every two (2) years.

INTERIOR COMPARTMENT FINISH

Six (6) apparatus side compartment interiors are to be painted with a spatter finish material. The compartments shall be cleaned with a grease remover, and then the surface sanded and prepared for painting. The compartment shall be provided with two (2) coats of white epoxy. The compartments are then coated with a splatter paint top coat.

TOUCH-UP PAINT

One (1) two (2) ounce bottle of touch-up paint shall be furnished with the completed truck at final delivery.

UNDERCOATING

The entire underside of the single axle apparatus body is to be cleaned and properly prepared for



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Yes

No

application of a sprayed on automotive type undercoating for added corrosion resistance. Undercoating is to be a solvent based, rubberized coating, black in color.

CAB AND BODY STRIPE

A straight Scotchlite reflective stripe, 6" minimum in width, shall be applied horizontally around the cab and body in compliance with applicable NFPA 1901 standards. The purchaser shall specify the color and location of the stripe.

COLOR OF STRIPING MATERIAL

The color of the 3M brand striping material shall be white.

CHEVRON STRIPING

The entire rear portion of the body shall have 3M reflective red and amber striping installed. The chevron style striping shall be applied at a 45-degree upward angle pointing towards the center upper portion of the rear panel.

REFLECTIVE STRIPE

Reflective striping shall be installed on the interior of each chassis door.

LETTERING

All lettering shall be supplied by the purchaser upon delivery of the apparatus.

APPARATUS EQUIPMENT SPECIFICATIONS AND REQUIREMENTS

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 with model SQCH-44H horizontal mounting brackets.

Mounting location shall be determined at the pre-construction conference.

ROOF LADDER

One (1) Duo Safety Model 775-A, 10 foot aluminum roof ladder with folding steel roof hooks on one end and steel spikes on the other end shall be provided on the apparatus. The ladder shall meet or exceed all latest NFPA Standards.

EXTENSION LADDER

One (1) Duo-Safety Model 925-A, 26 foot three (3) section aluminum extension ladder shall be provided on the apparatus. The ladder shall meet or exceed all the latest NFPA standards.



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Yes

No

FOLDING LADDER

One (1) Duo Safety Model 585-A, 10 foot folding aluminum ladder shall be provided on the apparatus. The ladder shall meet or exceed all the latest NFPA Standards.

PIKE POLES

All NFPA required pike poles will be supplied and installed by the Customer before the apparatus is placed into service.

PIKE POLE

One (1) 6' pike pole with round handle shall be provided. The pike pole shall be of fiberglass construction.

PIKE POLE

One (1) 8' pike pole with round handle shall be provided. The pike pole shall be of fiberglass construction.

SCBA MOUNTING BRACKET

Four (4) Zico 45 minute SCBA air pack mounting with spring tension bracket included.

The specified SCBA brackets shall be compartment mounted per purchaser requirements.

SUCTION HOSE

Two (2) 5.0" x 10 foot lengths of PVC flexible suction hose shall be supplied. The suction hose shall have light weight couplings provided.

HOSE COUPLINGS

Lightweight aluminum couplings shall be provided on the suction hose. A long handle female swivel shall be provided on one end and a rocker lug male shall be provided for the other end.

MISCELLANEOUS HARDWARE

Miscellaneous loose hardware consisting of bolts, nuts, washers, and screws shall be supplied with the apparatus at time of delivery.

APPARATUS WARRANTY SPECIFICATIONS AND REQUIREMENTS

TILT TESTING FACILITIES AND REQUIREMENTS

The apparatus, prior to acceptance, will be required to meet the stability test of the applicable NFPA Automotive Fire Apparatus Standard. The final and completed vehicle shall be tilt-tested to the applicable standards and photographed to ensure that this procedure and certification can be verified. Each proposer shall have the facilities to perform these tests at the manufacturing



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Yes

No

site. The proposer shall own the facilities to perform the above test, and shall not contract with an outside agency to have these tests performed on this apparatus.

BUMPER TO BUMPER WARRANTY

The manufacturer shall provide a one (1) year bumper-to-bumper warranty. The manufacturer shall supply details of their warranty information with their proposal submission.

ALUMINUM BODY WARRANTY - FIVE YEAR

The manufacturer shall provide a five (5) year structural and corrosion perforation warranty for the fabricated aluminum body. The manufacturer shall supply details of their warranty information with their proposal submission.

GALVANIZED STEEL SUBFRAME WARRANTY

The manufacturer shall provide a lifetime warranty for the galvanized steel subframe of the apparatus body. The manufacturer shall supply details of their warranty information with their proposal submission.

PAINT WARRANTY FIVE YEAR

The manufacturer shall provide a five (5) year paint warranty for all portions of the apparatus that they have painted. The manufacturer shall supply details of their warranty information with their proposal submission.

FIRE PUMP WARRANTY

A six (6) year warranty for the Darley fire pump shall be provided. The manufacturer shall supply details of their warranty information with their proposal submission.

GALVANIZED PLUMBING WARRANTY

The manufacturer shall provide a ten (10) year warranty on the galvanized plumbing components and installation. The manufacturer shall supply details of their warranty information with their proposal submission.

COMPLETE PRINTED MANUAL

- A. The manufacturer shall provide with the vehicle upon delivery, one (1) complete delivery manual. This manual shall be in a notebook type binder, with reference tabs for each section of the vehicle. A companion compact disk (CD) with all of the printed material in an electronic format (Adobe Acrobat PDF) shall be provided.
- B. Within each section shall be:
 - 1. Individual component manufacturer instruction and parts manuals
 - 2. Warranty forms for the body
 - 3. Warranty forms for all major components
 - 4. Warranty instructions and format to be used in compliance with warranty



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Yes

No

- obligations
5. Wiring diagrams
 6. Installation instruction and drawings for major parts
 7. Visual graphics and electronic photos for the installation of major parts
 8. Necessary normal routine service forms, publications and components of the body portion
 9. of the apparatus
 10. Technical publications for training and instruction on major body components
 11. Warning and safety related notices for personnel protection
 12. Cab and chassis manuals on parts, service and maintenance shall be provided

C. The manufacturer shall supply details of their manual information with their proposal submission.

"ON-LINE" SERVICE MANUAL SUPPORT

As part of the standard delivery manual, the manufacturer shall give a password-protected link to the end user, allowing access to the manufacturers' database on service parts. The internet-based system shall allow the end user to access the major component supplier's service parts listing such as Hale, Waterous, Akron, etc. This shall be accomplished with simplistic point and click features on the manufacturer line item within the "stripper" or "line sheet". This will include automatic updates, printable schematics, and manufacturer's web links and is available in a commercially available format of Adobe Acrobat Reader to access these documents. The manufacturer shall submit with the proposal, a sample set of on line Adobe formatted material that has been printed from the manufacturer's website. Failure to do so will result in rejection of the proposal. Reference to "on delivery" or "at prebuild" submission is not an acceptable response for the proposal document.

Parts Listings within Manuals

The manuals will include cross-reference part numbers from the apparatus manufacturers' part number to the vendor parts. Example: Brand X Fire Apparatus, Hydraulic Ladder Rack, Part #WW-MN-0302 cross-referenced to Ziamatic Corporation Part 098-MN2345. This will allow for reference between individual parts and complete installation assemblies as completed by the body builder. The manuals will list all components of the vehicle that includes a vendor part utilized in a complete installation via the manufacturers "line item sheet" or "stripper" utilized to manufacture the completed vehicle. These are "As Built" and proposals with "typical" or "generic" manuals will be rejected.

Illustrative Schematics within Manuals

The manufacturer shall include installation diagrams and drawings of all major sub-assemblies. This will include components such as hydraulic ladder rack assemblies, pump panels, tanks, fire pumps, etc. The drawings shall be linked via an Internet based service program, in an electronic format from the manufacturers "stripper" (line item listing) of the manufacturing document. The manufacturer shall submit, with the proposal, a sample schematic. Failure to do so will result in rejection of the proposal. Reference to "on delivery" or "at prebuild" submission is not an acceptable response for the proposal document.



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Yes

No

Digital Images within Manuals

In addition to two and three-dimensional installation drawings, the manufacturer shall make accessible, via an internet based link, the actual photos of the installed components listed within the "stripper" or line sheet. This will include, but not limited to Wiring terminals, main body distribution strips, fire pump shifting, auxiliary components, etc. The manufacturer shall submit a sample of these with the proposal submission. Failure to submit the digital images with the proposal will result in rejection of the proposal. Reference to "on delivery" or "at prebuild" submission is not an acceptable response for the proposal document.

Installation Instructions within Manuals

The manufacturers "work instructions" or "installation instructions" shall be included with the service manuals. These documents shall be accessible via a web-based link to the individual vehicle manufactured. The work instructions shall give systematic instructions of the installation process. The manufacturer shall submit, with the proposal, a sample set of instructions. Failure to do so will result in rejection of the proposal. Reference to "on delivery" or "at prebuild" submission is not an acceptable response for the proposal document.

Automatic Updates of Manuals and Parts Listings

The online manuals will include automatic updates that are accessible via the web link. When clicking on the part within the manufacturer's stripper or line sheet, it will allow the end user to access the component manufacturer website for updated information. This will allow for latest parts and service components from the individual part manufacturer or vendor.

Electrical Schematics

To maintain the vehicles electrical systems, the manufacturer shall provide to the purchaser the instructional manuals, complete electrical information and schematics on the vehicle. The electrical information shall be provided as follows:

Wiring Systems 12 and 120 Volt:

- Graphic symbols for electrical diagrams.
- Wire labeling, imprinting codes and index.
- Computer generated electrical schematics indicating the circuit number, wire size, switches, circuit breaker and terminals on the vehicle.

The manufacturer shall submit, with the proposal, a sample set of diagrams. Failure to do so will result in rejection of the proposal. Reference to "on delivery" or "at prebuild" submission is not an acceptable response for the proposal document.