



CONTRACT #2085

FURNISHING ONE TANKER/PUMPER TRUCK TO THE VERNON FIRE DEPARTMENT

Bids Received by 10:00 am on 1/28/2022

Bids Opened via Zoom at 11:00 am on 1/28/2022

**Town of Vernon, CT
CONTRACT #2085
FURNISHING ONE TANKER/PUMPER TRUCK TO VERNON FIRE DEPARTMENT**

Invitation to Bid/Legal Notice

The Town of Vernon, Connecticut is seeking a qualified firm to furnish one (1) TANKER/PUMPER TRUCK to the Vernon Fire Department. A firm must have a demonstrated experience in providing such equipment and adhere to all State, Federal and NFPA 1901 standards and requirements typical for this equipment.

Questions about this RFP should be directed to Stephen Eppler, Fire Chief, by email only to seppler@vernon-ct.gov, no later than Monday, January 24, 2022 at 3:30 PM. Answers to questions received will be posted by Wednesday, January 26, 2022 on the Town's website at www.vernon-ct.gov/legal-notice and on the Connecticut State Department of Administrative Services (DAS) website at <https://portal.ct.gov/DAS/CTSource/CTSource> by referencing Contract #2085. It is the sole responsibility of the respondent to review any or all addendum or question responses related to this RFP.

Two (2) copies of the proposal should be submitted in a sealed envelope marked "**BID DOCUMENT- DO NOT OPEN - CONTRACT #2085 – TANKER/PUMPER**" clearly marked on the outside of the envelope to: Michael J. Purcaro, Town Administrator, Town of Vernon, Memorial Building, 14 Park Place, 3rd Floor, Vernon, Connecticut 06066 no later than **10:00 AM on Friday, January 28, 2022**. Emailed, faxed or late bids will not be accepted.

Received bids will be opened via Zoom web-conferencing on **Friday, January 28, 2022 at 11:00 AM**. Interested parties may access the bid opening via Zoom web-conferencing at <https://us02web.zoom.us/j/89830909881?pwd=QTNHRTdaZUYwaFlqNHFFbURoaDEzdz09>. Please use **Meeting ID:** 898 3090 9881 and **Passcode:** 1207 or **Dial by location** 1 929 205 6099. Bid results will be posted on both the Town website.

The selected firm must meet all municipal, state and federal AA and EEO practices and requirements. MBE's, WBE's, SBE's are encouraged to apply. The Town reserves the right to reject any or all proposals in whole or part, to award any one service or group of services or all services, to negotiate with any or all companies submitting proposals, and to enter into an agreement with any company for any services mentioned in this RFP; if it is deemed to be in the best interest of the Town.

Confidentiality - If Respondent believes that any information in its proposal should be treated as confidential that material shall be clearly marked. The Town shall endeavor to protect confidential material from disclosure to non-Town employees to the extent required by State or Federal law. In no event will the Town be responsible for the inadvertent disclosure of your response to this RFP.

Michael J. Purcaro
Town Administrator

Town of Vernon, CT

STANDARD INSTRUCTIONS TO BIDDERS

These instructions are standard for all proposals issued by the Town of Vernon, Connecticut for the purchase of all supplies, materials, equipment and the furnishing of certain services. **The Town may delete, supersede or modify any of these standard instructions for a particular proposal by indicating such change in a section entitled "Special Instructions to Bidders".**

1. The attached proposal is signed by the bidder with full knowledge of, and agreement with, the general specifications, conditions and requirements of this bid.
2. Proposals must be submitted on the enclosed form with any required bid security.
3. Bids shall be submitted in sealed envelopes which shall be addressed to the Town Administrator, 14 Park Place, Vernon, Connecticut 06066 and shall be clearly marked "BID DOCUMENT - DO NOT OPEN". The bid envelope shall indicate the contract number as shown on the "Invitation To Bid". Emailed, faxed or late bids will not be accepted.
4. Bids received later than the time and date specified in the "Invitation To Bid" will not be considered. Withdrawal of bids, received later than the time and date set for the bid opening, will not be considered.
5. All deliveries of commodities hereunder shall comply in every respect with all applicable laws of the Federal Government and the State of Connecticut.
6. The bidder shall insert the price per stated unit and extend a total price for each item. IN THE EVENT THAT THERE IS A DISCREPANCY BETWEEN THE UNIT PRICE AND THE TOTAL PRICE EXTENSION, THE UNIT PRICE WILL GOVERN.
7. In accordance with the provisions of Section 12-412 (a) of the Connecticut General Statutes, the Town of Vernon is exempt from the payment of Federal or State tax and such tax or taxes shall not be included in bid prices.
8. Unless otherwise stated herein, all deliveries made under this contract must consist of new merchandise.
9. The Town reserves the right to reject any and all bids, wholly or in part; to waive technical defects, and to make awards in the manner deemed to be in the best interests of the Town.
10. The Town will not accept any additional charges for freight or shipping.
11. The successful bidder must carry the following insurance coverages:

Commercial General Liability (Town of Vernon added as additional insured):

Each Occurrence:	\$ 1,000,000
Personal/Advertising Injury per Occurrence:	\$ 1,000,000
General Aggregate:	\$ 2,000,000
Product/Completed Operations Aggregate:	\$ 2,000,000
Fire Damage Legal Liability	\$ 100,000

Automobile Liability (Town of Vernon added as additional insured):

Each Accident:	\$ 1,000,000
Hired/Non-owned Auto Liability:	\$ 1,000,000

Workers' Compensation/Employers Liability

Workers' Compensation Statutory Requirement set forth by State of CT

Employers Liability

Each Accident	\$ 100,000
Disease-Policy Limit	\$ 500,000
Disease-Each employee	\$ 100,000

Umbrella/Excess Liability (*following form of general liability, auto liability and employer liability*):

Each Occurrence:	\$ 1,000,000
General Aggregate:	\$ 2,000,000
Product/Completed Operations Aggregate:	\$ 2,000,000

Professional Liability (*where required*)

Each Claim:	\$ 1,000,000
Annual Aggregate	\$ 1,000,000

All insurance may not be canceled or modified without thirty (30) days written notice to the Vernon Town Administrator, 14 Park Place, Vernon, CT 06066.

12. All bids must be accompanied by bid security in the sum of not less than five percent (5%) of the total bid and shall be in the form of a bid bond, a certified check, a treasurer's or cashier's check drawn on a National or State bank or trust company and shall be made payable to the "Town of Vernon".

The bid security shall secure the execution of the contract by the successful bidder.

Should any bidder to whom an award is made fail to enter into a contract within ten (10) days, exclusive of Saturdays, Sundays and legal holidays, after notice of the award has been mailed to the bidder, the amount so received from the bidder through his/her bond shall become the property of the Town of Vernon, Connecticut as liquidated damages for failure.

The bid security, exclusive of the successful bidder, will be returned upon execution of the contract, but in no case later than forty-five (45) days after the opening of the bids.

The bid security of the successful bidder shall be held until such time as all conditions of the proposal have been met.

Town of Vernon, CT

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Bids Opened via Zoom at 11:00 am on 1/28/2022

SPECIAL INSTRUCTIONS TO BIDDERS

1. Questions about this RFP should be directed to Stephen Eppler, Fire Chief, by email only to seppler@vernon-ct.gov, no later than Monday, January 24, 2022 at 3:30 PM. Answers to questions received will be posted by Wednesday, January 26, 2022 on the Town's website at www.vernon-ct.gov/legal-notices and on the Connecticut State Department of Administrative Services (DAS) website at <https://portal.ct.gov/DAS/CTSource/CTSource> by referencing Contract #2085. It is the sole responsibility of the respondent to review any or all addendum or question responses related to this RFP.
2. The Town reserves the right to reject any or all proposals in whole or part, to negotiate with any or all companies submitting proposals, and to enter into an agreement with any company for any services mentioned in this RFP; if it is deemed to be in the best interest of the Town.
3. All insurance documents must be submitted with the executed contract. Town of Vernon must be listed as Certificate Holder and Additional Insured.
4. Deviations: Any and all deletions, variations and exceptions to the specifications must be stated in writing at time of bidding and must be attached to the "Proposal" section of contract.

Town of Vernon, CT

CONTRACT #2085

FURNISHING ONE TANKER/PUMPER TO THE VERNON FIRE DEPARTMENT

PROPOSAL

TO: Town of Vernon
14 Park Place
Vernon, CT 06066

Sirs:

THE UNDERSIGNED HEREBY DECLARES that:

A. No person or persons other than those named herein are interested in this Proposal or in the Contract proposed to be taken; that it is made without any connection with any other person or persons making any proposal for the same work, and is in all respects fair and without collusion or fraud; that no person acting for or employed by the Town of Vernon (the Town) is now or will hereafter be directly or indirectly interested therein, or in any portion of the profits thereof in any manner which is unethical or contrary to law;

B. He has read the information contained herein relating to the work;

C. That in the event a Contract, as contemplated by this Proposal, is awarded to him, he will enter into a written Contract with the Town, and agrees that in case he fails to do so, the Town may determine that the bidder has abandoned the Contract, and thereupon the acceptance of this Proposal and the award shall be null and void, and that the proposal guarantee may be forfeited in whole or in part to the Town as the Town may determine, and he will, by such Contract, agree to furnish all materials herein required, within the time stipulated by the Town, will perform all services and will assume all liabilities and obligations connected therewith, all in accordance with the Contract, Specifications, and Instructions to Bidders, all of which are made a part hereof, and will accept in full payment therefore the following sums, to wit:

1. One (1) TANKER/PUMPER List total cost (both numeric and written). List manufacturer and model.

\$ _____ DOLLARS

(Written)

\$ _____

(Numeric)

2. _____
Manufacturer **Model**

3. The bid is from a single source apparatus manufacturer. **Yes** **No**

4. The bidder has taken _____ exceptions to the bid. All bid exceptions are documented as outlined in the bid.

5. The vehicle manufacturer has a certified Quality Management System under the requirements of ISO 9001:2015. **Yes** **No**

6. The vehicle manufacturer meets all warrantee requirements as specified in the bid. **Yes** **No**

7. The vehicle manufacturers authorized service facility (where all warrantee and out of warrantee repairs will be made) is located _____ miles of Vernon, Connecticut.

8. Bidder shall submit the name, address, responsible party and phone number of three or more municipalities where comparable equipment has been sold. If none, state so.

1) _____

2) _____

3) _____

9. The undersigned declares that the signer of this proposal is:

- (a) INDIVIDUAL doing business as
- (b) PARTNERSHIP doing business as
- (c) CORPORATION entitled

organized under the laws of the State of _____ and having its principal offices at _____ . The names of all partners of a partnership or the principal offices of a corporation will be submitted upon request.

Signature of Authorized Representative

Print Name and Title

Print Firm Name

Print Street Address

Print City, State and Zip Code

Contact Name

Area Code and Telephone Number

Email Address

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CONTRACT

This agreement, made and concluded by and between the Town of Vernon, a Municipal corporation organized and existing under the laws of the State of Connecticut, acting herein by its Town Administrator duly authorized, hereinafter designated the "Town" and _____ (being the party named in the attached copy of the proposal) hereinafter designated the "Contractor".

A. WITNESSETH, That said Contractor has agreed, and by these presents does for his, their, or its heirs, executors, administrators, successors, and assigns covenant, promise and agree to and with the said Town, for the consideration hereinafter mentioned and contained, and under the penalty expressed in bonds hereunto annexed, that the said Contractor shall and will, at his, its, or their own proper charge, cost and expense furnish all materials in accordance with this contract and the specifications which are a part hereof, viz.;

FURNISHING ONE TANKER/PUMPER TRUCK TO THE VERNON FIRE DEPARTMENT

all to be in accordance with the terms of the proposal for said material submitted to the Town Administrator of the Town, and made part of this contract.

B. INDEPENDENT CONTRACTOR

The selected Company is an independent contractor and is not an employee, partner, or co-venture of, or in any other service relationship with the Town of Vernon. The Company is not authorized to speak for, represent, or obligate the Town of Vernon in any manner without the prior expressed written authorization from the Town of Vernon.

C. **TOWN ADMINISTRATOR TO BE JUDGE.** The Town Administrator of the Town and his duly authorized representatives, hereinafter referred to as the "Administrator" shall be judge of the character, nature and fitness of all the materials furnished under this contract.

D. **CONTRACTOR RESPONSIBLE FOR WHOLE WORK.** (1) The Contractor shall be responsible for the entire work until its final acceptance, and any unfaithful or imperfect work or defective material that may be discovered at any time before said final acceptance shall be immediately corrected or removed by said Contractor on requirement of the Administrator.

(2) **DEFECTS IN MATERIAL.** In the case the nature of the defects is such that it is not expedient to have them corrected, the Administrator shall have the right to deduct from the amount due the Contractor on the final settlement of the accounts such sum of money as he considers a proper equivalent for the difference between the value of the materials specified and that furnished, or a proper equivalent for the damage.

(3) **PARTIAL PAYMENT NOT ACCEPTANCE.** It is also agreed that this is an entire contract for one whole and complete work, and that no partial payments on account by the Town, nor the presence of the Administrator or inspectors, or their supervision or inspection of work or materials, shall constitute an acceptance of any part of the work before its entire completion and final acceptance.

E. (1) **COMMENCEMENT AND COMPLETION OF WORK.** The Contractor shall furnish the material contracted for within the time stated therefore in the specifications for this work.

(2) **EXTENSION OF TIME.** If the Contractor is delayed in the prosecution or completion of the work by or on account of any act or omission of the Town, or by strikes or causes beyond control of the Contractor, he shall be entitled to such reasonable extension of time for the completion of the work as may be decided upon by the Administrator, provided, however, that no claim for an extension of time for any reason shall be allowed, unless, within three days after such delay occurs, notice in writing of the fact of said delay, its causes, and the extension claimed, shall be given by the Contractor to the Administrator.

(3) **TIME LIMITS.** All time limits stated in the Contract Documents are of the essence of the Contract.

F. (1) **CONTRACTOR'S DUTIES AND LIABILITIES.** The Contractor shall comply with all local, state and national laws and regulations, and with all Town ordinances in the prosecution of the work, and shall secure all necessary permits and licenses.

(2) **INDEMNIFICATION/HOLD HARMLESS**

a. The Contractor agrees to defend, indemnify and hold harmless the Town of Vernon, its respective officers, employees, elected officials, agents, servants and volunteers from and against any and all claims, liabilities, obligations, causes of action of whatsoever kind and nature for damages, including but not limited to damage to the premises or other property, and costs of every kind and description arising from its entry upon the premises, or arising from work or other activities conducted thereon, alleging but not limited to bodily injury, personal injury, medical malpractice, property damage caused by the Company and its employees, contractor, sub-contractors and agents. This indemnification includes the Company's duty to defend the Town of Vernon from any such claims.

b. The Contractor must carry the following insurance coverages:

Commercial General Liability (Town of Vernon added as additional insured):

Each Occurrence:	\$ 1,000,000
Personal/Advertising Injury per Occurrence:	\$ 1,000,000
General Aggregate:	\$ 2,000,000
Product/Completed Operations Aggregate:	\$ 2,000,000
Fire Damage Legal Liability	\$ 100,000

Automobile Liability (Town of Vernon added as additional insured):

Each Accident:	\$ 1,000,000
Hired/Non-owned Auto Liability:	\$ 1,000,000

Workers' Compensation/Employers Liability

Workers' Compensation Statutory Requirement set forth by State of CT Employers Liability

Each Accident	\$ 100,000
Disease-Policy Limit	\$ 500,000
Disease-Each employee	\$ 100,000

Umbrella/Excess Liability (following form of general liability, auto liability and employer liability):

Each Occurrence:	\$ 1,000,000
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Product/Completed Operations Aggregate:	\$ 2,000,000

Professional Liability (where required)

Each Claim:	\$ 1,000,000
Annual Aggregate	\$ 1,000,000

All insurance may not be canceled or modified without thirty (30) days written notice to the Vernon Town Administrator, 14 Park Place, Vernon, CT 06066.

c. **WAIVER OF SUBROGATION REQUIREMENT**

The Contractor will require all insurance policies in any way related to the work and secured and maintained by the Company to include clauses stating each carrier will waive all rights of recovery, under subrogation and otherwise, against the Town of Vernon, and its respective officers, employees, agents, servants, elected officials, and volunteers. The Contractor shall require of subcontractors, by appropriate written agreements, similar waivers each in favor of the Town of Vernon.

d. It is agreed between the parties hereto that the amount of insurance set forth above does not in any way limit the liability of the Contractor to the Town by virtue of his promise to hold the Town harmless so that in the event that any claim results in a settlement or judgement in any amount above said limits, the Contractor shall be personally liable to the Town for the difference.

e. Certificates of insurance company must be submitted to the Administrator before the Contractor starts work. Should any insurance expire or be terminated during the period in which the same is required by this contract, the Administrator shall be notified thirty (30) days in advance and such expired or terminated insurance must be replaced with new insurance and new certificate furnished to

the Administrator. Failure to provide the required insurance and certificates may, at the option of the Town, be held to be a willful violation of this Contract.

(3) **PATENTS.** The Contractor shall defend any suits or proceedings brought against the Town for alleged infringements of patents by or by reason of any material furnished under this contract, and shall pay any damage or costs that may be awarded against the Town as a result of such suits, free of all expense to the Town.

G. **AVOIDANCE OF CONTRACT.** If this Contract shall be assigned without the written consent of the Administrator, or if at any time the Administrator shall be of the opinion that the work on said material is necessarily or unreasonably delayed, or that the Contractor is willfully violating any of the conditions or agreements of this contract, or that the progress of the work is, in his opinion, being so delayed that said material cannot be supplied within the required time, the Administrator may give written notice, postage prepaid, to the Contractor, at his business address, to that effect. If the Contractor shall not, within ten days after the mailing of such notice, take measures as well, in the judgement of the Administrator, insure the satisfactory completion of the work, he may notify the Contractor in writing, to discontinue all work on said material under this contract; and it is hereby agreed that the Contractor shall thereupon at once stop work and cease to have the right or claim to possession of the material; and the Town may, by means of such other agents or contractors as shall to it seem advisable, complete the work herein described, or such part thereof as it may deem necessary, and may take possession of and use such materials, except as otherwise provided. The Contractor shall not remove any portion of the materials after receiving such notice as aforesaid. And said Town is hereby authorized and empowered to apply sums of money due or to become due to said Contractor under this Contract by way of reduction in damages, and as part payment of such additional expense incurred by the Town as aforesaid.

H. **TERMINATION**

Termination for Cause: If, through any cause, the Contractor shall fail to fulfill in a timely and proper manner the obligations under this RFP, or if the Contractor shall violate any of the covenants, agreements, or stipulations of this RFP, the Municipality shall, thereupon, have the right to terminate this RFP by giving written notice to the Contractor of such termination and specifying the effective date thereof, at least five (5) days before the effective date of such termination. In such event, all finished or unfinished documents, data, studies, and reports prepared by the Contractor under this RFP shall, at the option of the Municipality, become its property and the Company shall be entitled to receive just and equitable compensation for any satisfactory work completed prior to the effective date of termination.

Termination for Convenience: The Town may terminate this contract at any time by a notice in writing, effective not less than thirty (30) days prior to the termination date. If the RFP is terminated by the Municipality as provided herein, the Contractor will be paid for services performed up to the date of termination.

I. (1) **PAYMENTS.** The Town will pay and the Contractor will receive, as full compensation for furnishing such materials, the amount stated in the proposal, or the sums of money computed at the several unit prices stated in the proposal submitted by the Contractor to the Administrator. A copy of the proposal is made a part of this Contract. The Town may make such deductions from these sums as are provided for in this Contract.

(2) **FINAL COMPLETION AND FINAL PAYMENT.** Upon receipt of written notice that the work is ready for final inspection and acceptance and upon receipt of Final Application for Payment, the Administrator will promptly make such inspection and, when he finds the work acceptable under the Contract Documents and the contract fully performed, he will promptly issue a final Certificate of

Payment stating that to the best of his knowledge, information and belief, and on the basis of his observations and inspections, the work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor, and noted in said final Certificate, is due and payable. The Administrator's final Certificate for Payment will constitute a further representation that the conditions precedent to the Contractor's being entitled to final payment as set forth herein had been fulfilled. The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of the final Application for Payment.

(3) **NO INTEREST TO BE PAID.** No interest is to be allowed or paid by the Town upon any monies retained under the provisions of this contract.

(4) **CONTINGENT UPON AVAILABILITY OF FUNDS**

The Town's obligation under this RFP is contingent upon the availability of appropriated funds from which payment for RFP purposes can be made. No legal liability on the part of the Town for any payment may arise until all funds are made available and approved for this RFP and until a Purchase Order has been issued.

J. **CONTENTS OF CONTRACT.** The information for bidders, the proposal, the specifications, together with special provisions following herewith, and the bond and any and all additions which may be inserted or attached to any, or all of the sections as listed above, together with the drawings named in the information for bidders are made a part of this Contract.

K. **AUTHORITY AND DUTIES OF INSPECTOR.** An Inspector is a representative (but not a duly authorized representative as referred to in Article B of this Contract) of the Administrator assigned to make any and all necessary inspections of the work performed and materials furnished by the Contractor. Inspectors shall be authorized to inspect all work done on materials furnished. Such inspection may extend to all or any part of the work and to the preparation of the materials to be used. In case of dispute arising between the Contractor and the Inspector as to materials furnished or the manner of performing the work, the Inspector shall have the authority to reject material or suspend the work until the question at issue can be referred to and decided by the Administrator.

The Inspector shall not be authorized to revoke, alter, enlarge, relax or release any requirements of the specifications nor to approve or accept any portion of the work, nor to issue instruction contrary to the plans and specifications. The Inspector shall not act as foreman or perform other duties of the Contractor nor interfere with the management of the work by the Contractor. Any advice which the Inspector may give the Contractor shall in no way be construed as binding the Administrator of the Town in any way nor releasing the Contractor from the fulfillment of the terms of the Contract.

L. **FAIR EMPLOYMENT PRACTICES.** The Contractor hereby agrees that neither he nor his subcontractors will refuse to hire or employ or to bar or to discharge from employment an individual or to discriminate against him in compensation or in terms, condition or privilege of employment because

of race, color, religious creed, age, sex, national origin or ancestry, except in the case of bona fide occupational qualification or need.

The Contractor further agrees that neither he nor his subcontractors will discharge, expel or otherwise discriminate against any person because he has opposed any unfair employment practice or because he has filed a complaint or testify or assisted in any proceeding under Section 31-127 of the Connecticut General Statutes. The advertisement of employment opportunities will be carried out in such manner as not to restrict such employment so as to discriminate against individuals because of their race, color, religious creed, age, sex, national origin or ancestry, except in the case of a bona fide occupational qualification or need.

The terms stated above are taken from Section 31-126 of the Connecticut General Statutes, "Unfair Employment Practices".

M. LAWS AND JURISDICTION. The parties hereto agree that this contract is subject to the laws and jurisdiction of the State of Connecticut.

N. COMPLIANCE WITH THE IMMIGRATION REFORM AND CONTROL ACT OF 1986. The Contractor hereby agrees that he is aware of and has complied with the hiring and documentation requirements of the Immigration Reform and Control Act of 1986.

The Contractor agrees that it has asked for and examined documentation in order to verify the legal employability of its employees and has executed the appropriate forms attesting thereto pursuant to the Act.

The Contractor further agrees to indemnify and hold the Town harmless from any costs and/or penalties incurred, including but not limited to fines, attorneys' fees and costs arising from a claim of violation of said Act.

O. DISPUTES. The parties agree that any dispute will be submitted to the Superior Court, Judicial District of Tolland, at Rockville, Connecticut.

P. ANTI-TRUST PROVISIONS. The Contractor or Subcontractor offers and agrees to assign to the Town all right, title and interest in and to all causes of action it may have under Section 4 of the Clayton Act, 15 U.S.C. Section 15, or under Chapter 624 of the General Statutes of Connecticut, arising out of the purchase of services, property or intangibles of any kind pursuant to a public purchase contract or subcontract. This assignment shall be made and become effective at the time the Town awards or accepts such contract, without further acknowledgement by the parties.

IN WITNESS WHEREOF, the parties hereto set their hands and seal this _____ day of _____, 2022.

Signed in the presence of:

THE TOWN OF VERNON

By:

Michael J. Purcaro
Town Administrator

Signed in the presence of:

<COMPANY NAME>

By:

Name:
Title:



SPECIFICATIONS

CONTRACT #2085

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VERNON FIRE DEPARTMENT**

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Bidder Complies	
Yes	No

SPECIFICATIONS FOR A TANKER/PUMPER

Sealed bids will be received by Town of Vernon Fire Department for the furnishing of all necessary labor, equipment and material for the Fire Apparatus and other equipment as outlined in the following specifications.

INTENT OF SPECIFICATIONS

It shall be the intent of these specifications to cover the furnishing and delivery of a complete fire apparatus. These detailed specifications cover the requirements as to the type of construction and test to which the apparatus shall conform, together with certain details as to finish, equipment and appliances with which the successful bidder shall conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor. The manufacturer shall provide loose equipment only when specified by the customer. Otherwise, in accordance with the current edition of NFPA 1901 standards, the proposal shall specify whether the fire department or apparatus dealership shall provide required loose equipment.

In order to ensure fair, ethical, and legal competition, neither original equipment manufacturer (O.E.M.) or parent company of the O.E.M. shall have never been fined or convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market (no exception).

The purchaser's standards for bidding automotive fire apparatus must be strictly adhered to, and all bid forms and questions must be complete and submitted with the bid. **Omissions and variations shall result in immediate rejection of the bid.**

Bids shall only be considered from companies that have an established reputation in the field of fire apparatus construction and have been in business for a minimum of 20 years. Furthermore, in order to insure fair, ethical, and legal competition, neither the original equipment manufacturer (O.E.M.) nor parent company of the O.E.M. shall have ever been fined or convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market (no exception).

If a bidder represents more than one fire apparatus company or brands of apparatus, they must only bid the top of the line that meets specification.

Each bidder shall furnish satisfactory evidence of their ability to construct the apparatus specified.

Any apparatus manufacturer or their parent company who has had a performance bond called in the last 10 years, shall not be eligible to bid. Any bids from these manufactures shall be immediately rejected (no exception).

Each bid shall be accompanied by a set of manufacturer's set of specifications consisting of a detailed description of the apparatus, construction methods, and equipment proposed to which

Bidder Complies	
Yes	No

the apparatus furnished under contract shall conform. These specifications shall indicate size, type, model and make of all components parts and equipment, providing proof of compliance with each and every item in the departments advertised specifications. A letter only, even though written on company letterhead, shall not be sufficient. **An exception to this requirement shall not be acceptable.**

In accordance with the current edition of NFPA 1901 standards, the proposal shall specify whether the fire department or apparatus dealership shall provide required loose equipment.

The purchaser will utilize this advertised specification to compare all submitted bid proposals. To facilitate comparison, all bid proposal specifications shall be submitted in the same sequence as the advertised specification. Any bidder who fails to submit a set of bid proposal specifications, or who photo copies and submits these specifications as their own construction details will be considered non responsive. This shall render such proposal ineligible for award.

The purchaser's specification shall, in all cases, govern the construction of the apparatus, unless a properly documented exception or deviation was approved. Any bid indicating that the manufacturer's proposal shall supersede the purchaser's specification will be considered a complete substitute and immediately rejected.

THE PURCHASER HAS THE RIGHT TO REJECT ANY BIDS WHICH DOES NOT MEET THESE SPECIFICATIONS AND IS THE SOLE DECIDER TO DEEM WHICH BID IS IN THE BEST INTEREST OF THE PURCHASER.

EXCEPTIONS

These specifications are based upon design and performance criteria which have been developed by the fire department as a result of extensive research and careful analysis. Subsequently these specifications reflect the only type of fire apparatus that is acceptable at this time and all specifications herein contained are considered as minimum. Therefore exceptions to the specifications may not be accepted.

Bidders shall indicate in the "yes/no" column if their bid complies on each item (paragraph) specified.

If a product brand name is specified and is commercially available to all bidders, an exception to such items is not acceptable and such bid may be rejected.

Exceptions shall be allowed if they are equal to or superior to that specified and provided they are listed and fully explained on a separate page. All deviations, no matter how slight, shall be clearly explained on a separate sheet, in the bid sequence, citing the page and paragraph number(s) of the specifications, how the proposal deviation is different, how the deviation meets or exceeds the specifications and why it is necessary, and entitled "EXCEPTIONS TO SPECIFICATIONS". The buyer reserves the right to require a bidder to provide proof in each case that a substituted item is equal to that specified. The buyer shall be the sole judge in determination of acceptable substitutes.

	Bidder Complies	
	Yes	No
Proposals that are found to have deviations without listing them or bids taking total exceptions to these advertised specifications will be rejected (no exception).		
Bids not including all exceptions is a material breach and shall result in the bid being immediately rejected (no exception).		
<u>GENERAL DESIGN AND CONSTRUCTION</u>		
The cab, chassis, pump module, and body are to be entirely designed, assembled and painted by the prime vehicle manufacturer, which minimizes third party involvement on engineering, design, service and warranty issues.		
All bidders shall provide a list of the company, manufacturing location, and engineering source for each individual major component, including but not limited to the welded cab assembly, the pumphouse module assembly, the chassis assembly, body and electrical system. Apparatus using any subcontracted cab, chassis, pump module, electrical system or body will not be acceptable.		
The apparatus shall be designed with due consideration to distribution of load between the front and rear axles. Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Association.		
The bidder shall make accurate statements as to the apparatus weight and dimensions.		
<u>QUALITY AND WORKMANSHIP</u>		
The design of the apparatus shall embody the latest approved automotive engineering practices. The workmanship shall be of the highest quality in its respective field. Special consideration shall be given to the following points: Accessibility of the various units which require periodic maintenance; ease of operation (including both pumping and driving); and symmetrical proportions. Construction shall be rugged and ample safety factors shall be provided to carry the loads specified and to meet both on and off road requirements and speed conditions as set forth under Performance Tests and Requirements. Welding shall not be employed in the assembly of the apparatus in a manner that shall prevent the ready removal of any component part for service or repair. All steel welding shall follow American Welding Society D1.1-2004 recommendations for structural steel welding. All aluminum welding shall follow American Welding Society and ANSI D1.2-2003 requirements for structural welding of aluminum. All sheet metal welding shall follow American Welding Society B2.1-2000 requirements for structural welding of sheet metal. Flux core arc welding to use alloy rods, type 7000, American Welding Society standards A5.20-E70T1. Employees classified as welders are tested and certified to meet American Welding Society codes upon hire and every three (3) years thereafter.		
The manufacturer shall operate a Quality Management System under the requirements of ISO 9001. These standards sponsored by the International Organization for Standardization (ISO) specify the quality systems that shall be established by the manufacturer for design,		

Bidder Complies	
Yes	No

manufacture, installation and service. A copy of the certificate of compliance shall be included with the bid.

To demonstrate the quality of the product and service, each bidder shall provide a list of at least ten (10) fire departments/municipalities in the region that have bought a second time from the representing dealer. An exception to this requirement shall not be acceptable.

DELIVERY

Apparatus, to insure proper break in of all components while still under warranty, **shall be delivered under its own power** - rail or truck freight shall not be acceptable. A qualified delivery representative shall deliver the apparatus and remain for a sufficient length of time to instruct personnel in proper operation, care and maintenance of the equipment delivered.

INFORMATION REQUIRED

The manufacturer shall supply at time of delivery, complete operation and maintenance manuals covering the completed apparatus as delivered. A permanent plate shall be mounted in the driver's compartment which specifies the quantity and type of fluids required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.

SAFETY VIDEO

Documentation provided at the time of delivery shall also include an apparatus safety video, in DVD format. This video shall address key safety considerations for personnel to follow when they are driving, operating, and maintaining the apparatus. Safety procedures for the following shall be included: vehicle pre-trip inspection, chassis operation, pump operation, and maintenance.

PERFORMANCE TESTS AND REQUIREMENTS

A road test shall be conducted with the apparatus fully loaded and a continuous run of ten (10) miles or more shall be made under all driving conditions, during which time the apparatus shall show no loss of power or overheating. The transmission drive shaft or shafts, and rear axles shall run quietly and be free from abnormal vibration or noise throughout the operating range of the apparatus. Vehicle shall adhere to the following parameters:

- A) The apparatus, when fully equipped and loaded, shall have not less than 25 percent nor more than 50 percent of the weight on the front axle, and not less than 50 percent nor more than 75 percent on the rear axle.
- B) The apparatus shall be capable of accelerating to 35 mph from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed rpm of the engine.
- C) The service brakes shall be capable of stopping a fully loaded vehicle in 35 feet at 20 mph on a level concrete highway. The air brake system shall conform to Federal Motor Vehicle Safety Standards (FMVSS) 121.

	Bidder Complies	
	Yes	No
<p>D) The apparatus, fully loaded, shall be capable of obtaining a speed of 50 mph on a level concrete highway with the engine not exceeding its governed rpm (full load).</p> <p><u>FAILURE TO MEET TEST</u></p> <p>In the event the apparatus fails to meet the test requirements of these specifications on the first trial, second trials may be made at the option of the bidder within 30 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 comply with changes to conform to any clause of the specifications, within 30 days after notice is given to the bidder of such changes, shall also be cause for rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the purchaser or its use by the purchaser during the above-specified period with the permission of the bidder shall not constitute acceptance.</p> <p><u>SERVICE AND WARRANTY SUPPORT (DEALERSHIP)</u></p> <p>TO INSURE FULL SERVICE AFTER DELIVERY, THE SELLING BIDDER/DEALERSHIP MUST BE CAPABLE OF PROVIDING SERVICE WHEN REQUIRED.</p> <p>The bidder/dealership shall show that the company is in position to render prompt service and to furnish replacement parts.</p> <p>Each bidder/dealership must be able to display that they are actively in the fire apparatus service business by operating in conjunction with a factory authorized service center and parts repository capable of satisfying the warranty service requirements and parts requirements of the vehicle(s) being purchased.</p> <p>The bidder/dealership must state the location of this authorized service center. This service center must have a staff of factory-trained mechanics, well versed in all aspects of service for all major components of the apparatus. The service center must be within ten (10) miles of the Fire Department.</p> <p><u>SERVICE AND WARRANTY SUPPORT (MANUFACTURER)</u></p> <p>To provide an additional layer of service support, the successful manufacturer must also own a least two separate service facilities, one located in the northern portion of the US to service both Canada and the northern US states and one in the south to service the southern states.</p> <p>The manufacturer shall stock 1 million parts equating to \$5,000,000 of inventory dedicated to service and replacement parts to ensure quick response and minimize down time. Furthermore, the manufacturer shall house the inventory in a dedicated facility, with a dedicated shipping area that ensures service parts are given priority. The bidder shall provide detailed documentation of service and replacement part resources.</p> <p>Parts identification shall be provided to both the dealer and the Fire Department through an on line web based application for the specific truck reflected in this specification. Access will be granted using the specific VIN number of the vehicle. The online web application will provide</p>		

	Bidder Complies	
	Yes	No
<p>the ability to view complete bills of materials, digital photographs, parts drawings, assembly drawings, and access to all current operation, maintenance and service publications.</p> <p>The manufacturer must also maintain a 24 hour/ 7 day a week, toll free emergency hot line.</p> <p>The manufacturer shall employ a staff of adequate size (a minimum of 30 personnel) specifically dedicated to providing customer support and parts for the fielded fleet of vehicles it has produced.</p> <p>The manufacturer must be capable of providing both in-house and on-site service for the apparatus.</p> <p>The manufacturer shall offer regional factory hands-on repair and maintenance training classes.</p> <p>The manufacturer shall employ a minimum of four certified EVT technicians on staff, not only providing technical expertise in the repair of fire apparatus, but also demonstrating the commitment to service after the sale.</p> <p><u>LIABILITY</u></p> <p>The successful bidder shall defend any and all suits and assume all liability for the use of any patented process including any device or article forming a part of the apparatus or any appliance furnished under the contract.</p> <p><u>SPECIFICATION BID REQUIREMENTS</u></p> <p>Bidders shall also indicate in the "yes/no" column if their bid complies on each item (PARAGRAPH) specified. Exceptions shall be allowed if they are equal to or superior to that specified and provided they are listed and fully explained on a separate page.</p> <p>Proposals taking total exception to specifications shall not be acceptable.</p> <p>Also, bidders shall submit a detailed proposal. A letter only, even though written on a company letterhead, shall not be sufficient. Bid proposals shall be submitted in the same sequence as specifications for ease of evaluation, comparison and checking of compliance. An exception to these requirements shall not be tolerated.</p> <p><u>EXCEPTIONS</u></p> <p>All exceptions shall be stated no matter how seemingly minor. Any exceptions not taken shall be assumed by the purchaser to be included in the proposal, regardless of the cost to the bidder.</p> <p><u>GENERAL CONSTRUCTION</u></p> <p>The apparatus shall be designed with due consideration to distribution of load between the front and rear axles. Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Association.</p>		

Bidder Complies	
Yes	No

INSURANCE PROVIDED BY BIDDER

COMMERCIAL GENERAL LIABILITY INSURANCE

The successful bidder shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of commercial general liability insurance:

Each Occurrence\$1,000,000

Products/Completed Operations Aggregate\$1,000,000

Personal and Advertising Injury\$1,000,000

General Aggregate\$2,000,000

Coverage shall be written on a Commercial General Liability form. The policy shall be written on an occurrence form and shall include Contractual Liability coverage for bodily injury and property damage subject to the terms and conditions of the policy. The policy shall include Owner as an additional insured when required by written contract.

COMMERCIAL AUTOMOBILE LIABILITY INSURANCE

The successful bidder shall, during the performance of the contract, keep in force at least the following minimum limits of commercial automobile liability insurance and coverage shall be written on a Commercial Automobile liability form:

Each Accident Combined Single Limit: \$1,000,000

UMBRELLA/EXCESS LIABILITY INSURANCE

The successful bidder shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of umbrella liability insurance:

Aggregate: \$2,000,000

Each Occurrence: \$2,000,000

The umbrella policy shall be written on an occurrence basis and at a minimum provide excess to the bidder's General Liability and Automobile Liability policies.

The required limits can be provided by one (1) or more policies provided all other insurance requirements are met.

Coverage shall be provided by a carrier(s) rated A- or better by A.M. Best.

All policies shall provide a 30-day notice of cancellation to the named insured. The Certificate of Insurance shall provide the following cancellation clause: Should any of the above described polices be cancelled before the expiration date thereof, notice shall be delivered in accordance with the policy provisions.

	Bidder Complies	
	Yes	No
<p>Bidder agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with the bid. The certificate shall show the purchaser as certificate holder.</p> <p><u>INSURANCE PROVIDED BY MANUFACTURER</u></p> <p><u>PRODUCT LIABILITY INSURANCE</u></p> <p>The manufacturer shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of Product Liability insurance:</p> <p>Each Occurrence\$1,000,000</p> <p>Products/Completed Operations Aggregate\$1,000,000</p> <p>Coverage shall be written on a Commercial General Liability form. The policy shall be written on an occurrence form. The manufacturer's policy shall include the owner as additional insured when required by written contract between the Owner and the manufacturers authorized dealer.</p> <p><u>UMBRELLA/EXCESS LIABILITY INSURANCE</u></p> <p>The manufacturer shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of umbrella liability insurance:</p> <p>Each Occurrence: \$25,000,000</p> <p>Aggregate: \$25,000,000</p> <p>The umbrella policy shall be written on an occurrence basis and provide excess to the manufacturer's General Liability/Products policies.</p> <p>The required limits can be provided by one (1) or more policies provided all other insurance requirements are met.</p> <p>Coverage shall be provided by a carrier(s) rated A- or better by A.M. Best.</p> <p>All policies shall provide a 30-day notice of cancellation to the named insured. The Certificate of Insurance shall provide the following cancellation clause: Should any of the above described polices be cancelled before the expiration date thereof, notice shall be delivered in accordance with the policy provisions.</p> <p>Manufacturer agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with the bid. The certificate shall show the purchaser as the certificate holder.</p>		

Bidder Complies	
Yes	No

SINGLE SOURCE MANUFACTURER

Bids shall only be accepted from a single source apparatus manufacturer. The definition of single source is a manufacturer that designs and manufactures their products using an integrated approach, including the chassis, cab weldment, cab, pumphouse (including the sheet metal enclosure, valve controls, piping and operators' panel) and body being designed, fabricated and assembled on the bidder's premises. The electrical system (hardwire or multiplex) shall be both designed and integrated by the same apparatus manufacturer. The warranties relative to these major components (excluding component warranties such as engine, transmission, axles, pump, etc.) must be from a single source manufacturer and not split between manufacturers (i.e. body, pumphouse, cab weldment and chassis). The bidder shall provide evidence that they comply with this requirement.

The bidder shall state the location of the factory where the apparatus is to be built.

NFPA 2016 STANDARDS

This unit shall comply with the NFPA standards effective January 1, 2016, except for fire department specifications that differ from NFPA specifications. These exceptions shall be set forth in the Statement of Exceptions.

Certification of slip resistance of all stepping, standing and walking surfaces shall be supplied with delivery of the apparatus.

All horizontal surfaces designated as a standing or walking surface that are greater than 48.00" above the ground must be defined by a 1.00" wide line along its outside perimeter. Perimeter markings and designated access paths to destination points shall be identified on the customer approval print and are shown as approximate. Actual location(s) shall be determined based on materials used and actual conditions at final build. Access paths may pass through hose storage areas and opening or removal of covers or restraints may be required. Access paths may require the operation of devices and equipment such as the aerial device or ladder rack.

A plate that is highly visible to the driver while seated shall be provided. This plate shall show the overall height, length, and gross vehicle weight rating.

The manufacturer shall have programs in place for training, proficiency testing and performance for any staff involved with certifications.

An official of the company shall designate, in writing, who is qualified to witness and certify test results.

NFPA COMPLIANCY

Apparatus proposed by the bidder shall meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in current edition at time of contract execution. Fire department's specifications that differ from NFPA specifications shall be indicated in the proposal as "non-NFPA".

Bidder Complies	
Yes	No

VEHICLE INSPECTION PROGRAM CERTIFICATION

To assure the vehicle is built to current NFPA standards, the apparatus, in its entirety, shall be third-party, independent, audit-certified through Underwriters Laboratory (UL) that it is built and complies to all applicable standards in the current edition of NFPA 1901. The certification includes: all design, production, operational, and performance testing of not only the apparatus, but those components that are installed on the apparatus (no exception).

A placard shall be affixed in the driver's side area stating the third party agency, the date, the standard and the certificate number of the whole vehicle audit.

PUMP TEST

The pump shall be tested, approved, and certified by Underwriter's Laboratory at the manufacturer's expense. The test results and the pump manufacturer's certification of hydrostatic test; the engine manufacturer's certified brake horsepower curve; and the manufacturer's record of pump construction details shall be forwarded to the Fire Department.

GENERATOR TEST

If the unit has a generator, the generator shall be tested, approved, and certified by Underwriters Laboratories at the manufacturer's expense. The test results shall be provided to the Fire Department at the time of delivery.

BREATHING AIR TEST

If the unit has breathing air, the apparatus manufacturer shall draw an air sample from the air system and certify that the air quality meets the requirements of NFPA 1989, *Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection*.

FINAL FACTORY INSPECTION TRIP

The bidder shall provide one (1) final factory inspection trip for five (5) customer representatives. The final inspection trip shall be scheduled at a time mutually agreed upon between the manufacturer's representative and the customer. All costs such as travel, lodging and meals shall be the responsibility of the bidder.

COMPONENT FABRICATION LOCATIONS

Each bidder is required to complete the following information. It is not meant to be exclusionary, the purchaser is simply requesting a full explanation of where, when and how all major components are manufactured and the mode of transport used between factories.

CAB ASSEMBLY

All bidders shall supply the physical address where Cab Weldment occurs:

All bidders will be required to provide pictures of the purchaser's actual cab during cab weldment/construction.

All bidders shall supply the ship to address for the completed Cab Weldment _____

	Bidder Complies	
	Yes	No
<p>If the bidder does not own the Cab Weldment facility, the bidder will be required to provide a copy of the Bill of Lading for Cab Shipment along with a copy of the carriers insurance. Also an additional Performance Bond shall supplied by the owner of the Cab Weldment facility covering the cost of the cab assembly and shipment to the final assembly facility for the entire length of the bumper to bumper warranty. <u>NO EXCEPTIONS</u></p> <p>All bidders that utilize third party common carriers to transport the Cab Assembly shall provide documentation of the mode of transport.</p> <p><u>FRAME ASSEMBLY</u> All bidders shall supply the physical address where frame assembly occurs: _____</p> <p>All bidders will be required to provide pictures of the purchaser's actual frame assembly during construction. These pictures shall show the front and rear axles being installed, cab being installed, initial engine installation along with final running chassis. A close up of the frame showing the VIN# shall be used for verification.</p> <p>All bidders shall supply the ship to address for the completed frame assembly_____.</p> <p>If the bidder does not own the Frame Assembly facility, the bidder will be required to provide a copy of the Bill of Lading for the Frame shipment along with a copy of the carriers insurance. Also an additional Performance Bond shall supplied by the owner of the Frame Assembly facility covering the cost of the frame assembly and shipment to the final assembly facility for the entire length of the bumper to bumper warranty. <u>NO EXCEPTIONS</u></p> <p>All bidders that utilize third party common carriers to transport the Frame Assembly shall provide documentation (pictures) of the mode of transport.</p> <p><u>BODY FABRICATION & ASSEMBLY</u> All bidders shall supply the physical address where the body fabrication and assembly occurs: _____</p> <p>All bidders will be required to provide pictures of the purchaser's actual body assembly during construction. These pictures shall show the front, rear and side views, along with close up pictures of each individual compartment after fabrication, but prior to installation on the chassis</p> <p>All bidders shall supply the ship to address for the completed body assembly_____.</p> <p>If the bidder does not own the body assembly facility, the bidder will be required to provide a copy of the Bill of Lading for the shipment along with a copy of the carriers insurance. Also an additional Performance Bond shall supplied by the owner of the Body Assembly facility covering the cost of the body assembly and shipment to the final assembly facility for the entire length of the bumper to bumper warranty. <u>NO EXCEPTIONS</u></p>		

	Bidder Complies	
	Yes	No
<p>All bidders that utilize third party common carriers to transport the Body Assembly shall provide documentation (pictures) of the mode of transport.</p> <p><u>FINAL ASSEMBLY</u> All bidders shall supply the physical address where the final assembly and testing occurs: _____</p> <p>All bidders will be required to provide pictures of the purchaser's actual unit during final assembly during construction. These pictures shall show the front, rear and side views, along with close up pictures of each individual compartment after completion.</p> <p>All bidders will be required to provide pictures of the purchasers' actual unit during pump testing. Please provide physical address where Pump Testing occurs _____.</p> <p>All bidders will be required to provide complete pictures of all graphics on the unit prior to final inspection</p> <p>All pictures mentioned above shall be electronically transmitted to the Email address provided by the purchaser and shall become property of the purchaser <u>NO EXCEPTIONS.</u></p> <p><u>AFTERMARKET SUPPORT WEBSITE</u> A Customer Service website shall provide authorized dealers access to comprehensive information pertaining to the maintenance and service of their customer's apparatus. This tool shall provide the authorized dealer the ability to service and support their customers to the best of their ability with factory support at their fingertips.</p> <p>This website shall also be accessible to the end user through the guest login. Limited access is available and vehicle specific parts information accessible by entering a specific VIN number. All end users should see their local authorized dealer for additional support and service.</p> <p>The website shall provide the following to the designated individuals:</p> <ul style="list-style-type: none"> - Authorized dealer only - ability to access truck detail information on the major components of the vehicle, warranty information, available vehicle photographs, vehicle drawings, sales options, applicable vehicle software downloads, etc. - Authorized dealer and customer - parts look-up capability, with the aid of digital photographs, part drawings, and assembly drawings. - Authorized dealer only - ability to electronically submit warranty claims directly to the factory for reimbursement. - Authorized dealer only - accessibility to multiple dealer reports that allow the dealership to maintain communication with the customer on the status of orders, claims, and phone contacts. 		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> - Authorized dealer and customer - access to all currently published Operation and Maintenance and Service publications. - Authorized dealer only - access to manufacturer Service Bulletins and Work Instructions containing information on current service topics and recommendations provided. - Authorized dealer and customer - access to upcoming training classes offered by the manufacturer. - Authorized dealer only - access to interactive electronic learning modules (Operators Guides) covering the operation of major vehicle components. - Authorized dealer only - access to customer service articles, corporate news, quarterly newsletters, and key contacts. <p><u>BID BOND</u></p> <p>All bidders shall provide a bid bond as security for the bid in the form of a 5% bid bond to accompany their bid. This bid bond shall be issued by a Surety Company who is listed on the U.S. Treasury Departments list of acceptable sureties as published in Department Circular 570. The bid bond shall be issued by an authorized representative of the Surety Company and shall be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond shall include language, which assures that the bidder/principal shall give a bond or bonds as may be specified in the bidding or contract documents, with good and sufficient surety for the faithful performance of the contract, including the Basic One (1) Year Limited Warranty, and for the prompt payment of labor and material furnished in the prosecution of the contract.</p> <p>Proposals received from bidders who do not manufacture the chassis shall provide a warranty that shall be issued jointly and severally by, and signed by, both the bidder and the chassis manufacturer.</p> <p>If the successful bidder does not manufacture the chassis, the bidder shall supply a warranty bond, in addition to their performance bond, along with their signed contract. This warranty bond shall guarantee all terms and conditions of the Basic One (1) Year Limited Warranty and names both the bidder and chassis manufacturer as co-principals. This warranty bond shall be issued for the contract amount and shall remain in force for a term which is consistent with the term of the Basic One (1) Year Limited Warranty.</p> <p>Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle shall apply only to the Basic One (1) Year Limited Warranty for such vehicle. Any surety bond related to the sale of a vehicle shall not apply to any other warranties that are included within this bid (OEM or otherwise) or to the warranties (if any) of any third party of any part, component, attachment or accessory that is incorporated into or attached to the vehicle. In the event of any contradiction or inconsistency between this provision and any other document or assertion, this provision shall prevail.</p>		

Bidder Complies	
Yes	No

PERFORMANCE BOND, 1 YEAR

The successful bidder shall furnish a Performance and Payment bond (Bond) equal to 100 percent of the total contract amount within 30 days of the notice of award. Such Bond shall be in a form acceptable to the Owner and issued by a surety company included within the Department of Treasury's Listing of Approved Sureties (Department Circular 570) with a minimum A.M. Best Financial Strength Rating of A and Size Category of XV. In the event of a bond issued by a surety of a lesser Size Category, a minimum Financial Strength rating of A+ is required.

Bidder and Bidder's surety agree that the Bond issued hereunder, whether expressly stated or not, also includes the surety's guarantee of the vehicle manufacturer's Basic One (1) Year Limited Warranty period included within this proposal. Owner agrees that the penal amount of this bond shall be simultaneously amended to 100% percent of the total contract amount upon satisfactory acceptance and delivery of the vehicle(s) included herein. Notwithstanding anything contained within this contract to the contrary, the surety's liability for any warranties of any type shall not exceed one (1) year from the date of such satisfactory acceptance and delivery, or the actual Basic One (1) Year Limited Warranty period, whichever is shorter.

APPROVAL DRAWING

A drawing of the proposed apparatus shall be provided for approval before construction begins. The sales representative shall also have a copy of the same drawing. The finalized and approved drawing shall become part of the contract documents. This drawing shall indicate the chassis make and model, location of the lights, siren, horns, compartments, major components, etc.

A "revised" approval drawing of the apparatus shall be prepared and submitted by the manufacturer to the purchaser showing any changes made to the approval drawing.

ELECTRICAL WIRING DIAGRAMS

Two (2) electrical wiring diagrams, prepared for the model of chassis and body, shall be provided.

CHASSIS

Chassis provided shall be a new, tilt-type custom fire apparatus. The chassis shall be manufactured in the apparatus body builder's facility eliminating any split responsibility. The chassis shall be designed and manufactured for heavy-duty service, with adequate strength and capacity for the intended load to be sustained and the type of service required.

WHEELBASE

The wheelbase of the vehicle shall be no greater than 255".

GVW RATING

The gross vehicle weight rating shall be a minimum of 69,500 #.

Bidder Complies	
Yes	No

FRAME

The chassis frame shall be built with two (2) steel channels bolted to five (5) cross members or more, depending on other options of the apparatus.

The side rails shall have a 13.38" tall web over the front and mid sections of the chassis, with a continuous smooth taper to 10.75" over the rear axle.

Each rail shall have a section modulus of 25.992 cubic inches and a resisting bending moment (rbm) of 3,119,040 in-lb over the critical regions of the frame assembly, with a section modulus of 18.96 cubic inches with an rbm of 2,275,200 in-lb over the rear axle.

The frame rails shall be constructed of 120,000 psi yield strength heat-treated 0.38" thick steel with 3.50" wide flanges.

FRAME REINFORCEMENT

In addition, a full-length mainframe internal "C" liner shall be provided. The liner shall be an internal "C" design that steps to a smaller internal "C" design over the rear axle. It shall be heat-treated steel measuring 12.50" x 3.00" x 0.25" through the front "C" portion of the liner, stepping to 9.38" x 3.00" x 0.25" through the rear "C" portion of the liner. Each liner shall have a section modulus of 13.58 cubic inches, yield strength of 110,000 psi, and rbm of 857,462 in-lb. Total rbm at wheelbase center shall be 4,391,869 in-lb.

The frame liner shall be mounted inside of the chassis frame rail and extend the full length of the frame.

FRONT AXLE

The front axle shall be a reverse "I" beam type with inclined king pins. It shall be a Dana®, Model D2200, with a rated capacity of 23,000 lb.

A viewing window shall be provided on each side of the axle for checking the oil level.

FRONT SUSPENSION

The front springs shall be a Standens, three (3)-leaf, taper leaf design, 54.00" long x 4.00" wide, with a ground rating of 23,000 lb.

The two (2) top leaves shall wrap the forward spring hanger pin. The top leaf shall also wrap the rear spring hanger pin. Both the front and rear eyes shall be Berlin style wraps that shall place the eyes in the horizontal plane within the main leaf. This shall reduce bending stress from acceleration and braking.

A steel encased rubber bushing shall be used in the spring eye. The steel encased rubber bushing shall be maintenance free and require no lubrication.

SHOCK ABSORBERS

Heavy-duty telescoping shock absorbers shall be provided on the front axle.

	Bidder Complies	
	Yes	No
<p><u>FRONT OIL SEALS</u> Oil seals with viewing window shall be provided on the front axle.</p> <p><u>FRONT TIRES</u> Front tires shall be Goodyear 425/65R22.50 radials, 20 ply Armor MAX, rated for 24,400 lb maximum axle load and 68 mph maximum speed.</p> <p>The tires shall be mounted on Accuride® 22.50" x 12.25" steel disc type wheels with a ten (10) stud, 11.25" bolt circle.</p> <p><u>REAR AXLE</u> The rear axle shall be a Meritor™, Model RT-46-160, tandem axle assembly with a capacity of 48,000 lb.</p> <p>An inter-axle differential, which divides torque evenly between axles, shall be provided on the rear axle with an indicator light mounted on the cab instrument panel.</p> <p><u>TOP SPEED OF VEHICLE</u> A rear axle ratio shall be furnished to allow the vehicle to reach a top speed of 60 mph.</p> <p><u>REAR SUSPENSION</u> Rear suspension shall be a Hendrickson, Model FMX 482 EX, air ride with a ground rating of 48,000 lb. The suspension shall have the following features:</p> <ul style="list-style-type: none"> • Outboard vertical mounted heavy-duty shock absorbers • Utilizes track bars and torque rods to restrict lateral axle movement and maintain constant pinion angles • Super heavy-duty transverse beam to help reduce axle stress while increasing roll stability or resistance to lean • Low spring rate air springs for excellent ride quality • Dual height control valves to maintain level vehicle from side to side <p><u>REAR OIL SEALS</u> Oil seals shall be provided on the rear axle(s).</p> <p><u>REAR TIRES</u> Rear tires shall be eight (8) Goodyear 12R22.50 radials, 16 ply all season G622 RSD tread, rated for 54,240 lb maximum axle load and 75 mph maximum speed.</p> <p>The tires shall be mounted on Accuride® 22.50" x 8.25" steel disc type wheels with a ten (10) stud, 11.25" bolt circle.</p> <p><u>TIRE BALANCE</u> All tires shall be dynamically balanced with wheel weights.</p>		

	Bidder Complies	
	Yes	No
<p><u>TIRE PRESSURE MANAGEMENT</u></p> <p>There shall be a RealWheels LED AirSecure™ tire alert pressure management system provided, that shall monitor each tire's pressure. A sensor shall be provided on the valve stem of each tire for a total of 10 tires.</p> <p>The sensor shall calibrate to the tire pressure when installed on the valve stem for pressures between 10 and 200 psi. The sensor shall activate an integral battery operated LED when the pressure of that tire drops 5 to 8 psi.</p> <p>Removing the cap from the sensor shall indicate the functionality of the sensor and battery. If the sensor and battery are in working condition, the LED shall immediately start to flash.</p> <p><u>FRONT HUB COVERS</u></p> <p>Stainless steel hub covers shall be provided on the front axle. An oil level viewing window shall be provided.</p> <p><u>HUB COVERS (REAR)</u></p> <p>Stainless steel baby moon covers shall be provided over the rear axle hubs.</p> <p><u>CHROME LUG NUT COVERS</u></p> <p>Chrome lug nut covers shall be supplied on front and rear wheels.</p> <p><u>MUD FLAPS</u></p> <p>Mud flaps shall be installed behind the front and rear wheels of the apparatus.</p> <p><u>TIRE, AIR PRESSURE EQUALIZATION</u></p> <p>A Crossfire air pressure equalization system shall be provided on the rear dual wheels. This system shall equalize the tire air pressure in the rear duals.</p> <p><u>WHEEL CHOCKS</u></p> <p>There shall be one (1) pair of folding Ziamatic, Model SAC-44-E, aluminum alloy, Quick-Choc wheel blocks with easy-grip handle provided.</p> <p><u>Wheel Chock Brackets</u></p> <p>There shall be one (1) pair of Zico, Model SQCH-44-H, horizontal mounting wheel chock brackets provided for the Ziamatic, Model SAC-44-E, folding wheel chocks. The brackets shall be made of aluminum and consist of a quick release spring loaded rod to hold the wheel chocks in place. The brackets shall be mounted below the left side rear compartment.</p> <p><u>ELECTRONIC STABILITY CONTROL</u></p> <p>A vehicle control system shall be provided as an integral part of the ABS brake system from Meritor Wabco.</p> <p>The system shall monitor and update the lateral acceleration of the vehicle and compare it to a critical threshold where a side roll event may occur. If the critical threshold is met, the vehicle control system shall automatically reduce engine RPM, engage the engine retarder (if</p>		

Bidder Complies	
Yes	No

equipped), and selectively apply brakes to the individual wheel ends of the front and rear axles to reduce the possibility of a side roll event.

The system shall monitor directional stability through a lateral accelerometer, steer angle sensor and yaw rate sensor. If spinout or drift out is detected, the vehicle control system shall selectively apply brakes to the individual wheel ends of the front and rear axles to bring the vehicle back to its intended direction.

ANTI-LOCK BRAKE SYSTEM

The vehicle shall be equipped with a Wabco 6S6M, anti-lock braking system. The ABS shall provide a six (6) channel anti-lock braking control on both the front and rear wheels. A digitally controlled system that utilizes microprocessor technology shall control the anti-lock braking system. Each wheel shall be monitored by the system. When any wheel begins to lockup, a signal shall be sent to the control unit. This control unit shall then reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.

AUTOMATIC TRACTION CONTROL

An anti-slip feature shall be included with the ABS. The Automatic Traction Control shall be used for traction in poor road and weather conditions. The Automatic Traction Control shall act as an electronic differential lock that shall not allow a driving wheel to spin, thereby supplying traction at all times. The ABS electronic control unit (ECU) shall work with the engine ECU, sharing information concerning wheel slip. Engine ECU shall use information to control engine speed, allowing only as much throttle application as required for the available traction, regardless of how much the driver is asking for. An "off road traction" switch shall be provided on the instrument panel. Activation of the switch shall allow additional tire slip to let the truck climb out and get on top of deep snow or mud.

BRAKES

The service brake system shall be full air type by Bendix®.

Front brakes shall be Model ADB22X™, disc type with automatic pad wear adjustment and 17.00" rotors for improved stopping distance.

The rear brakes shall be Meritor™ 16.50" x 7.00" cam operated with automatic slack adjusters. Dust shields shall be provided.

BRAKE SYSTEM AIR COMPRESSOR

The air compressor shall be a Cummins/WABCO with 25.9 cubic feet per minute output.

BRAKE SYSTEM

The brake system shall include:

- Brake treadle valve
- Heated automatic moisture ejector on air dryer

Bidder Complies	
Yes	No

- Total air system capacity of 6,408 cubic inches
- Two (2) air pressure gauges with a red warning light and an audible alarm, that activates when air pressure falls below 60 psi
- Spring set parking brake system
- Parking brake operated by a push-pull style control valve
- A parking "brake on" indicator light on instrument panel
- Park brake relay/inversion and anti-compounding valve, in conjunction with a double check valve system, shall be provided with an automatic spring brake application at 40 psi
- A pressure protection valve to prevent all air operated accessories from drawing air from the air system when the system pressure drops below 80 psi (550 kPa)
- 1/4 turn drain valves on each air tank

The air tank shall be primed and painted to meet a minimum 750 hour salt spray test.

To reduce the effects of corrosion, the air tank shall be mounted with stainless steel brackets (no exception).

BRAKE SYSTEM AIR DRYER

The air dryer shall be a WABCO System Saver 1200 IWT, with internal wet tank, spin-on coalescing filter cartridge and 100 watt heater.

BRAKE LINES

Color-coded nylon brake lines shall be provided. The lines shall be wrapped in a heat protective loom where necessary in the chassis.

AIR INLET

One (1) air inlet with 3D series male coupling shall be provided. It shall allow station air to be supplied to the apparatus brake system through a shoreline hose. The inlet shall be located forward in the driver side lower step well of cab. A check valve shall be provided to prevent reverse flow of air. The inlet shall discharge into the "wet" tank of the brake system. A mating female fitting shall also be provided with the loose equipment.

ALL WHEEL LOCK-UP

An additional all wheel lock-up system shall be installed which applies air to the front brakes only. The standard spring brake control valve system shall be used for the rear.

ENGINE

The chassis shall be powered by an electronically controlled engine as described below:

Make:	Cummins
Model:	X12
Power:	500 hp at 1900 rpm
Torque:	1700 lb-ft at 1000 rpm
Governed	2000 rpm

		Bidder Complies	
		Yes	No
Speed:			
Emissions Level:	EPA 2021		
Fuel:	Diesel		
Cylinders:	Six (6)		
Displacement:	729 cubic inches (11.9L)		
Starter:	Delco 39MT™		
Fuel Filters:	Spin-on style primary filter with water separator and water-in-fuel sensor. Secondary spin-on style filter.		
<p>The engine shall include On-board diagnostics (OBD), which provides self diagnostic and reporting. The system shall give the owner or repair technician access to state of health information for various vehicle sub systems. The system shall monitor vehicle systems, engine and after treatment. The system shall illuminate a malfunction indicator light on the dash console if a problem is detected.</p> <p><u>HIGH IDLE</u></p> <p>A high idle switch shall be provided, inside the cab, on the instrument panel, that shall automatically maintain a preset engine rpm. A switch shall be installed, at the cab instrument panel, for activation/deactivation.</p> <p>The high idle shall be operational only when the parking brake is on and the truck transmission is in neutral. A green indicator light shall be provided, adjacent to the switch. The light shall illuminate when the above conditions are met. The light shall be labeled "OK to Engage High Idle."</p> <p><u>ENGINE BRAKE</u></p> <p>A Jacobs® engine brake is to be installed with the controls located on the instrument panel within easy reach of the driver.</p> <p>The driver shall be able to turn the engine brake system on/off and have a high, medium and low setting.</p> <p>The engine brake shall activate when the system is on and the throttle is released.</p> <p>The high setting of the brake application shall activate and work simultaneously with the variable geometry turbo (VGT) provided on the engine.</p> <p>The engine brake shall be installed in such a manner that when the engine brake is slowing the vehicle the brake lights are activated.</p> <p>The ABS system shall automatically disengage the auxiliary braking device, when required.</p>			

	Bidder Complies	
	Yes	No
<p><u>CLUTCH FAN</u> A fan clutch shall be provided. The fan clutch shall be automatic when the pump transmission is in "Road" position, and constantly engaged when in "Pump" position.</p> <p><u>ENGINE AIR INTAKE</u> The engine air intake shall be located above the engine cooling package. It shall draw fresh air from the front of the apparatus through the radiator grille.</p> <p>A stainless steel metal screen shall be installed at the inlet of the air intake system that shall meet NFPA 1901 requirements.</p> <p>The air cleaner and stainless steel screen shall be easily accessible by tilting the cab.</p> <p><u>EXHAUST SYSTEM</u> The exhaust system shall include a Single Module™ aftertreatment device to meet current EPA standards. The exhaust system shall be stainless steel from the turbo to the inlet of the aftertreatment device, and shall be 5.00" in diameter. An insulation wrap shall be provided on all exhaust pipes between the turbo and aftertreatment device to minimize the heat loss to the aftertreatment device. The exhaust shall terminate horizontally ahead of the right side rear wheels. A tailpipe diffuser shall be provided to reduce the temperature of the exhaust as it exits. Heat deflector shields shall be provided to isolate chassis and body components from the heat of the tailpipe diffuser.</p> <p><u>EXHAUST MODIFICATION</u> The tail pipe shall be brought out from under the body at a 90 degree angle from the truck. The tail pipe shall extend a minimum of 2.00" past the body, adaptable for the Plymovent Magnetic Grabber® system.</p> <p>A Plymovent Magnetic Grabber conical adapter shall be provided on the end of the tail pipe.</p> <p><u>RADIATOR</u> The radiator and the complete cooling system shall meet or exceed NFPA and engine manufacturer cooling system standards.</p> <p>For maximum corrosion resistance and cooling performance, the entire radiator core shall be constructed using long life aluminum alloy. The radiator core shall consist of aluminum fins, having a serpentine design, brazed to aluminum tubes. No solder joints or leaded material of any kind shall be acceptable in the core assembly.</p> <p>The radiator core shall have a minimum front area of 1060 square inches.</p> <p>Supply tank shall be made of heavy duty glass-reinforced nylon and the return tank shall be made of aluminum. Both tanks shall be crimped onto the core assembly using header tabs and a compression gasket to complete the radiator core assembly. There shall be a full steel frame around the inserts to enhance cooling system durability and reliability.</p> <p>The radiator shall be compatible with commercial antifreeze solutions.</p>		

	Bidder Complies	
	Yes	No
<p>The radiator assembly shall be isolated from the chassis frame rails with rubber isolators to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven terrain.</p> <p>The radiator shall include a de-aeration/expansion tank. For visual coolant level inspection, the radiator shall have a built-in sight glass. The radiator shall be equipped with a 15 psi pressure relief cap.</p> <p>A drain port shall be located at the lowest point of the cooling system and/or the bottom of the radiator to permit complete flushing of the coolant from the system.</p> <p>Shields or baffles shall be provided to prevent recirculation of hot air to the inlet side of the radiator.</p> <p><u>COOLANT LINES</u></p> <p>Gates, or Goodyear, rubber hose shall be used for all engine coolant lines installed by the chassis manufacturer.</p> <p>Hose clamps shall be stainless steel constant torque type to prevent coolant leakage. They shall react to temperature changes in the cooling system and expand or contract accordingly while maintaining a constant clamping pressure on the hose.</p> <p><u>FUEL TANK</u></p> <p>A 65 gallon fuel tank shall be provided and mounted at the rear of the chassis. The tank shall be constructed of aluminum with the exterior painted to match the chassis frame. It shall be equipped with swash partitions and a vent. To eliminate the effects of corrosion, the fuel tank shall be mounted with stainless steel straps. (no exception).</p> <p>A .75" drain plug shall be provided in a low point of the tank for drainage.</p> <p>A fill inlet shall be located on the left hand side of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Ultra Low Sulfur - Diesel Fuel Only."</p> <p>A .50" diameter vent shall be provided running from top of tank to just below fuel fill inlet.</p> <p>The tank shall meet all FHWA 393.67 requirements, including a fill capacity of 95 percent of tank volume.</p> <p>All fuel lines shall be provided as recommended by the engine manufacturer.</p> <p><u>DIESEL EXHAUST FLUID TANK</u></p> <p>A 4.5 gallon diesel exhaust fluid (DEF) tank shall be provided and mounted in the driver's side body forward of the rear axle.</p> <p>A 0.50" drain plug shall be provided in a low point of the tank for drainage.</p> <p>A fill inlet shall be located on the driver's side of the body and be covered with a hinged, spring loaded, painted door that is marked "Diesel Exhaust Fluid Only".</p>		

Bidder Complies	
Yes	No

The tank shall meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing.

The tank shall include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.

FUEL PRIMING PUMP

A Cummins automatic electronic fuel priming pump shall be integrated as part of the engine.

FUEL COOLER

An air to fuel cooler shall be installed in the engine fuel return line.

FUEL SEPARATOR

The engine shall be equipped with a Racor in-line spin-on fuel and water separator in addition to the engine fuel filters.

TRANSMISSION

An Allison 5th generation, Model EVS 4000P, electronic, torque converting, automatic transmission shall be provided.

The transmission shall be equipped with prognostics to monitor oil life, filter life, and transmission health. A wrench icon on the shift selector's digital display shall indicate when service is due.

Two (2) PTO openings shall be located on left side and top of converter housing (positions 8 o'clock and 1 o'clock).

A transmission temperature gauge with an amber light and buzzer shall be installed on the cab instrument panel.

TRANSMISSION SHIFTER

A six (6)-speed push button shift module shall be mounted to right of driver on console. Shift position indicator shall be indirectly lit for after dark operation.

The transmission ratio shall be:

1st	3.51 to 1.00
2nd	1.91 to 1.00
3rd	1.43 to 1.00
4th	1.00 to 1.00
5th	0.75 to 1.00
6th	0.64 to 1.00
R	4.80 to 1.00

	Bidder Complies	
	Yes	No
<p><u>TRANSMISSION COOLER</u> A Modine plate and fin transmission oil cooler shall be provided using engine coolant to control the transmission oil temperature.</p> <p><u>DRIVELINE</u> Drivelines shall be a heavy-duty metal tube and be equipped with Spicer® 1810 universal joints.</p> <p>The shafts shall be dynamically balanced before installation.</p> <p>A splined slip joint shall be provided in each driveshaft where the driveline design requires it. The slip joint shall be coated with Glidecoat® or equivalent.</p> <p><u>STEERING</u> Dual steering gear, with integral heavy-duty power steering, shall be provided. For reduced system temperatures, the power steering shall incorporate an air to oil cooler and Vickers® V20NF hydraulic pump with integral pressure and flow control. All power steering lines shall have wire braded lines with crimped fittings.</p> <p>A tilt and telescopic steering column shall be provided to improve fit for a broader range of driver configurations.</p> <p><u>STEERING WHEEL</u> The steering wheel shall be 18.00" in diameter, have tilting and telescoping capabilities, and a 4-spoke design.</p> <p><u>LOGO AND CUSTOMER DESIGNATION ON DASH</u> The dash panel shall have an emblem containing the fire apparatus manufacturer's logo and customer name. The emblem shall have three (3) rows of text for the customer's department name. There shall be a maximum of eight (8) characters in the first row, 11 characters in the second row and 11 characters in the third row.</p> <p>The first row of text shall be: VERNON</p> <p>The second row of text shall be: FIRE</p> <p>The third row of text shall be: DEPARTMENT</p> <p><u>BUMPER</u> A one (1)-piece, ten (10) gauge, 304-2B type polished stainless steel bumper, a minimum of 10.00" high, shall be attached to a bolted modular extension frame constructed of 50,000 psi tensile steel "C" channel mounted directly behind it to provide adequate support strength.</p> <p>The bumper shall be extended 19.00" from front face of cab.</p>		

	Bidder Complies	
	Yes	No
<p><u>Gravel Pan</u> A gravel pan, constructed of bright aluminum treadplate, shall be furnished between the bumper and cab face. The gravel pan shall be properly supported from the underside to prevent flexing and vibration of the aluminum treadplate.</p> <p><u>CENTER HOSE TRAY</u> A hose tray, constructed of aluminum, shall be placed in the center of the bumper extension.</p> <p>The tray shall have a capacity of 100' of 1.75" double jacket cotton-polyester hose.</p> <p>Aluminum grating shall be provided at the bottom of the tray. Drain holes are also provided.</p> <p><u>Center Hose Tray Restraint</u> There shall be one (1) pair of hose tray restraint straps located over the center mounted tray.</p> <p>The restraints shall be a pair of 2.00" wide black nylon straps with Velcro® fasteners provided. The strap(s) shall be used to secure the hose in the tray.</p> <p><u>TOW HOOKS</u> Two (2) chromed steel tow hooks shall be installed under the bumper and attached to the front frame members. The tow hooks shall be designed and positioned to allow up to a 6,000 lb straight horizontal pull in line with the centerline of the vehicle. The tow hooks shall not be used for lifting of the apparatus.</p> <p><u>CAB</u> The cab shall be designed specifically for the fire service and manufactured by the chassis builder.</p> <p>The cab shall be built by the apparatus manufacturer in a facility located on the manufacturer's premises (no exception).</p> <p>For reasons of structural integrity and enhanced occupant protection, the cab shall be a heavy duty design, constructed to the following minimal standards.</p> <p>The cab shall have 12 main vertical structural members located in the A-pillar (front cab corner posts), B-pillar (side center posts), C-pillar (rear corner posts), and rear wall areas. The A-pillar shall be constructed of solid A356-T5 aluminum castings. The B-pillar and C-pillar shall be constructed from 0.13" wall extrusions. The rear wall shall be constructed of two (2) 2.00" x 2.00" outer aluminum extrusions and two (2) 2.00" x 1.00" inner aluminum extrusions. All main vertical structural members shall run from the floor to 4.625" x 3.864" x 0.090" thick roof extrusions to provide a cage-like structure with the A-pillar and roof extrusions being welded into a 0.25" thick corner casting at each of the front corners of the roof assembly.</p> <p>The front of the cab shall be constructed of a 0.13" firewall plate, covered with a 0.090" front skin (for a total thickness of 0.22"), and reinforced with a full width x 0.50" thick cross-cab support located just below the windshield and fully welded to the engine tunnel. The cross-cab</p>		

	Bidder Complies	
	Yes	No
<p>support shall run the full width of the cab and weld to each A-pillar, the 0.13" firewall plate, and the front skin.</p> <p>The cab floors shall be constructed of 0.125" thick aluminum plate and reinforced at the firewall with an additional 0.25" thick cross-floor support providing a total thickness of 0.375" of structural material at the front floor area. The front floor area shall also be supported with two (2) triangular 0.30" wall extrusions that also provides the mounting point for the cab lift. This tubing shall run from the floor wireway of the cab to the engine tunnel side plates, creating the structure to support the forces created when lifting the cab.</p> <p>The cab shall be 96.00" wide (outside door skin to outside door skin) to maintain maximum maneuverability (no exception).</p> <p>The forward cab section shall have an overall height (from the cab roof to the ground) of approximately 99.00". The crew cab section shall have a 10.00" raised roof, with an overall cab height of approximately 109.00". The overall height listed shall be calculated based on a truck configuration with the lowest suspension weight rating, the smallest diameter tires for the suspension, no water weight, no loose equipment weight, and no personnel weight. Larger tires, wheels, and suspension shall increase the overall height listed.</p> <p>The floor to ceiling height inside the crew cab shall be 64.50" in the center and outboard positions.</p> <p>The crew cab floor shall measure 46.00" from the rear wall to the back side of the rear facing seat risers.</p> <p>The medium block engine tunnel, at the rearward highest point (knee level), shall measure 61.50" to the rear wall. The big block engine tunnel shall measure 51.50" to the rear wall.</p> <p>The crew cab shall be a totally enclosed design with the interior area completely open to improve visibility and verbal communication between the occupants.</p> <p>The cab shall be a full tilt cab style.</p> <p>A 3-point cab mount system with rubber isolators shall improve ride quality by isolating chassis vibrations from the cab.</p> <p><u>CAB ROOF DRIP RAIL</u></p> <p>For enhanced protection from inclement weather, a drip rail shall be furnished on the sides of the cab. The drip rail shall be painted to match the cab roof, and bonded to the sides of the cab. The drip rail shall extend the full length of the cab roof.</p> <p><u>INTERIOR CAB INSULATION</u></p> <p>The cab shall include 1.00" insulation in the ceiling, 1.50" insulation in the side walls, and 2.00" insulation in the rear wall to maximize acoustic absorption and thermal insulation.</p>		

	Bidder Complies	
	Yes	No
<p><u>FENDER LINERS</u> Full circular inner fender liners in the wheel wells shall be provided.</p> <p><u>PANORAMIC WINDSHIELD</u> A one (1)-piece safety glass windshield shall be provided with over 2,775 square inches of clear viewing area. The windshield shall be full width and shall provide the occupants with a panoramic view. The windshield shall consist of three (3) layers: outer light, middle safety laminate, and inner light. The outer light layer shall provide superior chip resistance. The middle safety laminate layer shall prevent the windshield glass pieces from detaching in the event of breakage. The inner light shall provide yet another chip resistant layer. The cab windshield shall be bonded to the aluminum windshield frame using a urethane adhesive. A custom frit pattern shall be applied on the outside perimeter of the windshield for a finished automotive appearance.</p> <p><u>WINDSHIELD WIPERS</u> Three (3) electric windshield wipers with washer shall be provided that meet FMVSS and SAE requirements.</p> <p>The washer reservoir shall be able to be filled without raising the cab.</p> <p><u>ENGINE TUNNEL</u> Engine hood side walls shall be constructed of 0.375" aluminum. The top shall be constructed of 0.125" aluminum and shall be tapered at the top to allow for more driver and passenger elbow room.</p> <p>The engine hood shall be insulated for protection from heat and sound. The noise insulation keeps the dBA level within the limits stated in the current NFPA 1901 standards.</p> <p>The engine tunnel shall be no higher than 17.00" off the crew cab floor (no exception).</p> <p><u>INTERIOR CREW CAB REAR WALL ADJUSTABLE SEATING (PATENT PENDING)</u> The interior rear wall of the crew cab shall have mounting holes every 2.75" to allow for adjustability of the forward facing crew cab seating along the rear wall. Seats shall be adjustable with use of simple hand tools allowing departments flexibility of their seating arrangement should their department needs change.</p> <p><u>CAB REAR WALL EXTERIOR COVERING</u> The exterior surface of the rear wall of the cab shall be overlaid with bright aluminum treadplate except for areas that are not typically visible when the cab is lowered.</p> <p><u>CAB LIFT</u> A hydraulic cab lift system shall be provided consisting of an electric powered hydraulic pump, dual lift cylinders, and necessary hoses and valves.</p> <p>Lift controls shall be located on the right side pump panel or front area of the body in a convenient location.</p>		

	Bidder Complies	
	Yes	No
<p>The cab shall be capable of tilting 43 degrees to accommodate engine maintenance and removal.</p> <p>The cab shall be locked down by a 2-point normally closed spring loaded hook type latch that fully engages after the cab has been lowered. The system shall be hydraulically actuated to release the normally closed locks when the cab lift control is in the raised position and cab lift system is under pressure. When the cab is completely lowered and system pressure has been relieved, the spring loaded latch mechanisms shall return to the normally closed and locked position.</p> <p>The hydraulic cylinders shall be equipped with a velocity fuse that protects the cab from accidentally descending when the control is located in the tilt position.</p> <p>For increased safety, a redundant mechanical stay arm shall be provided that must be manually put in place on the left side between the chassis and cab frame when the cab is in the raised position. This device shall be manually stowed to its original position before the cab can be lowered.</p> <p><u>Cab Lift Interlock</u></p> <p>The cab lift system shall be interlocked to the parking brake. The cab tilt mechanism shall be active only when the parking brake is set and the ignition switch is in the on position. If the parking brake is released, the cab tilt mechanism shall be disabled.</p> <p><u>GRILLE</u></p> <p>A bright finished aluminum mesh grille screen, inserted behind a bright finished grille surround, shall be provided on the front center of the cab.</p> <p><u>DOOR JAMB SCUFFPLATES</u></p> <p>All cab door jambs shall be furnished with a polished stainless steel scuffplate, mounted on the striker side of the jamb.</p> <p><u>SIDE OF CAB MOLDING</u></p> <p>Chrome molding shall be provided on both sides of cab.</p> <p><u>MIRRORS</u></p> <p>A Retrac, Model 613423, dual vision, motorized, west coast style mirror, with chrome finish, shall be mounted on each side of the front cab door with spring loaded retractable arms. The flat glass and convex glass shall be heated and adjustable with remote control within reach of the driver.</p> <p><u>FRONT CROSS VIEW MIRROR</u></p> <p>An 8.00" diameter round convex mirror shall be provided over the officer's side front corner of the cab. The mirror shall provide the driver with a view of the front bumper and the area several feet in front of the truck.</p>		

	Bidder Complies	
	Yes	No
<p>The mirror housing, tubing, clamps, and hardware shall be constructed of corrosion resistant stainless steel.</p> <p>The mirror shall be heated with the control inside the cab.</p> <p><u>DOORS</u></p> <p>To enhance entry and egress to the cab, the forward cab door openings shall be a minimum of 37.50" wide x 63.37" high. The crew cab doors shall be located on the sides of the cab and shall be constructed in the same manner as the forward cab doors. The crew cab door openings shall be a minimum of 34.30" wide x 73.25" high.</p> <p>The forward cab and crew cab doors shall be constructed of extruded aluminum with a nominal material thickness of 0.093". The exterior door skins shall be constructed from 0.090" aluminum.</p> <p>A customized, vertical, pull-down type door handle shall be provided on the exterior of each cab door. The finish of the door handle shall be chrome/black. The exterior handle shall be designed specifically for the fire service to prevent accidental activation, and shall provide 4.00" wide x 2.00" deep hand clearance for ease of use with heavy gloved hands.</p> <p>Each door shall also be provided with an interior flush, open style paddle handle that shall be readily operable from fore and aft positions, and be designed to prevent accidental activation. The interior handles shall provide 4.00" wide x 1.25" deep hand clearance for ease of use with heavy gloved hands.</p> <p>The cab doors shall be provided with both interior (rotary knob) and exterior (keyed) locks exceeding FMVSS standards. The keys shall be Model 751. The locks shall be capable of activating when the doors are open or closed. The doors shall remain locked if locks are activated when the doors are opened, then closed.</p> <p>A full length, heavy duty, stainless steel, piano-type hinge with a 0.38" pin and 11 gauge leaf shall be provided on all cab doors. There shall be double automotive-type rubber seals around the perimeter of the door framing and door edges to ensure a weather-tight fit.</p> <p>A chrome grab handle shall be provided on the inside of each cab door for ease of entry.</p> <p>A red webbed grab handle shall be installed on the crew cab door stop strap. The grab handles shall be securely mounted.</p> <p>The bottom cab step at each cab door location shall be located below the cab doors and shall be exposed to the exterior of the cab.</p> <p><u>Door Panels</u></p> <p>The inner cab door panels shall be constructed out of brushed stainless steel.</p> <p><u>MANUAL CAB DOOR WINDOWS</u></p> <p>All cab entry doors shall contain a conventional roll down window.</p>		

Bidder Complies	
Yes	No

CAB STEPS

The forward cab and crew cab access steps shall be a full size two (2) step design to provide largest possible stepping surfaces for safe ingress and egress. The bottom steps shall be designed with a grip pattern punched into bright aluminum treadplate material to provide support, slip resistance, and drainage. The bottom steps shall be a bolt-in design to minimize repair costs should they need to be replaced. The forward cab steps shall be a minimum 25.00" wide, and the crew cab steps shall be 21.65" wide with a 10.00" minimum depth. The inside cab steps shall not exceed 16.50" in height.

The vertical surfaces of the step well shall be aluminum treadplate.

CAB EXTERIOR HANDRAILS

A 1.25" diameter slip-resistant, knurled aluminum handrail shall be provided adjacent to each cab and crew cab door opening to assist during cab ingress and egress.

STEP LIGHTS

There shall be six (6) white LED step lights with chrome housing installed for cab and crew cab access steps.

- One (1) light for the left access steps.
- Two (2) lights for the left side crew cab access steps.
- Two (2) lights for the right side crew cab access steps.
- One (1) light for the right side access step.

In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.

The lights shall be activated when the battery switch is on and the adjacent door is opened.

FENDER CROWNS

Stainless steel fender crowns shall be installed at the cab wheel openings.

CREW CAB WINDOWS

One (1) fixed window with tinted glass shall be provided on each side of the cab, to the rear of the front cab door. The windows shall be sized to enhance light penetration into the cab interior. The windows shall measure 18.70" wide x 23.75" high.

CAB DASH

The driver side dash, switch panel located to the right of the driver, and center console shall be an easily removable high impact resistant polymer cover.

The instrument gauge cluster shall be surrounded with a high impact ABS plastic contoured to the same shape of the instrument gauge cluster.

	Bidder Complies	
	Yes	No
<p>The officer side dash shall be a flat top design with an upper beveled edge to provide easy maintenance and shall be constructed out of aluminum and painted to match the cab interior.</p> <p><u>MOUNTING PLATE(S)</u> There shall be one (1) 0.25" aluminum mounting plate(s) provided and installed top of engine tunnel. The mounting surface shall be painted to match the cab interior. The plates(s) shall be mounted on 1.00" spacer stand-offs.</p> <p><u>CAB INTERIOR</u> The cab interior shall be constructed of primarily metal (painted aluminum) to withstand the severe duty cycles of the fire service.</p> <p>The engine tunnel shall be painted aluminum to match the cab interior.</p> <p>For durability and ease of maintenance, the cab interior side walls shall be painted aluminum. The rear wall shall be painted aluminum.</p> <p>Headliner shall be installed in both forward and rear cab sections. Headliner material shall be vinyl. A sound barrier shall be part of its composition. Material shall be installed on aluminum sheet and securely fastened to interior cab ceiling.</p> <p>Forward portion of cab headliner shall permit easy access for service of electrical wiring or other maintenance needs.</p> <p>All wiring shall be placed in metal raceways. Routing through holes in tubing shall not be accepted due to chaffing that installation shall cause.</p> <p><u>CAB INTERIOR UPHOLSTERY</u> The cab interior upholstery shall be 36 oz dark silver gray vinyl.</p> <p><u>CAB INTERIOR PAINT</u> The cab interior metal surfaces, excluding the rear heater panels, shall be painted fire smoke gray, vinyl texture paint.</p> <p>The rear heater panels shall be painted black, vinyl textured paint.</p> <p><u>CAB FLOOR</u> The cab and crew cab floor areas shall be smooth aluminum and covered with Line-X® polyurethane/polyurea elastomer abrasive resistant material.</p> <p>Line-X covering shall be black in color.</p> <p><u>DEFROST/AIR CONDITIONING SYSTEM</u> A ceiling mounted combination heater, defroster and air conditioning system shall be installed in the cab above the engine tunnel area.</p>		

Bidder Complies	
Yes	No

Cab Defroster

A 54,000 BTU heater-defroster unit with 690 SCFM of air flow shall be provided inside the cab. The heater-defrost shall be installed in the forward portion of the cab ceiling. Air outlets shall be strategically located in the cab header extrusion per the following:

- One (1) adjustable shall be directed towards the left side cab window
- One (1) adjustable shall be directed towards the right side cab window
- Six (6) fixed outlets shall be directed at the windshield

The defroster shall be capable of clearing 98 percent of the windshield and side glass when tested under conditions where the cab has been cold soaked at 0 degrees Fahrenheit for 10 hours, and a 2 ounce per square inch layer of frost/ice has been able to build up on the exterior windshield. The defroster system shall meet or exceed SAE J382 requirements.

Cab/Crew Auxiliary Heater

There shall be one (1) 31,000 BTU auxiliary heater with 560 SCFM of air flow provided in each outboard rear facing seat risers with a dual scroll blower. An aluminum plenum incorporated into the cab structure used to transfer heat to the forward positions.

Air Conditioning

A condenser shall be a 59,644 BTU output that meets and exceeds the performance specification shall be mounted on the radiator. Mounting the condenser below the cab or body would reduce the performance of the system and shall not be acceptable.

The air conditioning system shall be capable of cooling the average cab temperature from 100 degrees Fahrenheit to 75 degrees Fahrenheit at 50 percent relative humidity within 30 minutes. The cooling performance test shall be run only after the cab has been heat soaked at 100 degrees Fahrenheit for a minimum of 4 hours.

The evaporator unit shall be installed in the rear portion of the cab ceiling over the engine tunnel. The evaporator shall include one (1) high performance heating core, one (1) high performance cooling core with (1) plenum directed to the front and one (1) plenum directed to the rear of the cab. The rear plenum sa formed plastic cover.

The evaporator unit shall have a 52,000 BTU at 690 SCFM rating that meets and exceeds the performance specifications.

Adjustable air outlets shall be strategically located on the forward plenum cover per the following:

- Four (4) shall be directed towards the seating position on the left side of the cab
- Four (4) shall be directed towards the seating position on the right side of the cab

Adjustable air outlets shall be strategically located on the rear plenum cover per the following:

- Minimum of five (5) shall be directed towards crew cab area

	Bidder Complies	
	Yes	No
<p>A high efficiency particulate air (HEPA) filter shall be included for the system. Access to the filter cover shall be hinged with two (2) thumb latches.</p> <p>The air conditioner refrigerant shall be R-134A and shall be installed by a certified technician.</p> <p><u>Climate Control</u></p> <p>An automotive style controller shall be provided to control the heat and air conditioning system within the cab. The controller shall have three (3) functional knobs for fan speed, temperature, and air flow distribution (front to rear) control.</p> <p>The system shall control the temperature of the cab and crew cab automatically by pushing the center of the fan speed control knob. Rotate the center temperature control knob to set the cab and crew cab temperature.</p> <p>The AC system shall be manually activated by pushing the center of the temperature control knob. Pushing the center of the air flow distribution knob shall engage the AC for max defrost, setting the fan speeds to 100 percent and directing all air flow to the overhead forward position.</p> <p>The system controller shall be located within panel position #12.</p> <p><u>Gravity Drain Tubes</u></p> <p>Two (2) condensate drain tubes shall be provided for the air conditioning evaporator. The drip pan shall have two (2) drain tubes plumbed separately to allow for the condensate to exit the drip pan. No pumps shall be provided.</p> <p><u>SUN VISORS</u></p> <p>Two (2) smoked Lexan™ sun visors shall be provided. The sun visors shall be located above the windshield with one (1) mounted on each side of the cab.</p> <p>There shall be no retention bracket provided to help secure each sun visor in the stowed position.</p> <p><u>GRAB HANDLES</u></p> <p>A black rubber covered grab handle shall be mounted on the door post of the driver and officer's side cab door to assist in entering the cab. The grab handles shall be securely mounted to the post area between the door and windshield.</p> <p><u>ENGINE COMPARTMENT LIGHTS</u></p> <p>There shall be one (1) Whelen, Model 3SC0CDCR, 12 volt DC, 3.00" white LED light(s) with Whelen, Model 3FLANGEC, chrome flange kit(s) installed under the cab to be used as engine compartment illumination.</p> <p>These light(s) shall be activated automatically when the cab is raised.</p>		

	Bidder Complies	
	Yes	No
<p><u>ACCESS TO ENGINE DIPSTICKS</u></p> <p>For access to the engine oil and transmission fluid dipsticks, there shall be a door on the engine tunnel, inside the crew cab. The door shall be on the rear wall of the engine tunnel, on the vertical surface.</p> <p>The engine oil dipstick shall allow for checking only. The transmission dipstick shall allow for both checking and filling.</p> <p>The door shall have a rubber seal for thermal and acoustic insulation. One (1) flush latch shall be provided on the access door.</p> <p><u>SEATING CAPACITY</u></p> <p>The seating capacity in the cab shall be six (6).</p> <p><u>DRIVER SEAT</u></p> <p>A seat shall be provided in the cab for the driver. The seat design shall be a cam action type, with air suspension. For increased convenience, the seat shall include a manual control to adjust the horizontal position (6.00" travel). The manual horizontal control shall be a towel-bar style located below the forward part of the seat cushion. To provide flexibility for multiple driver configurations, the seat shall have an adjustable reclining back. The seat back shall be a high back style with side bolster pads for maximum support. For optimal comfort, the seat shall be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control).</p> <p>The seat shall be furnished with a 3-point, shoulder type seat belt.</p> <p><u>OFFICER SEAT</u></p> <p>A seat shall be provided in the cab for the passenger. The seat shall be a fixed type with no suspension. For optimal comfort, the seat shall be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control).</p> <p>The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.</p> <p>The seat shall be furnished with a 3-point, shoulder type seat belt.</p> <p><u>RADIO COMPARTMENT</u></p> <p>A radio compartment shall be provided under the officer's seat.</p> <p>The inside compartment dimensions shall be 16.00" wide x 7.50" high x 15.00" deep, with the back of the compartment angled up to match the cab structure.</p> <p>A drop-down door with a chrome plated lift and turn latch shall be provided for access.</p> <p>The compartment shall be constructed of smooth aluminum and painted to match the cab interior.</p>		

Bidder Complies	
Yes	No

REAR FACING DRIVER SIDE OUTBOARD SEAT

There shall be one (1) rear facing seat provided at the driver side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 15.00" deep foam cushions designed with EVC (elastomeric vibration control).

The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.

The seat shall be furnished with a 3-point, shoulder type seat belt.

REAR FACING PASSENGER SIDE OUTBOARD SEAT

There shall be one (1) rear facing seat provided at the passenger side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 15.00" deep foam cushions designed with EVC (elastomeric vibration control).

The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.

The seat shall be furnished with a 3-point, shoulder type seat belt.

FORWARD FACING CENTER SEATS

There shall be two (2) forward facing seats provided at the center position in the crew cab. For optimal comfort, the seats shall be provided with 15.00" deep foam cushions designed with EVC (elastomeric vibration control).

The seat back shall be an SCBA style with 90 degree back. The SCBA cavity shall be adjustable from front to rear in 1.00" increments to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.

The seats shall be furnished with a 3-point, shoulder type seat belt.

FORWARD FACING RIGHT SIDE CABINET

A forward facing cabinet shall be provided in the crew cab located at the right side outboard position.

The cabinet shall be 22.00" wide x 60.00" high x 16.25" deep with one (1) Gortite rollup door with satin anodized finish, non-locking. The frame to frame opening of the cabinet shall be 19.50" wide x 54.75" high. The minimum clear door opening of the cabinet shall be 16.75" wide x 48.87" high.

The cabinet shall include two (2) infinitely adjustable shelves with a 0.75" up-turned lip with a brushed finish.

	Bidder Complies	
	Yes	No
<p>The cabinet shall include no louvers.</p> <p>The cabinet shall be constructed of smooth aluminum, and painted to match the cab interior.</p> <p><u>Cabinet Light</u> There shall be one (1) white LED strip light installed on the left side of the interior cabinet door opening and one (1) white LED strip light installed on the right side of the interior cabinet door opening. The lighting shall be controlled by an automatic door switch.</p> <p><u>SEAT UPHOLSTERY</u> All seat upholstery shall be black Turnout Tuff material.</p> <p><u>AIR BOTTLE HOLDERS</u> All SCBA type seats in the cab shall have a "Hands-Free" auto clamp style bracket in its backrest. For efficiency and convenience, the bracket shall include an automatic spring clamp that allows the occupant to store the SCBA bottle by simply pushing it into the seat back. For protection of all occupants in the cab, in the event of an accident, the inertial components within the clamp shall constrain the SCBA bottle in the seat and shall exceed the NFPA standard of 9G. Bracket designs with manual restraints (belts, straps, buckles) that could be inadvertently left unlocked and allow the SCBA to move freely within the cab during an accident, shall not be acceptable.</p> <p>There shall be a quantity of five (5) SCBA brackets.</p> <p><u>SEAT BELTS</u> All cab and tiller cab (if applicable) seating positions shall have red seat belts. To provide quick, easy use for occupants wearing bunker gear, the female buckle and seat belt webbing length shall meet or exceed the current edition of NFPA 1901 and CAN/ULC - S515 standards.</p> <p>The 3-point shoulder type seat belts shall include height adjustment. This adjustment shall optimize the belts effectiveness and comfort for the seated firefighter. The 3-point shoulder type seat belts shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p>The 3-point shoulder type belts shall also include the ReadyReach D-loop assembly to the shoulder belt system. The ReadyReach feature adds an extender arm to the D-loop location placing the D-loop in a closer, easier to reach location.</p> <p>Any flip up seats shall include a 3-point shoulder type belts only.</p> <p>To ensure safe operation, the seats shall be equipped with seat belt sensors in the seat cushion and belt receptacle that shall activate an alarm indicating a seat is occupied but not buckled.</p> <p><u>HELMET STORAGE PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, section 14.1.7.4.1 requires a location for helmet storage be provided.</p>		

	Bidder Complies	
	Yes	No
<p>There is no helmet storage on the apparatus as manufactured. The fire department shall provide a location for storage of helmets.</p> <p><u>CAB DOME LIGHTS</u></p> <p>There shall be four (4) dual LED dome lights with black bezels provided. Two (2) lights shall be mounted above the inside shoulder of the driver and officer and two (2) lights shall be installed and located, one (1) on each side of the crew cab.</p> <p>The color of the LED's shall be red and white.</p> <p>The white LED's shall be controlled by the door switches and the lens switch.</p> <p>The color LED's shall be controlled by the lens switch.</p> <p>In order to ensure exceptional illumination, each white LED dome light shall provide a minimum of 10.1 foot-candles (fc) covering an entire 20.00" x 20.00" square seating position when mounted 40.00" above the seat.</p> <p><u>PORTABLE HAND LIGHTS, PROVIDED BY FIRE DEPARTMENT</u></p> <p>NFPA 1901, 2016 edition, section 5.9.4 requires two portable hand lights mounted in brackets fastened to the apparatus.</p> <p>The hand lights are not on the apparatus as manufactured. The fire department shall provide and mount these hand lights.</p> <p><u>CAB INSTRUMENTATION</u></p> <p>The cab instrument panel shall include gauges, telltale indicator lamps, control switches, alarms, and a diagnostic panel. The function of the instrument panel controls and switches shall be identified by a label adjacent to each item. Actuation of the headlight switch shall illuminate the labels in low light conditions. Telltale indicator lamps shall not be illuminated unless necessary. The cab instruments and controls shall be conveniently located within the forward cab section, forward of the driver. The gauge assembly and switch panels are designed to be removable for ease of service and low cost of ownership.</p> <p><u>Gauges</u></p> <p>The gauge panel shall include the following ten (10) black faced gauges with black bezels to monitor vehicle performance:</p> <ul style="list-style-type: none"> • Voltmeter gauge (volts): <ul style="list-style-type: none"> ○ Low volts (11.8 VDC) <ul style="list-style-type: none"> ▪ Amber telltale light on indicator light display with steady tone alarm ○ High volts (15.5 VDC) <ul style="list-style-type: none"> ▪ Amber telltale light on indicator light display with steady tone alarm • Engine Tachometer (RPM) • Speedometer MPH (Major Scale), KM/H (Minor Scale) • Fuel level gauge (Empty - Full in fractions): 		

Bidder Complies	
Yes	No

- Low fuel (1/8 full)
 - Amber indicator light in gauge dial with steady tone alarm
- Engine Oil pressure Gauge (PSI):
 - Low oil pressure to activate engine warning lights and alarms
 - Red indicator light in gauge dial with steady tone alarm
- Front Air Pressure Gauges (PSI):
 - Low air pressure to activate warning lights and alarm
 - Red indicator light in gauge dial with steady tone alarm
- Rear Air Pressure Gauges (PSI):
 - Low air pressure to activate warning lights and alarm
 - Red indicator light in gauge dial with steady tone alarm
- Transmission Oil Temperature Gauge (Fahrenheit):
 - High transmission oil temperature activates warning lights and alarm
 - Amber indicator light in gauge dial with steady tone alarm
- Engine Coolant Temperature Gauge (Fahrenheit):
 - High engine temperature activates an engine warning light and alarms
 - Red indicator light in gauge dial with steady tone alarm
- Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions):
 - Low fluid (1/8 full)
 - Amber indicator light in gauge dial

Indicator Lamps

To promote safety, the following telltale indicator lamps shall be located on the instrument panel in clear view of the driver. The indicator lamps shall be "dead-front" design that is only visible when active. The colored indicator lights shall have descriptive text or symbols.

The following amber telltale lamps shall be present:

- Low coolant
- Trac cntl (traction control) (where applicable)
- Check engine
- Check trans (check transmission)
- Air rest (air restriction)
- DPF (engine diesel particulate filter regeneration)
- HET (engine high exhaust temperature) (where applicable)
- ABS (antilock brake system)
- MIL (engine emissions system malfunction indicator lamp) (where applicable)
- Regen inhibit (engine emissions regeneration inhibit) (where applicable)
- Side roll fault (where applicable)
- Front air bag fault (where applicable)
- Aux brake overheat (auxiliary brake overheat) (where applicable)
- The following red telltale lamps shall be present:
- Ladder rack down

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Parking brake • Stop engine • The following green telltale lamps shall be present: <ul style="list-style-type: none"> • Left turn • Right turn • Battery on • Ignition • Aux brake (auxiliary brake engaged) (where applicable) • The following blue telltale lamps shall be present: <ul style="list-style-type: none"> • High beam <p><u>Alarms</u> Audible steady tone warning alarm: A steady audible tone alarm shall be provided whenever a warning condition is active.</p> <p><u>Indicator Lamp and Alarm Prove-Out</u> A system shall be provided which automatically tests telltale indicator lights and alarms located on the cab instrument panel. Telltale indicators and alarms shall perform prove-out for 3 to 5 seconds when the ignition switch is moved to the on position with the battery switch on.</p> <p><u>Control Switches</u> For ease of use, the following controls shall be provided immediately adjacent to the cab instrument panel within easy reach of the driver. All switches shall have backlit labels for low light applications.</p> <p>Headlight/Parking light switch: A three (3)-position maintained rocker switch shall be provided. The first switch position shall deactivate all parking and headlights. The second switch position shall activate the parking lights. The third switch shall activate the headlights.</p> <p>Panel back lighting intensity control switch: A three (3)-position momentary rocker switch shall be provided. Pressing the top half of the switch, "Panel Up" increases the panel back lighting intensity and pressing the bottom half of the switch, "Panel Down" decreases the panel back lighting intensity. Pressing the half or bottom half of the switch several times shall allow back lighting intensity to be gradually varied from minimum to maximum intensity level for ease of use.</p> <p>Ignition switch: A three (3)-position maintained/momentary rocker switch shall be provided. The first switch position shall turn off and deactivate vehicle ignition. The second switch position shall activate vehicle ignition and shall perform prove-out on the telltale indicators and alarms for 3 to 5 seconds after the switch is turned on. A green indicator lamp is activated with vehicle ignition. The third momentary position shall temporarily silence all active cab alarms. An alarm "chirp" may continue as long as alarm condition exists. Switching ignition to off position shall terminate the alarm silence feature and reset function of cab alarm system.</p>		

	Bidder Complies	
	Yes	No
<p>Engine start switch: A two (2)-position momentary rocker switch shall be provided. The first switch position is the default switch position. The second switch position shall activate the vehicle's engine. The switch actuator is designed to prevent accidental activation.</p> <p>Hazard switch shall be provided on the instrument panel or on the steering column.</p> <p>Heater, defrost, and air conditioning control panel.</p> <p>Turn signal arm: A self-canceling turn signal with high beam headlight controls.</p> <p>Windshield wiper control shall have high, low, and intermittent modes.</p> <p>Parking brake control: An air actuated push/pull park brake control.</p> <p>Chassis horn control: Activation of the chassis horn control shall be provided through the center of the steering wheel.</p> <p>High idle engagement switch: A maintained rocker switch with integral indicator lamp shall be provided. The switch shall activate and deactivate the high idle function. The "OK To Engage High Idle" indicator lamp must be active for the high idle function to engage. A green indicator lamp integral to the high idle engagement switch shall indicate when the high idle function is engaged.</p> <p>"OK To Engage High Idle" indicator lamp: A green indicator light shall be provided next to the high idle activation switch to indicate that the interlocks have been met to allow high idle engagement.</p> <p>Emergency switching shall be controlled by multiple individual warning light switches for various groups or areas of emergency warning lights. An Emergency Master switch provided on the instrument panel that enables or disables all individual warning light switches is included.</p> <p>An additional "Emergency Master" button shall be provided on the lower left hand corner of the gauge panel to allow convenient control of the "Emergency Master" system from inside the driver's door when standing on the ground.</p> <p><u>Custom Switch Panels</u></p> <p>The design of cab instrumentation shall allow for emergency lighting and other switches to be placed within easy reach of the operator thus improving safety. There shall be positions for up to four (4) switch panels in the lower instrument console and up to six (6) switch panels in the overhead visor console. All switches have backlit labels for low light conditions.</p> <p><u>Diagnostic Panel</u></p> <p>A diagnostic panel shall be provided and accessible while standing on the ground. The panel shall be located inside the driver's side door left of the steering column. The diagnostic panel shall allow diagnostic tools such as computers to connect to various vehicle systems for improved troubleshooting providing a lower cost of ownership. Diagnostic switches shall allow ABS systems to provide blink codes should a problem exist.</p>		

Bidder Complies	
Yes	No

The diagnostic panel shall include the following:

- ENGINE/TRANSMISSION/ABS J1939 Diagnostic Port
- ABS Diagnostic Switch and Indicator - The switch and amber indicator shall allow access to diagnostic mode and display of standard ABS system fault blink codes that may be generated by the ABS system
- DPF REGEN (Diesel Particulate Filter Regeneration Switch) (where applicable) shall be provided to request regeneration of the engine emission system. An amber indicator shall be provided on top of the switch that shall illuminate in a "CHECK ENGINE" condition
- REGEN INHIBIT (Diesel Particulate Filter Regeneration Inhibit Switch) (where applicable) shall be provided that shall request that regeneration be temporarily prevented. A green indicator shall be provided on top of the Regen Inhibit switch that shall illuminate when the Regen Inhibit feature is active. Regen Inhibit shall be disabled upon cycling of the ignition switch to the off state.

AIR RESTRICTION INDICATOR

A high air restriction warning indicator light (electronic) shall be provided.

"DO NOT MOVE APPARATUS" INDICATOR

A flashing red indicator light, located in the driving compartment, shall be illuminated automatically per the current NFPA requirements. The light shall be labeled "Do Not Move Apparatus If Light Is On."

The same circuit that activates the Do Not Move Apparatus indicator shall activate a pulsing alarm when the parking brake is released.

SWITCH PANELS

The built-in switch panels shall be located in the lower console or overhead console of the cab. Switches shall be rocker type with an indicator light, of which is an integral part of the switch.

WIPER CONTROL

Wiper control shall consist of a two (2)-speed windshield wiper control with intermittent feature and windshield washer controls.

SPARE CIRCUIT

There shall be two (2) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires shall have the following features:

- The positive wire shall be connected directly to the battery power
- The negative wire shall be connected to ground
- Wires shall be protected to 15 amps at 12 volts DC
- Power and ground shall terminate on the rear area of the engine tunnel
- Termination shall be with heat shrinkable butt splicing

Bidder Complies	
Yes	No

- Wires shall be sized to 125 percent of the protection

The circuit(s) may be load managed when the parking brake is set.

INFORMATION CENTER

There shall be a LCD display integral to the cab gauge panel provided that shall display the following information:

- Total distance
- Trip distance
- Total hours
- Trip hours
- PTO "A" hours
- PTO "B" hours

VEHICLE DATA RECORDER

There shall be a vehicle data recorder (VDR) capable of reading and storing vehicle information provided.

The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A USB cable can be used to connect the VDR to a laptop to retrieve required information. The program to download the information from the VDR will be available to download on-line.

The vehicle data recorder shall be capable of recording the following data via hardwired and/or CAN inputs:

- Vehicle Speed - MPH
- Acceleration - MPH/sec
- Deceleration - MPH/sec
- Engine Speed - RPM
- Engine Throttle Position - % of Full Throttle
- ABS Event - On/Off
- Seat Occupied Status - Yes/No by Position
- Seat Belt Buckled Status - Yes/No by Position
- Master Optical Warning Device Switch - On/Off
- Time - 24 Hour Time
- Date - Year/Month/Day

Seat Belt Monitoring System

A seat belt monitoring system (SBMS) shall be provided. The SBMS shall be capable of monitoring up to 10 seating positions indicating the status of each seat position per the following:

- Seat Occupied & Buckled = Green LED indicator illuminated

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Seat Occupied & Unbuckled = Red LED indicator with audible alarm • No Occupant & Buckled = Red LED indicator with audible alarm • No Occupant & Unbuckled = No indicator and no alarm <p>The SBMS shall include an audible alarm that shall warn that an unbuckled occupant condition exists and the parking brake is released, or the transmission is not in park.</p> <p><u>RADIO ANTENNA MOUNT</u></p> <p>There shall be two (2) standard 1.125", 18 thread antenna-mounting base(s) installed radio box behind officers seat on the cab roof with high efficiency, low loss, coaxial cable(s) routed to the radio box. A weatherproof cap shall be installed on the mount.</p> <p><u>ELECTRICAL POWER CONTROL SYSTEM</u></p> <p>A compartment shall be provided in or under the cab to house the vehicle's electrical power and signal circuit protection and control components. The power and signal protection and control compartment shall contain circuit protection devices and power control devices. Power and signal protection and control components shall be protected against corrosion, excessive heat, excessive vibration, physical damage and water spray.</p> <p>Serviceable components shall be readily accessible.</p> <p>Circuit protection devices, which conform to SAE standard, shall be utilized to protect each circuit. All circuit protection devices shall be sized to prevent wire and component damage when subjected to extreme current overload. General protection circuit breakers shall be Type-I automatic reset (continuously resetting) and conform to SAE J553 or J258. When required, automotive type fuses conforming to SAE J554, J1284, J1888 or J2077 shall be utilized to protect electronic equipment.</p> <p>Power control relays and solenoids shall have a direct current (dc) rating of 125 percent of the maximum current for which the circuit is protected.</p> <p>Visual status indicators shall be supplied to identify control safety interlocks and vehicle status. In addition to visual status indicators, audible alarms designed to provide early warning of problems before they become critical shall be used.</p> <p><u>Voltage Monitor System</u></p> <p>A voltage monitor system shall be provided to indicate the status of each battery system connected to the vehicle's electrical load. The monitor system shall provide visual and audio warning when the system voltage is above or below optimum levels.</p> <p><u>Power and Ground Studs</u></p> <p>Spare circuits shall be provided in the primary distribution center for two-way radio equipment.</p> <p>The spare circuits shall consist of the following:</p> <ul style="list-style-type: none"> • One (1) 12-volt DC, 30 amp battery direct spare 		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> One (1) 12-volt DC ground and un-fused switched battery stud located in or adjacent to the power distribution center <p><u>EMI/RFI Protection</u></p> <p>The electrical system proposed shall include means to control undesired electromagnetic and radio frequency emissions. State of the art electrical system design and components shall be used to ensure radiated and conducted EMI (electromagnetic interference) and RFI (radio frequency interference) emissions are suppressed at their source.</p> <p>The apparatus proposed shall have the ability to operate in the electromagnetic environment typically found in fire ground operations. The contractor shall be able to demonstrate the EMI and RFI testing has been done on similar apparatus and certifies that the vehicle proposed meets SAE J551 requirements.</p> <p>EMI/RFI susceptibility shall be controlled by applying immune circuit designs, shielding, twisted pair wiring and filtering. The electrical system shall be designed for full compatibility with low level control signals and high powered two-way radio communication systems. Harness and cable routing shall be given careful attention to minimize the potential for conducting and radiated EMI-RFI susceptibility.</p> <p><u>ELECTRICAL</u></p> <p>All 12-volt electrical equipment installed by the apparatus manufacturer shall conform to modern automotive practices. All wiring shall be high temperature crosslink type. Wiring shall be run, in loom or conduit, where exposed and have grommets where wire passes through sheet metal. Automatic reset circuit breakers shall be provided which conform to SAE Standards. Wiring shall be color, function and number coded. Function and number codes shall be continuously imprinted on all wiring harness conductors at 2.00" intervals. Exterior exposed wire connectors shall be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids.</p> <p>Electrical wiring and equipment shall be installed utilizing the following guidelines:</p> <ol style="list-style-type: none"> All holes made in the roof shall be caulked with silicon, rope caulk is not acceptable. Large fender washers, liberally caulked, shall be used when fastening equipment to the underside of the cab roof. Any electrical component that is installed in an exposed area shall be mounted in a manner that shall not allow moisture to accumulate in it. Exposed area shall be defined as any location outside of the cab or body. Electrical components designed to be removed for maintenance shall not be fastened with nuts and bolts. Metal screws shall be used in mounting these devices. Also a coil of wire shall be provided behind the appliance to allow them to be pulled away from mounting area for inspection and service work. Corrosion preventative compound shall be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections shall require this compound in the plug to prevent corrosion and for easy separation (of the plug). 		

	Bidder Complies	
	Yes	No
<p>5. All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.</p> <p>6. All electrical terminals in exposed areas shall have silicon (1890) applied completely over the metal portion of the terminal.</p> <p>All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard #108, shall be furnished. Rear identification lights shall be recessed mounted for protection. Lights and wiring mounted in the rear bulkheads shall be protected from damage by installing a false bulkhead inside the rear compartments.</p> <p>An operational test shall be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.</p> <p>The results of the tests shall be recorded and provided to the purchaser at time of delivery.</p> <p><u>BATTERY SYSTEM</u></p> <p>There shall be four (4) 12 volt Exide®, Model 31S950X3W, batteries that include the following features shall be provided:</p> <ul style="list-style-type: none"> • 950 CCA, cold cranking amps • 190 amp reserve capacity • High cycle • Group 31 • Rating of 3800 CCA at 0 degrees Fahrenheit • 760 minutes of reserve capacity • Threaded stainless steel studs <p>Each battery case shall be a black polypropylene material with a vertically ribbed container for increased vibration resistance. The cover shall be manifold vented with a central venting location to allow a 45 degree tilt capacity.</p> <p>The inside of each battery shall consist of a "maintenance free" grid construction with poly wrapped separators and a flooded epoxy bottom anchoring for maximum vibration resistance.</p> <p><u>BATTERY SYSTEM</u></p> <p>There shall be a single starting system with an ignition switch and starter button provided and located on the cab instrument panel.</p> <p><u>MASTER BATTERY SWITCH</u></p> <p>There shall be a master battery switch provided within the cab within easy reach of the driver to activate the battery system.</p> <p>An indicator light shall be provided on the instrument panel to notify the driver of the status of the battery system.</p>		

	Bidder Complies	
	Yes	No
<p><u>BATTERY COMPARTMENTS</u></p> <p>Batteries shall be placed on non-corrosive mats and be stored in well-ventilated, painted stainless steel compartments located under the cab.</p> <p>Heavy-duty battery cables shall be used to provide maximum power to the electrical system. Cables shall be color-coded.</p> <p>Battery terminal connections shall be coated with anti-corrosion compound. Battery solenoid terminal connections shall be encapsulated with semi-permanent rubberized compound.</p> <p><u>JUMPER STUDS</u></p> <p>One (1) set of battery jumper studs with plastic color-coded covers shall be included on the battery compartments.</p> <p><u>BATTERY CHARGER</u></p> <p>There shall be an IOTA™, Model DSL 75, battery charger with IQ4, controller provided.</p> <p>The battery charger shall be wired to the AC shoreline inlet through an AC receptacle adjacent to this battery charger.</p> <p>There shall be a Kussmaul™, Model #091-94-12, remote indicator included.</p> <p>The battery charger shall be located in the left body compartment mounted on the left wall as high as possible.</p> <p>The battery charger indicator shall be located on the driver's seat riser.</p> <p><u>AUTO EJECT FOR SHORELINE</u></p> <p>There shall be one (1) Kussmaul™, Model 091-55-20-120, 20 amp 120 volt AC shoreline inlet(s) provided to operate the dedicated 120 volt AC circuits on the apparatus.</p> <p>The shoreline inlet(s) shall include red weatherproof flip up cover(s).</p> <p>There shall be a release solenoid wired to the vehicle's starter to eject the AC connector when the engine is starting.</p> <p>The shoreline(s) shall be connected to the battery charger.</p> <p>There shall be a mating connector body supplied with the loose equipment.</p> <p>There shall be a label installed near the inlet(s) that state the following:</p> <ul style="list-style-type: none"> • Line Voltage • Current Rating (amps) • Phase • Frequency 		

Bidder Complies	
Yes	No

The shoreline receptacle shall be located on the driver side of cab, above wheel.

ALTERNATOR

A Delco Remy®, Model 55SI, alternator shall be provided. It shall have a rated output current of 430 amps, as measured by SAE method J56. The alternator shall feature an integral regulator and rectifier system that has been tested and qualified to an ambient temperature of 257 degrees Fahrenheit (125 degrees Celsius). The alternator shall be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.

ELECTRONIC LOAD MANAGEMENT

An electronic load management (ELM) system that monitors the vehicles 12-volt electrical system, and automatically reduces the electrical load in the event of a low voltage condition and by doing so, ensures the integrity of the electrical system.

The ELM shall monitor the vehicle's voltage while at the scene (parking brake applied). It shall sequentially shut down individual electrical loads when the system voltage drops below a preset value. Two (2) separate electrical loads shall be controlled by the load manager. The ELM shall sequentially re-energize electrical loads as the system voltage recovers.

HEADLIGHTS

There shall be four (4) JW Speaker®, Model 8800, 4" x 6" rectangular LED lights mounted in the front quad style, chrome housing on each side of the cab grille:

- the outside light on each side shall contain a part number 055***1 low beam module
- the inside light on each side shall contain a part number 055***1 high beam module
- the headlights to include chrome bezels

The low beam lights shall be activated when the headlight switch is on.

The high beam and low beam lights shall be activated when the headlight switch and the high beam switch is activated.

DIRECTIONAL LIGHTS

There shall be two (2) Whelen 600 series, LED combination directional/marker lights provided. The lights shall be located on the outside cab corners, next to the headlights.

The color of the lenses shall be clear.

INTERMEDIATE LIGHT

There shall be two (2) Weldon, Model 9186-8580-29, amber LED turn signal marker lights furnished, one (1) each side, in the rear fender panel. The light shall double as a turn signal and marker light.

CAB CLEARANCE/MARKER/ID LIGHTS

There shall be seven (7) amber LED lights provided per the following:

Bidder Complies	
Yes	No

- Three (3) amber LED identification lights shall be installed in the center of the cab above the windshield.
- Two (2) amber LED clearance lights shall be installed, one (1) on each outboard side of the cab above the windshield as close to the outside of the apparatus as practical.
- Two (2) amber LED clearance lights shall be installed, one (1) on each side of the cab as high and far forward as practical.

The lights shall be installed without guards.

FRONT CAB SIDE DIRECTIONAL LIGHTS

There shall be two (2) Truck-Lite®, Model 19036Y, amber LED lights installed to the outside of the chrome wrap around bezel, one (1) on each side of the cab.

The lights shall activate as additional directional lights with the corresponding directional circuit.

REAR CLEARANCE/MARKER/ID LIGHTING

There shall be a three (3) LED light bar used as identification lights located at the rear of the apparatus per the following:

- As close as practical to the vertical centerline
- Centers spaced not less than 6.00" or more than 12.00" apart
- Red in color
- All at the same height

There shall be two (2) LED lights installed at the rear of the apparatus used as clearance lights located at the rear of the apparatus per the following:

- To indicate the overall width of the vehicle
- One (1) each side of the vertical centerline
- As near the top as practical
- Red in color
- To be visible from the rear
- All at the same height

There shall be two (2) LED lights installed on the side of the apparatus used as marker lights as close to the rear as practical per the following:

- To indicate the overall length of the vehicle
- One (1) each side of the vertical centerline
- As near the top as practical
- Red in color
- To be visible from the side
- All at the same height

	Bidder Complies	
	Yes	No
<p>There shall be two (2) red reflectors located on the rear of the truck facing to the rear. One (1) each side, as far to the outside as practical, at a minimum of 15.00", but no more than 60.00", above the ground.</p> <p>There shall be two (2) red reflectors located on the side of the truck facing to the side. One (1) each side, as far to the rear as practical, at a minimum of 15.00", but no more than 60.00", above the ground.</p> <p>Per FMVSS 108 and CMVSS 108 requirements.</p> <p><u>REAR FMVSS LIGHTING</u></p> <p>The rear stop/tail and directional LED lighting shall consist of the following:</p> <ul style="list-style-type: none"> • Two (2) Whelen®, Model M6BTT, red LED stop/tail lights • Two (2) Whelen, Model M6T, amber LED arrow turn lights <p>The lights shall be provided with color lenses.</p> <p>The lights shall be mounted in a polished combination housing.</p> <p>There shall be two (2) Whelen Model M6BUW, LED backup lights provided in the tail light housing.</p> <p><u>LICENSE PLATE BRACKET</u></p> <p>There shall be one (1) license plate bracket mounted on the rear of the body.</p> <p>A white LED light shall illuminate the license plate. A stainless steel light shield shall be provided over the light that shall direct illumination downward, preventing white light to the rear.</p> <p><u>LIGHTING BEZEL</u></p> <p>There shall be two (2) Whelen, Model M6FCV4P, four (4) place chromed ABS housings provided for the rear M6 series stop/tail, directional, back up, scene lights or warning lights.</p> <p><u>BACK-UP ALARM</u></p> <p>A PRECO, Model 1040, solid-state electronic audible back-up alarm that actuates when the truck is shifted into reverse shall be provided. The device shall sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum ten (10) dBA above surrounding environmental noise levels.</p> <p><u>CAB PERIMETER SCENE LIGHTS</u></p> <p>There shall be four (4) Amdor, Model AY-LB-12HW020, 350 lumens each, 20.00" white LED strip lights provided, one (1) for each cab door.</p> <p>These lights shall be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body perimeter scene lights.</p>		

Bidder Complies	
Yes	No

PUMP HOUSE PERIMETER LIGHTS

There shall be four (4) Amdor, Model AY-LB-12HW0**, white LED light strips provided.

The lights shall be mounted in the following locations:

- One (1) Model AY-LB-12HW012, 190 lumens each, 12.00" LED light shall be provided under the driver's side top mount pump panel access step
- One (1) Model AY-LB-12HW020, 350 lumens each, 20.00" LED light shall be provided under the driver's side pump panel running board
- One (1) Model AY-LB-12HW020, 350 lumens each, 20.00" LED light shall be provided under the passenger's side pump panel running board
- One (1) Model AY-LB-12HW012, 190 lumens each, 12.00" LED light shall be provided under the passenger's side top mount pump panel access step

The light shall be activated when the battery switch is on, and controlled by the same means as the body perimeter lights.

BODY PERIMETER SCENE LIGHTS

There shall be two (2) Amdor, Model AY-LB-12HW020, 350 lumens, 20.00" long, white LED's, 12 volt DC lights provided at the rear step area of the body, one (1) each side shining to the rear.

The perimeter scene lights shall be activated when the parking brake is applied.

STEP LIGHTS

Four (4) white LED step lights shall be provided. One (1) step light shall be provided on each side, on the front compartment face and two (2) step lights at the rear to illuminate the tailboard.

In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15.00" x 15.00" square placed 10.00" below the light and a minimum of 1.5 fc covering an entire 30.00" x 30.00" square at the same 10.00" distance below the light.

These step lights shall be actuated with the pump panel light switch.

All other steps on the apparatus shall be illuminated per the current edition of NFPA 1901.

12 VOLT LIGHTING

There shall be one (1) Whelen® Model P*H2*, 17,750 lumens 12 volt DC light(s) with flood optics provided on the front visor, centered.

The housing(s) painted parts of this light assembly to be white. The light(s) shall be controlled by a switch at the driver's side switch panel and by a switch at the passenger's side switch panel.

These light(s) may be load managed when the parking brake is applied.

	Bidder Complies	
	Yes	No
<p><u>12 VOLT DC SCENE LIGHTS</u></p> <p>There shall be two (2) Whelen® Model P*H1*, 8,875 lumens 12 volt DC powered lights with white LEDs and flood optics installed on the apparatus located, on the upper center of the LS and RS cab.</p> <p>The light(s) to be installed in an all black 0 degree vertical recessed bracket PBH103BB.</p> <p>The painted parts of this light assembly to be white.</p> <p>The lights shall be activated by a switch at the driver's side switch panel, by a switch at the passenger's side switch panel and when the cab or crew cab doors on the driver's side are open.</p> <p>The light(s) may be load managed when the parking brake is applied.</p> <p><u>12 VOLT LIGHTING</u></p> <p>There shall be one (1) Whelen® Model PCPSM2*, 16,000 lumens 12 volt DC surface mount light(s) installed on the body of the apparatus located, on the upper LS rear body mounted in front of the M9 warning light.</p> <p>The light(s) shall include housing(s) with a chrome cover.</p> <p>The light(s) shall be controlled by a switch at the driver's side switch panel, by a switch at the passenger's side switch panel and by a switch at the top mount pump panel.</p> <p>The light(s) may be load managed when the parking brake is applied.</p> <p><u>12 VOLT LIGHTING</u></p> <p>There shall be one (1) Whelen® Model PCPSM2*, 16,000 lumens 12 volt DC surface mount light(s) installed on the body of the apparatus located, on the upper RS rear body mounted just inside the M9 warning light.</p> <p>The light(s) shall include housing(s) with a chrome cover.</p> <p>The light(s) shall be controlled by a switch at the driver's side switch panel, by a switch at the passenger's side switch panel and by a switch at the top mount pump panel.</p> <p>The light(s) may be load managed when the parking brake is applied.</p> <p><u>DECK LIGHTS</u></p> <p>There shall be two (2) Whelen, Model PFBP12C, 12 volt DC LED floodlights with swivel mount provided at the rear of the hose bed, one (1) each side.</p> <p>The lights shall be activated by a control from a switch at the rear of the truck.</p>		

Bidder Complies	
Yes	No

HOSE BED LIGHTS

There shall be white 12 volt DC LED light strips with stainless steel protective cover, provided to light the hose bed area. Hose Bed lights shall meet the photometric levels listed in NFPA 1901 for Hose Bed lighting requirements.

- Light strip(s) shall be installed along the upper edge of the left side of the hose bed.
- Light strip(s) shall be installed along the upper edge of the right side of the hose bed.

The lights shall be activated by a cup switch at the rear of the apparatus no more than 72.00" from the ground.

WALKING SURFACE LIGHT

There shall be Model FRP, 4" round black 12 volt DC LED floodlight(s) with bolt mount provided to illuminate the entire designated walking surface on top of the body.

The light(s) shall be activated when the body step lights are on.

WATER TANK, 2500 GALLON POLYPROPYLENE

The tank shall be built by United Plastic Fabricating, Inc. The booster tank shall have a capacity of 2500 gallons and be constructed of polypropylene plastic. Tank to be "T" shaped to provide for deep side compartments and to serve as a large sump to limit the amount of undraftable water. The joints and seams shall be nitrogen welded inside and out. Tank to be baffled in accordance with NFPA Bulletin 1901 requirements. The baffles shall have vent openings at both the top and bottom to permit movement of air and water between compartments. The longitudinal partitions shall be constructed of .38" polypropylene plastic and shall extend from the bottom of the tank through the top cover to allow positive welding. The transverse partitions shall extend from 4.00" off the tank bottom to the underside of the top cover. All partitions shall interlock and shall be welded to the tank bottom and sides.

The tank top shall be constructed of .50" polypropylene. It shall be recessed .38" from the top of the tank and shall be welded to the tank sides and the longitudinal partitions. Top shall be sufficiently supported to keep it rigid during fast filling conditions. Construction shall include 2.00" polypropylene dowels spaced no more than 30.00" apart and welded to the transverse partitions. Two (2) of the dowels shall be drilled and tapped (.50" diameter, 13.00" deep) to accommodate lifting eyes.

A sump that will be sized dependent on the tank to pump plumbing shall be provided at the bottom of the water tank. The sump shall include a drain plug and the tank outlet.

The tank shall be installed in a fabricated cradle assembly constructed on 3.00" x 3.00" x .25" angle iron.

Rubber cushions, .50" thick x 3.00" wide, shall be placed on all horizontal surfaces that the tank rests on.

	Bidder Complies	
	Yes	No
<p>Fill tower shall be constructed of .50" polypropylene and shall be a minimum of 10.00" wide x 16.00" long. The fill tower shall be located in the center of the tank on the left side.</p> <p>Fill tower shall be furnished with a .25" thick polypropylene screen and a hinged cover.</p> <p>An overflow pipe, constructed of 6.00" schedule 40 polypropylene, shall be installed approximately halfway down the fill tower and extend through the water tank and dump to the rear of the rear axle.</p> <p><u>POLY TANK NOTCH</u></p> <p>A notch shall be provided at the front of the poly water tank. The notch shall be large enough for hose, hydraulic lines, or electrical wiring at the front of the hose bed.</p> <p><u>DIRECT TANK FILL</u></p> <p>There shall be one (1) 2.50" body w/3.00" piping Fireman's Friend Inc., Model FFE 2530 CF8M-F semi-automatic tank fill(s) installed and properly labeled at the rear of the water tank, located left side with the valve installed as low as practical for easy hose connection.</p> <p>A 2.50" (F)NST chrome swivel inlet connection shall be located at the inlet.</p> <p>A 2.50" chrome plated 30 degree elbow and plug with VLH automatic pressure relieving thread technology shall be provided for the tank fill.</p> <p><u>DIRECT TANK FILL</u></p> <p>There shall be one (1) - 4.00" Fireman's Friend Inc. semi-automatic tank fill(s) installed and properly labeled, located on the right side of the rear body, as low as practical for easy hose connection.</p> <p>Piping, for the fill, shall be routed through the wall of the tank and include a flow diffuser to break up the stream of water entering the water tank.</p> <p>A 4.00" (F)NST x 4.00" Storz hard coat aluminum 30 degree elbow adapter and 4.00" blind cap shall be provided for the tank fill.</p> <p><u>TANK DUMP</u></p> <p>A tank dump shall be installed at the rear of the tank.</p> <p>The dump shall be gated with a 10.00" square stainless steel Newton dump valve.</p> <p>The dump valve shall have an actuated electric control.</p> <p>Controls for the valve shall be located inside the cab and at the left side rear of body.</p> <p>A 180 degree, Newton 6012SW-34 swivel dump chute shall be provided. The chute shall include a Newton 4036-34 telescopic extension to allow the chute to extend past the body side for dumping.</p> <p>The water tank design shall include additional support for this chute.</p>		

Bidder Complies	
Yes	No

SWITCH, MASTER FOR DUMP VALVE

One (1) master on/off switch shall be provided for the water tank dump valves. The switch shall be located at the cab instrument panel.

HOSE BED

The hose bed shall be fabricated of .125"-5052 aluminum with a nominal 38,000 psi tensile strength.

The sides shall not form any portion of the fender compartments.

Upper and rear edges of side panels shall have a double break for rigidity, a split tube finish shall not be acceptable.

The upper inside area of the beavertails shall be covered with brushed stainless steel to prevent damage to painted surface when hose is removed.

Flooring of the hose bed shall be removable aluminum grating with the top surface corrugated to aid in hose aeration. The grating slats shall be a minimum of 0.50" x 4.50" with spacing between slats for hose ventilation.

The hose bed walls shall be unpainted and dual action finished.

Hose bed shall accommodate HB #1 250' of 2.50" DJ HB #2 1000' of 4.00" LDH HB #3 250' of 2.50" DJ.

HOSE BED DIVIDER

Three (3) adjustable hosebed dividers shall be furnished for separating hose.

Each divider shall be constructed of a .125" brushed aluminum sheet fitted and fastened into a slotted, 1.50" diameter radiused extrusion along the top, bottom, and rear edge.

Divider shall be fully adjustable by sliding in tracks, located at the front and rear of the hose bed.

Divider shall be held in place by tightening bolts, at each end.

Acorn nuts shall be installed on all bolts in the hose bed which have exposed threads.

A cross-divider shall be provided just behind the fill tower. The divider shall be bolted to the side sheets. A reinforced aluminum treadplate floor shall be provided between the front of the hose bed and the cross-divider. Cross structure shall be provided below the hose bed floor.

HOSEBED HOSE RESTRAINT

A black hosebed cover shall be furnished with jacket snaps fasteners at the front and jacket snap fasteners on the sides. There shall be 2.00" cam buckle fasteners at the bottom of the rear body sheet below the hosebed. The flap at the rear shall be not weighted.

RUNNING BOARDS

Running boards shall be fabricated of .125" bright aluminum treadplate.

	Bidder Complies	
	Yes	No
<p>Each running board shall be supported by a welded 2.00" square tubing and channel assembly, which shall be bolted to the pump compartment substructure.</p> <p>Running boards shall be 12.75" deep and spaced .50" away from the pump panel.</p> <p>A splash guard shall be provided above the running board treadplate.</p> <p><u>TAILBOARD</u></p> <p>The tailboard shall also be constructed of .125" bright aluminum treadplate and spaced .50" from the body, as well as supported by a structural steel assembly.</p> <p>The tailboard area shall be 10.00" deep.</p> <p>The exterior sides shall be flanged down and in for increased rigidity of tailboard structure.</p> <p><u>REAR WALL, SMOOTH ALUMINUM/BODY MATERIAL</u></p> <p>The rear facing surfaces of the center rear wall shall be smooth aluminum.</p> <p>The bulkheads, the surface to the rear of the side body compartments, shall be smooth and the same material as the body.</p> <p>Any inboard facing surfaces below the height of the hosebed shall be aluminum diamondplate.</p> <p><u>TOW EYES</u></p> <p>There shall be a total of two (2) painted tow eyes provided and mounted directly to the chassis frame rails at the rear of the apparatus. The inner and outer edges of the tow eyes shall have a radius.</p> <p><u>HOSE TRAY</u></p> <p>One (1) hose tray free floating hose tray(s) to fit in the opening of the running board shall be provided in the right hand side running board. The tray shall be flanged and drop in from the top.</p> <p>Capacity of the tray shall be 25' of 5.00" hose.</p> <p>Rubber matting shall be installed on the floor of the tray to provide proper ventilation. Drain holes shall be provided.</p> <p><u>HOSE TRAY</u></p> <p>One (1) hose tray, free floating/push-up style, to fit in the opening of the running board shall be provided in the left hand side running board.</p> <p>Capacity of the tray shall be 100' of 1.50" hose.</p> <p>Rubber matting and drain holes shall be installed on the floor of the tray to provide proper ventilation.</p>		

Bidder Complies	
Yes	No

RUNNING BOARD HOSE RESTRAINT

There shall be Two (2) hose trays that have a black vinyl cover. Each cover shall have velcro with snaps fasteners. The fasteners shall be located one (1) LS one (1) RS.

COMPARTMENTATION

Body and compartments shall be fabricated of .125", 5052-H32 aluminum.

Side compartments shall be an integral assembly with the rear fenders.

Circular fender liners shall be provided for prevention of rust pockets and ease of maintenance.

Side compartment flooring shall be of the sweep out design with the floor higher than the compartment door lip.

The side compartment door opening shall be framed by flanging the edges in 1.75" and bending out again .75" to form an angle.

Drip protection shall be provided above the doors by means of bright aluminum extrusion, formed bright aluminum treadplate or polished stainless steel.

The top of the compartment shall be covered with bright aluminum treadplate rolled over the edges on the front, rear and outward side. These covers shall have the corners welded.

Side compartment covers shall be separate from the compartment tops.

Front facing compartment walls shall be covered with bright aluminum treadplate.

All screws and bolts which protrude into a compartment shall have acorn nuts on the ends to prevent injury.

UNDERBODY SUPPORT SYSTEM

Due to the severe loading requirements of this pumper a method of body and compartment support suitable for the intended load shall be provided.

The backbone of the support system shall be the chassis frame rails which is the strongest component of the chassis and is designed for sustaining maximum loads.

The support system shall include .375" thick steel vertical angle supports bolted to the chassis frame rails with .625" diameter bolts.

Attached to the bottom of the steel vertical angles shall be horizontal angles, with gussets welded to the vertical members, which extend to the outside edge of the body.

A steel frame shall be mounted on the top of these supports to create a floating substructure which shall result in a 500 lb equipment support rating per lower front compartments.

	Bidder Complies	
	Yes	No
<p>The floating substructure shall be separated from the horizontal members with neoprene elastomer isolators. These isolators shall reduce the natural flex stress of the chassis from being transmitted to the body.</p> <p>Isolators shall have a broad load range, proven viability in vehicular applications, be of a fail safe design and allow for all necessary movement in three (3) transitional and rotational modes.</p> <p>A design with body compartments hanging on the chassis in an unsupported fashion shall not be acceptable.</p> <p><u>AGGRESSIVE WALKING SURFACE</u></p> <p>All exterior surfaces designated as stepping, standing, and walking areas shall comply with the required average slip resistance of the current NFPA standards.</p> <p><u>LOUVERS</u></p> <p>Louvers shall be stamped into compartment walls to provide the proper airflow inside the body compartments and to prevent water from dripping into the compartment. Where these louvers are provided, they shall be formed into the metal and not added to the compartment as a separate plate.</p> <p><u>LEFT SIDE COMPARTMENTATION</u></p> <p>The left side compartmentation shall consist of four rollup door compartments.</p> <p>A full height, rollup door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 44.50" wide x 67.00" high x 24.38" deep in the lower 24.75" of the compartment and 11.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 38.75" wide x 57.25" high.</p> <p>A rollup door compartment over the forward tandem wheel shall be provided. The interior dimensions of this compartment shall be 54.38" wide x 33.13" high x 11.00" deep. The clear door opening shall be a minimum of 48.75" wide x 23.38" high.</p> <p>A rollup door compartment over the rear tandem wheel shall be provided. The interior dimensions of this compartment shall be 57.00" wide x 33.13" high x 11.00" deep. The clear door opening shall be a minimum of 48.75" wide x 23.38" high.</p> <p>A full height, rollup door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 51.75" wide x 68.00" high x 24.38" deep in the lower 25.75" of height and 11.00" deep in the remaining upper section of the compartment. The clear door opening shall be a minimum of 48.75" wide x 58.25" high.</p> <p>The interior height of the compartments shall be measured from the compartment floor to the ceiling. The spool of the rollup door at the top of the compartment takes up some usable space. The depth of the compartments shall be measured from the back wall to the inside of the door frame.</p>		

	Bidder Complies	
	Yes	No
<p>Closing of the doors shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p><u>RIGHT SIDE COMPARTMENTATION</u></p> <p>The right side compartmentation shall consist of two rollup door compartments.</p> <p>A rollup door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 44.50" wide x 32.75" high x 24.38" deep in the lower 24.75" of the compartment and 11.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 38.75" wide x 23.00" high.</p> <p>A rollup door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 51.75" wide x 33.75" high x 24.38" deep in the lower 25.75" of height and 11.00" deep in the remaining upper section of the compartment. The clear door opening shall be a minimum of 48.75" wide x 24.00" high.</p> <p>The interior height of the compartments shall be measured from the compartment floor to the ceiling. The spool of the rollup door at the top of the compartment takes up some usable space. The depth of the compartments shall be measured from the back wall to the inside of the door frame.</p> <p>Closing of the doors shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p><u>SIDE COMPARTMENT ROLLUP DOORS</u></p> <p>There shall be six (6) compartment doors installed on the side compartments. The doors shall be double faced aluminum construction, painted one (1) color to match the lower portion of the body and manufactured by Gortite®.</p> <p>Lath sections shall be an interlocking rib design and shall be individually replaceable without complete disassembly of door.</p> <p>Between each slat at the pivoting joint shall be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals shall allow door to operate in extreme temperatures ranging from 180 to -40 degrees Fahrenheit. Side, top and bottom seals shall be provided to resist ingress of dirt and weather and be made of Santoprene.</p> <p>All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from 300 to -40 degrees Fahrenheit. Hardened plastic shall not be acceptable.</p> <p>A polished stainless steel lift bar to be provided for each roll-up door. Lift bar shall be located at the bottom of door and have latches on the outer extrusion of the doors frame. A ledge shall be supplied over lift bar for additional area to aid in closing the door.</p> <p>Doors shall be constructed from an aluminum box section. The exterior surface of each slat shall be flat. The interior surfaces shall be concave to provide strength and prevent loose equipment from jamming the door from inside.</p>		

	Bidder Complies	
	Yes	No
<p>To conserve space in the compartments, the spring roller assembly shall not exceed 3.00" in diameter. A garage style roll door shall not be acceptable.</p> <p>The header for the rollup door assembly shall not exceed 4.00".</p> <p>A heavy-duty magnetic switch shall be used for control of open compartment door warning lights.</p> <p><u>REAR COMPARTMENTATION</u></p> <p>A tool compartment shall be provided at the rear of the apparatus. The compartment shall be 26.00" wide x 8.00" high x 6.00" deep.</p> <p><u>DROP-DOWN REAR COMPARTMENT DOOR</u></p> <p>A drop-down door constructed of bright aluminum treadplate with a lift and turn latch shall be provided.</p> <p><u>COMPARTMENT LIGHTING</u></p> <p>There shall be six (6) compartment(s) with two (2) white 12 volt DC LED compartment light strips. The dual light strips shall be centered vertically along each side of the door framing. There shall be two (2) light strips per compartment. The dual light strips shall be in all body compartment(s).</p> <p>Any remaining compartments without light strips shall have a 6.00" diameter Truck-Lite, Model: 79384 light. Each light shall have a number 1076 one filament, two wire bulb.</p> <p>Opening the compartment door shall automatically turn the compartment lighting on.</p> <p><u>MOUNTING TRACKS</u></p> <p>There shall be seven (7) sets of tracks for mounting shelf(s) in LS1, LS2, LS3, RS1, RS2, RS3 and B1. These tracks shall be installed vertically to support the adjustable shelf(s), and shall be full height of the compartment. The tracks shall be painted to match the compartment interior.</p> <p><u>ADJUSTABLE SHELVES</u></p> <p>There shall be seven (7) shelves with a capacity of 500 lb provided.</p> <p>The shelf construction shall consist of .188" aluminum with a brushed finish with 2.00" sides.</p> <p>Each shelf shall be infinitely adjustable by means of a threaded fastener, which slides in a track.</p> <p>The shelves shall be held in place by .12" thick stamped plated brackets and bolts.</p> <p>The location(s) shall be determined at a later date.</p> <p><u>SLIDE-OUT ADJUSTABLE HEIGHT TRAY</u></p> <p>There shall be three (3) slide-out trays provided.</p> <p>Each tray shall have 2.00" high sides and a minimum capacity rating of 250 lb in the extended position.</p>		

	Bidder Complies	
	Yes	No
<p>Each tray shall be designed to be as wide and as deep as the compartment space shall allow.</p> <p>with a brushed finish</p> <p>Each tray shall be mounted on a pair of side mounted slides. The slide mechanisms shall have ball bearings for ease of operation and years of dependable service. The slides shall be mounted to shelf tracks to allow the tray to be adjustable up and down within the designated mounting location.</p> <p>An automatic lock shall be provided for both the in and out tray positions. The lock trip mechanism shall be located at the front of the tray and shall be easily operated with a gloved hand.</p> <p>The tray(s) shall be located LS1, LS2, LS3.</p> <p><u>PORTABLE TANK RACK, HYDRAULIC</u></p> <p>A Zico Quic-Lift Model PTS-HA hydraulic rack shall be provided on the right side body compartments for a portable water tank manufactured by Fol-Da-Tank or equivalent. The rack shall be properly sized to house a 3,000 gallon portable tank.</p> <p>The tank rack controls shall be located in such a manner to allow the operator full view of the area in which the portable tank shall be lowered.</p> <p>The actuator control shall have a master switch and also be interlocked to prevent operation should a compartment door, in the travel area of the rack, be in the open position.</p> <p>A smooth aluminum painted job color cover shall be installed on the lowering device to protect the Fol-Da-Tank. This cover shall be installed with a Zico PTS-TCH mounting kit to allow for flexing.</p> <p><u>RACK INTERLOCK AND NOT STOWED INDICATOR LIGHT</u></p> <p>An interlock shall be provided to prevent operation of the rack unless the apparatus parking brake has been activated.</p> <p>A steady red indicator light shall be located on the cab instrument panel and illuminated when the rack is not in the stowed position. The light shall be labeled "Rack". In addition, the "Do Not Move Apparatus" light located in the cab shall be activated when the rack is not in the stowed position.</p> <p><u>FLASHING LIGHTS ON RACK</u></p> <p>Flashing amber LED lights facing the front and rear shall be provided on the rack and activated whenever the rack is in the down position.</p> <p><u>RUB RAIL</u></p> <p>Bottom edge of the side compartments shall be trimmed with a bright aluminum extruded rub rail.</p>		

	Bidder Complies	
	Yes	No
<p>Trim shall be 2.12" high with 1.38" flanges turned outward for rigidity.</p> <p>The rub rails shall not be an integral part of the body construction, which allows replacement in the event of damage.</p> <p><u>BODY FENDER CROWNS</u></p> <p>Stainless steel fender crowns shall be provided around the rear wheel openings.</p> <p>A rubber welting shall be provided between the body and the crown to seal the seam and restrict moisture from entering.</p> <p><u>HARD SUCTION HOSE</u></p> <p>Three (3) lengths of 6.00" Kocheck Fire Grade clear corrugated hard suction hose, reinforced with a black spiral helix, 10' in length, shall be provided. The hose shall be equipped with a long handle female coupling on one (1) end and a rocker lug male coupling on the other end. Couplings shall be black anodized hard coated aluminum.</p> <p>There shall be one (1) aluminum painted job color trough(s) for hard suction hose(s) installed on the top of the Zico Portable Tank Rack(s) on the right side. The latch shall be hook and loop straps to secure the hard suction hose(s) to the trough(s).</p> <p><u>HARD SUCTION HOSE STORAGE</u></p> <p>One (1) fully enclosed hard suction hose compartment shall be provided on the left side between the water tank and side sheet area and capable of storing two (2) hard suction hoses.</p> <p>Two (2) aluminum troughs shall be provided one (1) above the other inside the compartment.</p> <p>One (1) smooth aluminum door with a D-handle latch hinged on the right side, shall be provided at the rear of the compartment.</p> <p><u>HANDRAILS</u></p> <p>The handrails shall be 1.25" diameter knurled aluminum to provide a positive gripping surface.</p> <p>Chrome plated end stanchions shall support the handrail. Plastic gaskets shall be used between end stanchions and any painted surfaces.</p> <p>Drain holes shall be provided in the bottom of all vertically mounted handrails.</p> <p>Handrails shall be provided to meet NFPA 1901 section 15.8 requirements. The handrails shall be installed as noted on the sales drawing.</p> <p><u>HANDRAILS</u></p> <p>One (1) vertical handrail shall be located on each rear beavertail.</p> <p>One (1) full width horizontal handrail shall be provided below the hose bed at the rear of the apparatus.</p>		

	Bidder Complies	
	Yes	No
<p><u>EXTENSION LADDER</u> There shall be a 28', two (2)-section, aluminum, Duo-Safety, Series 1200-A extension ladder provided.</p> <p><u>ROOF LADDER</u> There shall be one (1) 18' aluminum, Duo-Safety, Series 875-A roof ladder provided.</p> <p><u>LADDER STORAGE</u> Ladder storage shall be between the water tank and the right side compartments.</p> <p>This compartment shall not reduce the capacity of the water tank <i>unless</i> the addition of this compartment would cause the overall tank size to exceed the design space of the body configuration in which it is installed. In that case, the water tank capacity shall be maximized as much as practical but may be less than the capacity as stated elsewhere in this specification.</p> <p>A rack shall be provided for storage of one (1) 2-section ground ladder, one (1) roof ladder and one (1) folding ladder. The ground ladder and roof ladder shall be stored vertically in separate stainless steel storage troughs. An additional stainless steel trough shall be provided for storage of the folding ladder.</p> <p>The ladders shall be as completely enclosed by sheet metal as practical to prevent road dirt from entering the ladder storage area.</p> <p>Rear of ladder storage area shall have a smooth aluminum door to contain the ladders. This door shall be provided with a D-handle latch.</p> <p><u>FOLDING LADDER</u> One (1) 10.00' aluminum, Series 585-A, Duo-Safety folding ladder shall be installed.</p> <p><u>FOLDING LADDER STORAGE</u> There shall be storage designated right side for folding ladders stored between the side sheet in a stainless steel trough in the ladder storage compartment.</p> <p><u>8' PIKE POLE</u> There shall be one (1) Fire Hooks Unlimited, New York Hook, 8' long roof hook with steel shaft and chisel (pry) end provided ladder compartment.</p> <p><u>PIKE POLE STORAGE</u> There shall be storage designated right side for four (4) pike poles 8' or longer pike poles with a 1.38" notch, to accommodate a New York style pike pole stored in a tube between the side sheet and tank in the ground ladder storage compartment.</p> <p><u>6 FT PIKE POLE</u> There shall be one (1) Fire Hooks Unlimited NY roof hook RH-6, 6 foot pike pole(s) with steel handles and pry end provided ladder compartment.</p>		

	Bidder Complies	
	Yes	No
<p><u>REAR FOLDING STEPS</u> Bright finished, non-skid folding steps with a black tread coating on the stepping surface shall be provided at the rear. Each step shall incorporate an LED light to illuminate the stepping surface. The steps can be used as a hand hold with two openings wide enough for a gloved hand.</p> <p><u>ADDITIONAL STEP</u> An 8.00" deep, full width bright aluminum treadplate step shall be provided at the rear of the body.</p> <p><u>PUMP COMPARTMENT</u> The pump compartment shall be separate from the hose body and compartments so that each may flex independently of the other. It shall be a fabricated assembly of steel tubing, angles and channels which support both the fire pump and the side running boards.</p> <p>Compartment shall be mounted on chassis frame rails with rubber biscuits in a four point pattern to allow for chassis frame twist.</p> <p>Pump compartment, pump, plumbing and gauge panels must be removable from the chassis as a single assembly.</p> <p><u>PUMP MOUNTING</u> Pump shall be mounted to a substructure which shall be mounted to the chassis frame rail using rubber isolators. The mounting shall allow chassis frame rails to flex independently without damage to the fire pump.</p> <p><u>PUMP CONTROL PANELS (TOP MOUNT)</u> All pump controls and gauges to be properly marked and located above the pump to the rear of the walkway. Operator to face the rear of the truck when viewing the control panel from the operating position.</p> <p>The control panel shall be in two planes.</p> <p>The upper plane shall be hinged at the bottom with a full length stainless steel hinge.</p> <p>Both planes to be full width of the pump house structure.</p> <p>The side pump panels shall be 48.00" wide.</p> <p>The side pump panels shall be removable for ease of maintenance.</p> <p>Polished stainless steel trim collars to be installed around all inlets and outlets.</p> <p>Controls shall have chrome plated bezels encircling the opening securely mounted to the pump panel. Identification tags for the discharge controls shall be recessed within the same bezel. The discharge identification tags shall be color coded, with each discharge having its own unique color.</p> <p>All remaining identification tags shall be mounted on the pump panel in chrome plated bezels.</p>		

Bidder Complies	
Yes	No

WALKWAY

A 19.00" wide walkway shall be provided for access to the top control panel. The walkway shall be constructed of bright aluminum treadplate and properly reinforced.

There shall be six (6) six white LED lights provided to illuminate the walkway. The lights shall come on with the body perimeter lights.

WALKWAY TOOL COMPARTMENT

A tool compartment shall be provided on each side of the walkway. Each compartment shall have an aluminum treadplate door and shall be equipped with two (2) 9.00" LED strip lights, one (1) in each compartment.

PUMPHOUSE STRUCTURE

A special pumphouse structure is required to accommodate the ladders stored between the tank and the sidesheet. The right side vertical upright supports will need to be moved, one (1) inboard and one (1) outboard, to accommodate the ladder storage. The right side pump panel shall also be moved outboard 2.25" making the pump house structure 72.25" wide.

MIDSHIP FIRE PUMP

Midship fire pump shall be a Hale QMAX-XS-150, 1500 gpm single (1) stage midship mounted centrifugal type.

Pump shall be the class "A" type.

Pump shall deliver the percentage of rated discharges at the pressures indicated below:

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

Entire pump and both suction and discharge passages shall be hydrostatically tested to a pressure of 500 psi.

Pump shall be fully tested at the pump manufacturer's factory to the performance requirements as outlined by the current NFPA 1901 standards and shall be free from objectionable pulsation and vibration.

Pump body and related parts shall be of fine grain, alloy cast iron with a minimum tensile strength of 30,000 psi (2041.2 bar).

All moving parts in contact with water shall be of high quality bronze or stainless steel. Pumps utilizing castings made of lower tensile strength cast iron shall not be acceptable.

	Bidder Complies	
	Yes	No
<p>Pump body shall be horizontally split, on a single plane in two (2) sections, for easy removal of entire impeller assembly, including wear rings and bearings from beneath the pump, without disturbing pump piping or the mounting of the pump in the chassis.</p> <p>Pump shall have one (1) double suction impeller. The pump body shall have two (2) opposed discharge volute cutwaters to eliminate radial unbalance.</p> <p>Pump impeller shall be hard, fine grain bronze of the mixed flow design, accurately machined, hand-ground, and individually balanced. The vanes of the impeller intake eyes shall be hand-ground and polished to a sharp edge. They shall be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.</p> <p>Impeller clearance rings shall be bronze and easily renewable without replacing impeller or pump volute body. They shall be of the wrap-around double labyrinth design for maximum efficiency.</p> <p>Pump shaft shall be electric furnace heat-treated, corrosion resistant stainless steel. It shall be super-finished under packing with galvanic corrosion (zinc separators in packing) protection for longer shaft life. Pump shaft shall be sealed with double oil seal to keep road dirt and water out of drive unit.</p> <p>Pump shaft shall be rigidly supported by three (3) bearings for minimum deflection. A high lead bronze sleeve bearing shall be located immediately adjacent to the impeller (on the side opposite of the drive unit). The sleeve bearing shall be automatically oil lubricated and pressure balanced to exclude foreign material. The remaining bearings shall be heavy-duty, deep groove ball bearings in the gearbox and shall be splash lubricated.</p> <p><u>PUMP PACKING</u></p> <p>The pump shaft shall have one (1) packing gland located on inlet side of the pump and shall be of the split design for ease of repacking.</p> <p>The packing gland shall be a full-circle threaded design to exert uniform pressure on packing and prevent "cocking" and uneven packing load when it is tightened.</p> <p>The packing gland shall be easily adjusted by hand (with a rod or screwdriver, no special tools or wrenches required).</p> <p>The packing rings shall be of a unique, permanently lubricated, long-life graphite composition and have sacrificial zinc foil separators to protect the pump shaft from galvanic corrosion.</p> <p><u>PUMP TRANSMISSION</u></p> <p>The drive unit shall be cast and completely manufactured and tested at the pump manufacturer's factory. The pump drive unit shall be of sufficient size to withstand up to 16,000 foot/pound of torque from the engine in both road and pump operating conditions. The drive unit shall be designed with ample lubrication reserve to maintain the proper operating temperature.</p>		

	Bidder Complies	
	Yes	No
<p>The gearbox drive shafts shall be of heat treated chrome nickel steel and at least 2.75 inches in diameter, on both the input and output drive shafts. They shall be designed to withstand the full torque of the engine in both road and pump operating conditions. All gears, both drive and pump, shall be of the highest quality, electric furnace, chrome nickel steel. Bores shall be ground to size and teeth integrated, crown-shaved and hardened, to give an extremely accurate gear for long life, smooth, quiet running and higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrust.</p> <p>The pump ratio shall be selected by the apparatus manufacturer to provide the maximum performance with the engine and transmission selected. Three (3) green warning lights shall be provided to indicate to the operator(s) when the pump has completed the shift from Road to Pump position. Two (2) lights shall be located in the truck driving compartment and one (1) light on pump operator's panel, adjacent to the throttle control.</p> <p><u>PUMPING MODE</u></p> <p>An interlock system shall be provided to ensure that the pump drive system components are properly engaged so that the apparatus can be safely operated. The interlock system shall be designed to allow stationary pumping only.</p> <p><u>AIR PUMP SHIFT</u></p> <p>Pump shift engagement shall be made by a two (2) position sliding collar, actuated pneumatically (by air pressure), with a three (3) position air control switch located in the cab.</p> <p>Two (2) indicator lights shall be provided adjacent to the pump shift inside the cab. One (1) green light shall indicate the pump shift has been completed and be labeled "pump engaged". The second green light shall indicate when the pump has been engaged and the chassis transmission is in pump gear. This indicator light shall be labeled "OK to pump".</p> <p>The pump shift shall be interlocked to prevent the pump from being shifted out of gear when the chassis transmission is in gear to meet NFPA requirements.</p> <p>The pump shift control in the cab shall be illuminated to meet NFPA requirements.</p> <p><u>TRANSMISSION LOCK-UP</u></p> <p>The direct gear transmission lock-up for the fire pump operation shall engage automatically when the pump shift control in the cab is activated.</p> <p><u>AUXILIARY COOLING SYSTEM</u></p> <p>A supplementary heat exchange cooling system shall be provided to allow the use of water from the discharge side of the pump for cooling the engine water. Heat exchanger shall be a separate unit. It shall be installed in the pump or engine compartment with the control located on the pump operator's control panel. Exchanger shall be plumbed to the master drain valve.</p> <p><u>INTAKE RELIEF VALVE - PUMP</u></p> <p>There shall be One (1) Elkhart Style 40 relief valve(s) installed on the suction side of the pump preset at 125 psig.</p>		

	Bidder Complies	
	Yes	No
<p>The relief valve(s) shall have a working range of 75 psi to 250 psi.</p> <p>The outlet shall terminate below the frame rails with a 2.50" National Standard hose thread adapter and shall have a "do not cap" warning tag.</p> <p>The relief valve pressure control shall be located behind the right side pump panel with a stainless steel access door .</p> <p><u>PRESSURE CONTROLLER</u></p> <p>A Fire Research model PBA300 pressure governor shall be provided.</p> <p>A pressure transducer shall be installed in the water discharge manifold on the pump.</p> <p>The display panel shall be located at the pump operator's panel.</p> <p><u>PRIMING PUMP</u></p> <p>The priming pump shall be a Trident Emergency Products compressed air powered, high efficiency, multistage venturi based AirPrime System, conforming to standards outlined in NFPA pamphlet #1901.</p> <p>All wetted metallic parts of the priming system are to be of brass and stainless steel construction.</p> <p>One (1) priming control shall open the priming valve and start the pump primer.</p> <p>Three (3) additional priming valves shall be plumbed to the left and right side main inlet, front suction piping. The additional push button controls shall be located at the pump operator's panel.</p> <p><u>PUMP MANUALS</u></p> <p>There shall be a total of two (2) pump manuals provided by the pump manufacturer and furnished with the apparatus. The manuals shall be provided by the pump manufacturer in the form of two (2) electronic copies. Each manual shall cover pump operation, maintenance, and parts.</p> <p><u>PLUMBING, STAINLESS STEEL AND HOSE</u></p> <p>All inlet and outlet lines shall be plumbed with either stainless steel pipe, flexible polypropylene tubing or synthetic rubber hose reinforced with hi-tensile polyester braid. All hose's shall be equipped with brass or stainless steel couplings. All stainless steel hard plumbing shall be a minimum of a schedule 10 wall thickness.</p> <p>Where vibration or chassis flexing may damage or loosen piping or where a coupling is required for servicing, the piping shall be equipped with victaulic or rubber couplings.</p> <p>Plumbing manifold bodies shall be ductile cast iron or stainless steel.</p>		

	Bidder Complies	
	Yes	No
<p>All piping lines are to be drained through a master drain valve or shall be equipped with individual drain valves. All drain lines shall be extended with a hose to drain below the chassis frame.</p> <p>All water carrying gauge lines shall be of flexible polypropylene tubing.</p> <p>All piping, hose and fittings shall have a minimum of a 500 PSI hydrodynamic pressure rating.</p> <p><u>FOAM SYSTEM PLUMBING</u></p> <p>All piping that is in contact with the foam concentrate or foam/water solution shall be stainless steel. The fittings shall be stainless steel or brass. Cast iron pump manifolds will be allowed.</p> <p><u>MAIN PUMP INLETS</u></p> <p>A 6.00" pump manifold inlet shall be provided on each side of the vehicle. The suction inlets shall include removable die cast zinc screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.</p> <p><u>SHORT SUCTION TUBE(S)</u></p> <p>The suction tube(s) on the water pump shall have short suction tube(s) installed to allow for installation of adapters, elbows or intake valves without excessive overhang.</p> <p><u>INLET VALVE/DUMP</u></p> <p>One (1) butterfly valve type Hale MIV 2.0 shall be provided on the right side main pump inlet. The inlet valve shall be a combination butterfly valve and pressure relief valve with a Hale .75" bleeder valve. The pressure relief valve shall have a range of 75 to 250 PSI and shall be factory set to 150 psig . The valve, less relief valve, shall be rated for 600 PSI of hydrostatic pressure and 26 inHg of vacuum. The bleeder valve controls shall be located at the threaded connection and at the pump operator's panel.</p> <p>The valve shall be fully recessed behind the pump panel and shall be operated by an electric 12 VDC motor. A control panel with the electric switch and three (3) status indicator lights shall be provided on the pump operator's panel.</p> <p>A manual override handwheel shall be provided next to the inlet valve on the side pump panels.</p> <p><u>MAIN PUMP INLET CAP</u></p> <p>The main pump inlets shall have National Standard Threads with a long handle chrome cap.</p> <p>The cap shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>VALVES</u></p> <p>All ball valves shall be Akron® Brass in-line valves. The Akron valves shall be the 8000 series heavy-duty style with a stainless steel ball and a simple two-seat design. No lubrication or regular maintenance is required on the valve.</p> <p>Valves shall have a ten (10) year warranty.</p>		

	Bidder Complies	
	Yes	No
Inlet valve location shall be behind the pump panel.		
<u>INLET CONTROL</u>		
The side auxiliary inlet(s) shall incorporate a quarter-turn ball valve with the control located at the top mount control panel. The valve operating mechanism shall indicate the position of the valve.		
There shall be one (1) inlet.		
<u>RIGHT SIDE INLET</u>		
There shall be one (1) auxiliary inlet with a 2.50" valve at the right side pump panel, terminating with a 2.50" (F) National Standard hose thread adapter.		
The auxiliary inlet shall be provided with a strainer, chrome swivel and plug.		
<u>FRONT INLET</u>		
A 6.00" inlet front inlet that terminates on top of the right side bumper extension shall be provided.		
The plumbing shall consist of 5.00" stainless steel and a 5.00" Jamesbury butterfly valve. Only radius elbows shall be used in the piping, no mitered joints.		
Drains shall be furnished in all the low points of piping and have .75" valves with T swing handle.		
There shall be two (2) bleeder valves, one (1) located near the threaded connection and one (1) bleeder valve near the front inlet valve control.		
Die cast zinc screens shall be provided at the front inlet connection.		
<u>FRONT INLET CONTROL</u>		
The front inlet shall be gated with the control located at the pump operator's panel. The valve operating mechanism shall indicate the position of the valve or an indicator shall be provided to show when the valve is closed.		
There shall be an electric valve controller provided. The control shall be momentary to allow the valve to be gated for ease of operation. Indicator lights shall be provided to show if the valve is open or closed.		
<u>FRONT INLET INTAKE RELIEF VALVE</u>		
An Elkhart Brass Style 40 intake pressure relief valve shall be provided on the inlet side of the valve preset at 125 psig.		
The pressure relief valve shall be adjustable from 75 to 250 psi.		
The outlet shall be 2.50" National Standard hose thread and terminate below the frame rails and shall have a "do not cap" warning tag near the discharge outlet.		

	Bidder Complies	
	Yes	No
<p><u>FRONT INLET ELBOW</u></p> <p>The front inlet shall have a 6.00" inlet elbow with swivel, terminating with Male National Standard Hose Thread.</p> <p>The swivel shall be Chrome</p> <p>A quarter-turn style of bleeder bleeder shall be provided on the front inlet elbow.</p> <p><u>FRONT INLET CAP</u></p> <p>The front inlet shall have National Standard hose threads with a long handle cap.</p> <p>The cap shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p>The cap shall be fabricated from brass material.</p> <p><u>INLET BLEEDER VALVE</u></p> <p>A 0.75" bleeder valve shall be provided for each side gated inlet.</p> <p>The valves shall be located behind the panel with a "T" swing style handle control extended to the outside of the panel.</p> <p>The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage.</p> <p>The water discharged by the bleeders shall be routed below the chassis frame rails.</p> <p><u>TANK TO PUMP</u></p> <p>The booster tank shall be connected to the intake side of the pump, with heavy-duty piping and a quarter turn 3.00" full flow line valve, and with the control remotely located at the operator's panel. The tank to pump line shall run straight (no elbows) from the pump into the front face of the water tank and down into the tank sump. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing.</p> <p>A second tank to pump line shall be provided with heavy-duty piping and a quarter turn 3.00" full flow valve. The second tank to pump line control shall be located at the pump operator's panel. This tank to pump line shall come off an inlet manifold and into the tank face. The piping shall then curve down into a second sump in the water tank. The second sump shall be located to the rear of the water tank. A rubber coupling shall be installed within this line to prevent damage from vibration or chassis flexing.</p> <p>A check valve shall be provided in both tank to pump supply lines to prevent the possibility of "back filling" the water tank.</p>		

	Bidder Complies	
	Yes	No
<p><u>TANK REFILL</u> A 2.00" combination tank refill and pump re-circulation line shall be provided, using a quarter-turn full flow ball valve controlled from the pump operator's panel.</p> <p><u>DISCHARGE OUTLET CONTROLS</u> The discharge outlets shall incorporate a quarter-turn ball valve with the control located at the pump operator's panel. The valve operating mechanism shall indicate the position of the valve.</p> <p>If a handwheel control valve is used, the control shall be a minimum of a 3.9" diameter stainless steel handwheel with a dial position indicator built in to the center of the handwheel.</p> <p>Any 3.00 inch or larger discharge valve shall be a slow-operating valve in accordance with NFPA 16.7.5.3.</p> <p><u>LEFT SIDE DISCHARGE OUTLETS</u> There shall be Two (2) discharge outlets with a 2.50" valve on the left side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.</p> <p><u>LEFT SIDE OUTLET ELBOWS</u> The 2.50" discharge outlets located on the left side pump panel shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45 degree elbow.</p> <p>The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>RIGHT SIDE DISCHARGE OUTLETS</u> There shall be One (1) discharge outlet with a 2.50" valve on the right side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.</p> <p><u>RIGHT SIDE OUTLET ELBOWS</u> The 2.50" discharge outlets located on the right side pump panel shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45 degree elbow.</p> <p>The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>LARGE DIAMETER DISCHARGE OUTLET</u> There shall be a 4.00" discharge outlet with a 4.00" electric valve installed on the left side of the apparatus, terminating with 4.00" MNST threads.</p> <p>There shall be an Akron 9327 electric valve controller provided on the pump operators panel. The electric control must be of a true position feedback design, requiring no clutches in the motor or current limiting. The unit must be completely sealed with momentary open, close as well and an optional one touch full open feature to operate the valve actuator. The controller</p>		

	Bidder Complies	
	Yes	No
<p>shall provide position indication with 5 colored LED's. It shall have manual adjustment of the brightness as well as an auto dimming option.</p> <p><u>LARGE DIAMETER OUTLET ELBOWS</u> The 4.00" outlet shall be furnished with a 4.00" (F) National Standard hose thread x 4.00" Storz elbow adapter with Storz cap.</p> <p><u>FRONT DISCHARGE OUTLET</u> There shall be one (1) 1.50" discharge outlet piped to the front of the apparatus and located in the center bumper tray.</p> <p>Plumbing shall consist of 2.00" piping and flexible hose with a 2.00" ball valve with control at the pump operator's panel. A fabricated weldment made of stainless steel pipe shall be used in the plumbing where appropriate. The piping shall terminate with a 1.50" NST with 90 degree stainless steel swivel.</p> <p>There shall be automatic drains provided at all low points of the piping.</p> <p><u>REAR DISCHARGE OUTLET</u> There shall be One (1) discharge outlet piped to the rear of the hose bed, left side, installed so proper clearance is provided for spanner wrenches or adapters. Plumbing shall consist of 2.50" piping along with a 2.50" full flow ball valve with the control from the pump operator's panel.</p> <p><u>REAR OUTLET ELBOWS</u> The 2.50" discharge outlets located at the rear of the apparatus shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45 degree elbow.</p> <p>The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>DISCHARGE CAPS/ INLET PLUGS</u> Chrome plated, rocker lug, caps with chain shall be furnished for all discharge outlets 1.00" thru 3.00" in size, besides the pre-connected hose outlets.</p> <p>Chrome plated, rocker lug, plugs with chain shall be furnished for all auxiliary inlets 1.00" thru 3.00" in size.</p> <p>The caps and plugs shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>OUTLET BLEEDER VALVE</u> A 0.75" bleeder valve shall be provided for each outlet 1.50" or larger. Automatic drain valves are acceptable with some outlets if deemed appropriate with the application.</p> <p>The valves shall be located behind the panel with a T swing style handle control extended to the outside of the side pump panel.</p>		

	Bidder Complies	
	Yes	No
<p>The handles shall be chrome plated and provide a visual indication of valve position.</p> <p>The T swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage.</p> <p>Bleeders shall be located at the bottom of the pump panel. They shall be properly labeled identifying the discharge they are plumbed in to.</p> <p>The water discharged by the bleeders shall be routed below the chassis frame rails.</p> <p><u>DELUGE RISER</u></p> <p>A 3.00" deluge riser shall be installed above the pump in such a manner that a monitor can be mounted and used effectively. Piping shall be installed securely so no movement develops when the line is charged. The riser shall be gated and controlled at the pump operator's panel. The outlet shall include an Elkhart Unibody valve with a handwheel control.</p> <p><u>MONITOR</u></p> <p>An Elkhart Model 8297 "Stinger" monitor shall be properly installed on the deluge riser.</p> <p>This monitor shall include both a fixed base and a portable base with a 4.00" Storz inlet.</p> <p>The monitor shall be painted as provided by monitor manufacturer.</p> <p><u>MONITOR NOZZLE</u></p> <p>An Elkhart #ST-194 Elk-o-Lite quad stacked deluge tips shall be provided with a 282 A Elkhart stream shaper.</p> <p>Tip sizes shall be 1.375", 1.50", 1.75" and 2.0"</p> <p><u>MONITOR MOUNTING BASE</u></p> <p>An Elkhart Model 8298 deck mount base for an Elkhart "Stinger" monitor shall be properly installed on the deluge riser via the 3.00" four bolt flange. The base shall NOT BE PAINTED per the manufacturers recommendations.</p> <p><u>CROSSLAY HOSE BEDS</u></p> <p>One (1) crosslay with 2.50" outlets shall be provided. Each bed to be capable of carrying 250' of DJ fire hose and shall be plumbed with 2.50" i.d. pipe and gated with a 2.50" quarter turn ball valve.</p> <p>Outlets to be equipped with a 2.50" National Standard hose thread 90 degree swivel located in the hose bed so that hose may be removed from either side of apparatus.</p> <p>The crosslay controls shall be at the pump operator's panel.</p> <p>The center crosslay dividers shall be fabricated of .25" aluminum and shall provide adjustment from side to side. The divider shall be unpainted with a brushed finish. The remainder of the crosslay bed shall be painted job color.</p>		

	Bidder Complies	
	Yes	No
<p>Stainless steel vertical scuffplates shall be provided at hose bed ends (each side of vehicle). Bottom of hose bed ends (each side) shall also be equipped with a stainless steel scuffplate.</p> <p>Crosslay bed flooring shall consist of removable perforated brushed aluminum.</p> <p><u>CROSSLAY/DEADLAY HOSE RESTRAINT</u></p> <p>A black 1.00" nylon webbing design with 2.00" box pattern shall be provided across each end of one (1) crosslay/deadlay(s) to secure the hose during travel. The webbing shall be permanently attached at the back of the crosslay/deadlay opening(s). 1.00" web straps shall loop through footman loops located at the opposite end of the permanently attached webbing. The straps shall attach with a pair of 1.00" cam buckle fasteners.</p> <p><u>SPEEDLAYS WITH TRAY</u></p> <p>Ahead of the pump enclosure, shall be two (2) 1.75" speedlay hose beds. Each bed shall have a 2.00" preconnect line with a 2.00" quarter-turn ball valve and terminate with a 1.50" National Standard hose thread 90-degree swivel. The swivel shall be located at the top of the speedlay compartment to allow easy removal of the hose in either direction.</p> <p>Individual controls for the speedlays shall be at the pump operator's panel.</p> <p>Each compartment shall be capable of carrying 250' of DJ fire hose double-jacketed hose with the one (1) compartment located above the other.</p> <p>A removable tray shall be provided for each speedlay hosebed. The speedlay trays shall be constructed of black poly to provide a lightweight sturdy tray. Two (2) hand holes shall be in the floor and additional hand holes shall be provided in the sides for easy removal and installation from the compartment. The floor of the trays shall be perforated to allow for drainage and hose drying. The bottom of the speedlay compartments shall be lined with stainless steel to allow the tray to slide with ease. Scuffplates shall be provided on both sides, at the sides and bottom of each opening to protect the paint.</p> <p><u>SPEEDLAY HOSE RESTRAINT</u></p> <p>A 2.00" black nylon webbing design restraint shall be provided across the ends of speedlay(s) to secure the hose during travel. The webbing assembly is to be attached at the bottom of the speedlay(s) with footman loops as a permanent attachment and is attached at the top with 2.00" cam buckle fastener(s).</p> <p><u>BOOSTER HOSE REEL</u></p> <p>A Hannay electric rewind booster hose reel shall be installed over the pump in a recessed open compartment on the right side of the apparatus. Reel to be fabricated of aluminum and have highly polished end discs.</p> <p>A polished stainless steel roller and guide assembly shall be mounted on the reel side of the apparatus.</p>		

	Bidder Complies	
	Yes	No
<p>Discharge control shall be provided at the pump operator's panel. Plumbing to the reel shall consist of 1.50" Aeroquip hose and a 1.50" valve.</p> <p>Reel motor shall be protected from overload with a circuit breaker rated to match the motor.</p> <p>An electric rewind control switch shall be installed on the reel side pump panel.</p> <p>Booster hose, 1.00" diameter and 150 feet, with chrome plated Barway, or equal couplings shall be provided.</p> <p>Working pressure of the booster hose shall be a minimum of 800 psi.</p> <p>Capacity of the hose reel shall be 200 feet of 1.00" booster hose.</p> <p>An Elkhart, model S-200, booster hose nozzle shall be provided.</p> <p><u>FOAM SYSTEM</u></p> <p>There shall be a Hypro/Foam Pro, Model 1600, direct injection foam proportioning system furnished and installed on the apparatus.</p> <p>The system shall be a single agent system suitable for handling Class "A" foam concentrate only.</p> <p>The foam system shall be plumbed to one (1) discharge. The discharges capable of dispensing foam shall be front bumper line.</p> <p>The proportioning operation shall be based on an accurate direct measurement of water flows with no water flow restriction. The foam system shall be installed in accordance with the manufacturer recommendations.</p> <p>The system shall be equipped with a control module. It shall be installed on the pump operator's panel and enable the pump operator to perform the following functions:</p> <p>Activate the foam system.</p> <p>Change foam concentrate proportioning rates from .1 percent to 1 percent.</p> <p>Flash a low concentrate warning light when the foam concentrate tank runs low of concentrate and in two (2) minutes if foam concentrate is not added to tank shut the foam pump down.</p> <p>The foam system shall have a 12volt, 1/3 hp electric motor driven positive displacement piston type foam concentrate pump with a rated capacity of 1.7 gpm @ 200 psi with a maximum operating pressure of 400 psi.</p> <p>A full flow check valve shall be provided in the discharge piping to prevent foam contamination of the fire pump and water tank.</p> <p>A 5 psi opening pressure check valve shall be installed in the concentrate line.</p>		

	Bidder Complies	
	Yes	No
<p>The number of discharges supplied with foam shall be one (1) discharge. The discharges shall be front bumper line.</p> <p><u>IN-LINE FOAM EDUCTOR</u> one (1) Akron, 95 gpm, model 3095 in-line foam eductor(s), shall be supplied. The eductor(s) shall include a 30.00" length of clear pvc pick-up hose and an integral metering valve with a percentage range from 0-6%.</p> <p><u>FOAM TANK</u> The foam tank shall be an integral portion of the polypropylene water tank. The cell shall have a capacity of 20 gallons of foam with the intended use of Class A foam. The foam cell shall not reduce the capacity of the water tank. The foam cell shall have a screen in the fill dome and a breather in the lid.</p> <p><u>FOAM TANK DRAIN</u> The foam tank drain shall be a 1.00" drain valve located inside the pump compartment accessible through a door on the right side pump panel. The drain shall consist of stainless steel plumbing and extend below the frame rails.</p> <p><u>PUMP PANEL CONFIGURATION</u> The pump panel configuration shall be neat and orderly.</p> <p><u>PUMP AND GAUGE PANEL</u> The side control panels shall be constructed of aluminum with a black vinyl finish. A polished aluminum trim molding shall be provided around each panel.</p> <p>The gauge and top mount control panels shall be constructed of aluminum with a black vinyl finish. A polished aluminum trim molding shall be provided around each panel.</p> <p>The gauge panel shall be hinged at the bottom with a full length stainless steel hinge. The fasteners that hold the panel in the up right position shall be quarter-turn style. Vinyl covered chains shall be used to hold the panel in the dropped position.</p> <p><u>PUMP ACCESS</u></p> <p><u>Left Side Panel</u> The right side upper pump panel shall be removable.</p> <p><u>Right Side Panel</u> The left side upper pump panel shall be removable.</p> <p><u>Panel Fastener</u> The removable panels shall be secured using a black lift and turn latch.</p> <p>The lower left side panel (drain bank) shall be attached with screws.</p> <p>The lower right side panel (drain bank) shall be attached with screws.</p>		

	Bidder Complies	
	Yes	No
<p><u>Front Pump House Access</u> The front of the pump house structure shall have provisions for access to the pump.</p> <p><u>PUMP COMPARTMENT LIGHT</u> There shall be one (1) Whelen®, Model 3SC0CDCR, 3.00" white 12 volt DC LED light(s) with Whelen, Model 3FLANGEC, flange(s) installed in the pump compartment.</p> <p>There shall be a switch accessible through a door on the pump panel included with this installation.</p> <p>Engine monitoring graduated LED indicators shall be incorporated with the pressure controller.</p> <p>Also provided at the pump panel shall be the following:</p> <ul style="list-style-type: none"> - Master Pump Drain Control <p><u>THROTTLE READY GREEN INDICATOR LIGHT</u> There shall be a green indicator light integrated with the pressure governor and/or engine throttle installed on the pump operators panel that is activated when the pump is in throttle ready mode.</p> <p><u>OK TO PUMP INDICATOR LIGHT</u> There shall be a green indicator light installed on the pump operators panel that is activated when the pump is in Ok To Pump mode.</p> <p><u>MANSAVER SAFETY RAIL</u> A Fire Research Mansaver safety rail assembly shall be provided across each entrance to the walkway.</p> <p>The safety rails shall be covered with a bright yellow vinyl.</p> <p><u>VACUUM AND PRESSURE GAUGES</u> The pump vacuum and pressure gauges shall be liquid filled and manufactured by Class 1 Incorporated ©.</p> <p>The gauges shall be a minimum of 4.00" in diameter and shall have white faces with black lettering, with a pressure range of 30.00"-0-600#.</p> <p>Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.</p> <p>The pump pressure and vacuum gauges shall be installed adjacent to each other at the pump operator's control panel.</p> <p>Test port connections shall be provided at the pump operator's panel. One (1) shall be connected to the intake side of the pump, and the other to the discharge manifold of the pump. They shall have 0.25 in. standard pipe thread connections and non-corrosive polished stainless steel or brass plugs. They shall be marked with a label.</p>		

	Bidder Complies	
	Yes	No
<p>This gauge shall include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.</p> <p><u>PRESSURE GAUGES</u></p> <p>The individual "line" pressure gauges for the discharges shall be interlube filled and manufactured by Class 1©.</p> <p>They shall be a minimum of 2.00" in diameter and shall have white faces with black lettering.</p> <p>Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.</p> <p>Gauges shall have a pressure range of 30"-0-400#.</p> <p>The individual pressure gauge shall be installed as close to the outlet control as practical.</p> <p>This gauge shall include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.</p> <p><u>WATER LEVEL GAUGE</u></p> <p>There shall be an electronic water level gauge provided on the operator's panel that registers water level by means of five (5) colored LED lights. The lights shall be durable, ultra-bright five (5) LED design viewable through 180 degrees. The water level indicators shall be as follows:</p> <ul style="list-style-type: none"> • 100 percent = Green • 75 percent = Yellow • 50 percent = Yellow • 25 percent = Yellow • Refill = Red <p>The light shall flash when the level drops below the given level indicator to provide an eighth of a tank indication. To further alert the pump operator, the lights shall flash sequentially when the water tank is empty.</p> <p>The level measurement shall be based on the sensing of head pressure of the fluid in the tank.</p> <p>The display shall be constructed of a solid plastic material with a chrome plated die cast bezel to reduce vibrations that can cause broken wires and loose electronic components. The encapsulated design shall provide complete protection from water and environmental elements. An industrial pressure transducer shall be mounted to the outside of the tank. The field calibratable display measures head pressure to accurately show the tank level.</p> <p>There shall be a Hale part number 106877, 4-light driver module included with this installation to power additional water level gauges.</p> <p>The system(s) shall be energized when when either the pump is in gear, or the parking brake is applied.</p>		

Bidder Complies	
Yes	No

WATER LEVEL GAUGE

There shall be three (3) additional water level indicator(s), Whelen®, Model PSTANK2, LED module with chrome trim, installed one (1) each side rearward of crew cab doors and one (1) on rear body bulkhead.

This light module(s) shall include four (4) colored levels, and function similar to the water level indicator located at the operators panel:

- First green module indicates a full water level
- Second blue module indicates a water level above 3/4 full
- Third amber module indicates a water level above 1/2 full
- Last red module indicates a water level above 1/4 full and empty
 - Above 1/4 this light shall be steady burning
 - At empty this light shall be flashing

The flash rate shall be determined by the main water level tank sensor.

This module shall be activated when the when either the pump is in gear, or the parking brake is applied.

FOAM LEVEL GAUGE

An electronic foam level gauge shall be provided on the operator's panel that registers foam level by means of five (5) colored LED lights. The lights shall be durable, ultra-bright five (5) LED design viewable through 180 degrees. The foam level indicators shall be as follows:

- 100 percent = Green
- 75 percent = Yellow
- 50 percent = Yellow
- 25 percent = Yellow
- Refill = Red

The light shall flash when the level drops below the given level indicator to provide an eighth of a tank indication. To further alert the pump operator, the lights shall flash sequentially when the foam tank is empty.

The level measurement shall be based on the sensing of head pressure of the fluid in the tank.

The display shall be constructed of a solid plastic material with a chrome plated die cast bezel to reduce vibrations that can cause broken wires and loose electronic components. The encapsulated design shall provide complete protection from foam and environmental elements. An industrial pressure transducer shall be mounted to the outside of the tank. The display shall be able to be calibrated in the field and shall measure head pressure to accurately show the tank level.

	Bidder Complies	
	Yes	No
<p><u>LIGHT SHIELDS</u></p> <p>Illumination shall be provided by LED strip lights at the pump control panel for controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus and the equipment provided on it.</p> <p>Lights shall be installed under a stainless steel shield.</p> <p>A light shall come on above the pump panel light switch when the parking brake is applied. This is to afford the operator some illumination when first approaching the control panel.</p> <p>The remaining lights to be actuated from a switch located on the pump panel.</p> <p><u>AIR HORN SYSTEM</u></p> <p>There shall be two (2) Grover air horns recessed in the front bumper. The horn system shall be piped to the air brake system wet tank utilizing 0.38" tubing. A pressure protection valve shall be installed in-line to prevent loss of air in the air brake system.</p> <p><u>Air Horn Location</u></p> <p>The air horns shall be located on each side of the bumper, just outside of the frame rails.</p> <p><u>Air Horn Control</u></p> <p>The air horns shall be actuated by a chrome push button located on the officer's side of the engine tunnel and by the horn button in the steering wheel. The driver shall have the option to control the air horns or the chassis horns from the horn button by means of a selector switch located on the instrument panel.</p> <p><u>ELECTRONIC SIREN</u></p> <p>A Whelen®, Model 295SLSA1, electronic siren with noise canceling microphone shall be provided.</p> <p>This siren to be active when the battery switch is on and that emergency master switch is on.</p> <p>Electronic siren head shall be recessed in the driver side center switch panel.</p> <p>The electronic siren shall be controlled on the siren head only. No horn button or foot switches shall be required.</p> <p><u>SPEAKER</u></p> <p>There shall be one (1) Whelen®, Model SA315P, black nylon composite, 100-watt, speaker with through bumper mounting brackets and polished stainless steel grille provided. The speaker shall be connected to the siren amplifier.</p> <p>The speaker(s) shall be recessed in the center of the front bumper.</p> <p><u>AUXILIARY MECHANICAL SIREN</u></p> <p>There shall be a Federal Signal Model Q2B mechanical siren furnished and installed in the front of the apparatus.</p>		

	Bidder Complies	
	Yes	No
<p>The Q2B shall be chrome finish.</p> <p>The siren shall have a 2-gauge cable connected to a power solenoid that is connected by a 2-gauge cable ran battery direct to the primary chassis batteries and shall be labeled Q2B+ at the battery. The power solenoid shall only be enabled when the emergency master switch is on.</p> <p>The siren shall have a 2-gauge ground wire connected to the chassis battery stud. The cable shall be labeled Q2B- at the battery.</p> <p>When the chassis battery switch is on, and the emergency master switch is on, the Q2B siren shall be activated by the following:</p> <p>The mechanical siren shall be mounted on the bumper deck plate. It shall be mounted on the left side. The siren mounting shall include a reinforcement plate.</p> <p><u>MECHANICAL SIREN CONTROL</u></p> <p>The mechanical siren shall be activated by the following:</p> <ul style="list-style-type: none"> • Left side foot switch. <p>A momentary chrome push button switch shall be included in the right side dash panel to activate the siren brake.</p> <p><u>WEDGE STYLE FOOT SWITCH BRACKET</u></p> <p>There shall be one (1) wedge style bracket provided at the DS floor side on cab the floor. The bracket shall be large enough to hold one (1) foot switch. The bracket shall be angled approximately 30 degrees.</p> <p><u>BRACKET, FOOT SWITCHES</u></p> <p>A wedge style bracket shall be provided on the officer's side of cab floor. The bracket shall be large enough to hold two (2) foot switches.</p> <p><u>FRONT ZONE UPPER WARNING LIGHTS</u></p> <p>There shall be a 72.00" Whelen® Freedom™ IV lightbar mounted on the cab roof.</p> <p>The lightbar shall include the following:</p> <ul style="list-style-type: none"> • One (1) amber flashing LED module in the left side rear corner position. • One (1) red flashing LED module in the left side end position. • One (1) red flashing LED module in the left side front corner position. • One (1) red flashing LED module in the left side first front position. • One (1) red flashing LED module in the left side second front position. • One (1) blue flashing LED module in the left side third front position. • One (1) red flashing LED module in the left side fourth front position. 		

Bidder Complies	
Yes	No

- One (1) white flashing LED module in the left side fifth front position.
- Open in the left side sixth front position.
- Open in the right side sixth front position.
- One (1) white flashing LED module in the right side fifth front position.
- One (1) red flashing LED module in the right side fourth front position.
- One (1) blue flashing LED module in the right side third front position.
- One (1) red flashing LED module in the right side second front position.
- One (1) red flashing LED module in the right side first front position.
- One (1) red flashing LED module in the right side front corner position.
- One (1) red flashing LED module in the right side end position.
- One (1) amber flashing LED module in the right side rear corner position.

There shall be a switch in the cab on the switch panel to control the lightbar.

The white flashing LEDs shall be deactivated when the parking brake is applied.

The six (6) red and two (2) blue flashing LED modules in the front positions and the two (2) amber flashing LED modules in the rear corner positions may be load managed when the parking brake is applied.

LIGHTBAR MOUNTING BRACKETS

There shall be a pair of lightbar mounting brackets that shall move the lightbar forward of the normal position on the cab roof, to avoid the light tower. These brackets shall be made of 12 gauge steel, and painted black.

FRONT ZONE LOWER LIGHTS

There shall be two (2) pair of Whelen, Model M6**, LED lights installed on the cab face above the headlights, in a common bezel matching the one for the headlamps. The housing to be polished and the trim shall be chrome.

- The driver's side front outside warning light to be red
- The driver's side front inside warning light to be blue
- The passenger's side front inside warning light to be red
- The passenger's side front outside warning light to be blue
- The color of the lenses shall be clear

There shall be a switch located in the cab on the switch panel to control the lights.

FRONT WARNING LIGHT

One (1) Whelen 4500 series, FFX4520, 20.00" LED lightbar shall be provided on the front of the cab, centered beneath the cab windshield, on the lift up service hood.

This lightbar shall include the following:

- Two (2) red 400 LINEAR12, LED modules facing forward, one (1) each side.

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • One (1) white 400 LINEAR12, LED module facing forward, in the center. • Two (2) red LINZ6, LED angled corner warning light, one (1) on each end. <p>These lights shall be activated with the front warning switch.</p> <p>The flash pattern shall be controlled by two (2) external Whelen ULF28, solid state flashers. The driver side and the passenger side red forward facing LED shall alternate with the driver side and passenger side red corner LED and the white center LED.</p> <p>The lens colors shall be all clear.</p> <p>The colored warning lights may be load managed and the white lights shall be disabled when the parking brake is applied.</p> <p><u>HEADLIGHT FLASHER</u></p> <p>The high beam headlights shall flash alternately between the left and right side.</p> <p>There shall be a switch installed in the cab on the switch panel to control the high beam flash. This switch shall be live when the battery switch and the emergency master switches are on.</p> <p>The flashing shall automatically cancel when the hi-beam headlight switch is activated or when the parking brake is set.</p> <p><u>SIDE ZONE LOWER LIGHTING</u></p> <p>There shall be six (6) Whelen®, Model M6*C, flashing LED warning lights with chrome trim installed per the following:</p> <ul style="list-style-type: none"> • Two (2) lights, one (1) each side on the bumper extension. The side front lights to be red. • Two (2) lights, one (1) each side of pump house, below speedlays. The side middle lights to be red. • Two (2) lights, one (1) each side located between the tandems. The side rear lights to be blue. • The lights shall include clear lenses. <p>There shall be a switch in the cab on the switch panel to control the lights.</p> <p><u>SIDE WARNING LIGHTS</u></p> <p>There shall be two (2) Whelen®, Model M9**, 6.50" high x 10.37" wide x 1.37" deep flashing LED warning light(s) with chrome trim provided, and mounted on the LS and RS front corners of the body.</p> <p>The light(s) to include red LEDs. The warning light lens color(s) to be clear.</p> <p>These lights shall be activated with the side warning switch.</p> <p>White LEDs shall be deactivated when the parking brake is applied.</p>		

	Bidder Complies	
	Yes	No
<p>Amber, blue, green or red LEDs may be load managed when the parking brake is applied.</p> <p><u>REAR ZONE LOWER LIGHTING</u></p> <p>There shall be two (2) Whelen®, Model M6*C, LED flashing warning lights located at the rear of the apparatus.</p> <ul style="list-style-type: none"> • The driver's side rear light to be red • The passenger's side rear light to be red <p>Both lights shall include a lens that is clear.</p> <p>There shall be a switch located in the cab on the switch panel to control the lights.</p> <p><u>WARNING LIGHTS (REAR AND SIDE UPPER ZONES)</u></p> <p>Four (4) Whelen, model M9*C LED flashing warning lights shall be provided at the rear of the apparatus.</p> <p>The side rear upper light(s) on the driver's side to be red.</p> <p>The rear upper light(s) on the driver's side to be red.</p> <p>The rear upper light(s) on the passenger's side to be red.</p> <p>The side rear upper light(s) on the passenger's side to be red.</p> <p>These lights shall include a lens that is clear.</p> <p>There shall be a switch located in the cab on the switch panel to control the lights.</p> <p>The rear warning lights shall be mounted on stainless steel brackets with all wiring totally enclosed. These brackets shall also support the rear deck lights and clearance/marker lights.</p> <p><u>TRAFFIC DIRECTING LIGHT</u></p> <p>There shall be one (1) Whelen®, Model TAL65, 36.00" long x 2.87" high x 2.25" deep, amber LED traffic directing light installed at the rear of the apparatus.</p> <p>The Whelen, Model TACTL5, control head shall be included with this installation.</p> <p>The controller shall be energized when the battery switch is on.</p> <p>The auxiliary flash not activated.</p> <p>This traffic directing light shall be recessed with a stainless steel trim plate at the rear of the apparatus as high as practical.</p> <p>The traffic directing light control head shall be located in the driver side overhead switch panel in the right panel position.</p>		

	Bidder Complies	
	Yes	No
<p><u>LIGHT TOWER</u></p> <p>There shall be one (1) Will-Burt, Model NS2.3-225 WHL light tower provided.</p> <p>There shall be three (3) Whelen Model P*H1, 8,875 lumens 12 volt DC light heads with flood optics included on this tower.</p> <p>The painted parts of the light tower and the light heads to be white.</p> <p>This tower shall be connected to the Do Not Move Truck Indicator in the cab.</p> <p>The lights included with this tower may be load managed when the parking brake is applied.</p> <p><u>Light Tower Location</u></p> <p>The light tower shall be installed on the cab roof.</p> <p><u>Light Tower Controller</u></p> <p>There shall be one (1) handheld wired controller included.</p> <p><u>Light Tower Controller Location</u></p> <p>The light tower controller shall be installed in the driver's side front body compartment.</p> <p><u>TOWER STROBE LIGHT</u></p> <p>A self contained LED strobe light with green lens shall be provided on the top of the light tower.</p> <p>This light shall be controlled by a switch located on the tower control panel.</p> <p><u>LIGHT MAST ALARM</u></p> <p>When the light mast is in the up position and the parking brake is released, the truck horn shall be activated as an alarm.</p> <p><u>LOOSE EQUIPMENT</u></p> <p>The following equipment shall be furnished with the completed unit:</p> <ul style="list-style-type: none"> • One (1) bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit <p><u>PORTABLE FOLDING TANK</u></p> <p>A quantity of one (1) Fol-Da-Tank(s), model FDTA-3000, with 22oz yellow HPR® (High Performance Rubber) liner shall be provided.</p> <p>The collapsed dimensions shall be 13' 3.00" long x 8.00" wide x 29.00" deep.</p> <p>The expanded size shall be 13' 3.00" long x 13' 3.00" wide x 29.00" deep.</p> <p><u>NFPA REQUIRED LOOSE EQUIPMENT PROVIDED BY FIRE DEPARTMENT</u></p> <p>The following loose equipment as outlined in NFPA 1901, 2016 edition, section 5.9.3 and 5.9.4 shall be provided by the fire department.</p>		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • 800 ft (60 m) of 2.50" (65 mm) or larger fire hose. • 400 ft (120 m) of 1.50" (38 mm), 1.75" (45 mm), or 2.00" (52 mm) fire hose. • One (1) handline nozzle, 200 gpm (750 L/min) minimum. • Two (2) handline nozzles, 95 gpm (360 L/min) minimum. • One (1) smoothbore or combination nozzle with 2.50" shutoff that flows a minimum of 250 gpm. • One (1) SCBA complying with NFPA 1981 for each assigned seating position, but not fewer than four (4), mounted in brackets fastened to the apparatus or stored in containers supplied by the SCBA manufacturer. • One (1) spare SCBA cylinder for each SCBA carried, each mounted in a bracket fastened to the apparatus or stored in a specially designed storage space(s). • One (1) first aid kit. • Four (4) combination spanner wrenches. • Two (2) hydrant wrenches. • One (1) double female 2.50" (65 mm) adapter with National Hose threads. • One (1) double male 2.50" (65 mm) adapter with National Hose threads. • One (1) rubber mallet, for use on suction hose connections. • Two (2) salvage covers each a minimum size of 12 ft x 14 ft (3.7 m x 4.3 m). • One (1) traffic vest for each seating position, each vest to comply with ANSI/ISEA 207, <i>Standard for High Visibility Public Safety Vests</i>, and have a five-point breakaway feature that includes two (2) at the shoulders, two (2) at the sides, and one (1) at the front. • Five (5) fluorescent orange traffic cones not less than 28.00" (711 mm) in height, each equipped with a 6.00" (152 mm) retro-reflective white band no more than 4.00" (152 mm) from the top of the cone, and an additional 4.00" (102 mm) retro-reflective white band 2.00" (51 mm) below the 6.00" (152 mm) band. • Five (5) illuminated warning devices such as highway flares, unless the five (5) fluorescent orange traffic cones have illuminating capabilities. • One (1) automatic external defibrillator (AED). • Four (4) ladder belts meeting the requirements of NFPA 1983, <i>Standard on Fire Service Life Safety Rope and System Components</i> (if equipped with an aerial device). • If the supply hose carried does not use sexless couplings, an additional double female adapter and double male adapter, sized to fit the supply hose carried, shall be carried mounted in brackets fastened to the apparatus. • If none of the pump intakes are valved, a hose appliance that is equipped with one or more gated intakes with female swivel connection(s) compatible with the supply hose used on one side and a swivel connection with pump intake threads on the other side shall be carried. Any intake connection larger than 3.00" (75 mm) shall include a pressure relief device that meets the requirements of 16.6.6. • If the apparatus does not have a 2.50" National Hose (NH) intake, an adapter from 2.50" NH female to a pump intake shall be carried, mounted in a bracket fastened to the apparatus if not already mounted directly to the intake. 		

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> If the supply hose carried has other than 2.50" National Hose (NH) threads, adapters shall be carried to allow feeding the supply hose from a 2.50" NH thread male discharge and to allow the hose to connect to a 2.50" NH female intake, mounted in brackets fastened to the apparatus if not already mounted directly to the discharge or intake. <p><u>SOFT SUCTION HOSE</u> There shall be no soft suction hose provided.</p> <p>- One (1)-6.00" National Standard hose thread barrel strainer, chrome plated</p> <p><u>DRY CHEMICAL EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, section 5.9.4 requires one (1) approved dry chemical portable fire extinguisher with a minimum 80-B:C rating mounted in a bracket fastened to the apparatus.</p> <p>The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.</p> <p><u>WATER EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, section 5.9.4 requires one (1) 2.5 gallon or larger water extinguisher mounted in a bracket fastened to the apparatus.</p> <p>The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.</p> <p><u>FLATHEAD AXE PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2016 edition, Section 5.9.4 requires one (1) flathead axe mounted in a bracket fastened to the apparatus.</p> <p>The axe is not on the apparatus as manufactured. The fire department shall provide and mount the axe.</p> <p><u>PAINT</u> The exterior custom cab and body painting procedure shall consist of a seven (7) step finishing process as follows:</p> <ol style="list-style-type: none"> <u>Manual Surface Preparation</u> - All exposed metal surfaces on the custom cab and body shall be thoroughly cleaned and prepared for painting. Imperfections on the exterior surfaces shall be removed and sanded to a smooth finish. Exterior seams shall be sealed before painting. Exterior surfaces that shall not be painted include; chrome plating, polished stainless steel, anodized aluminum and bright aluminum treadplate. <u>Chemical Cleaning and Pretreatment</u> - All surfaces shall be chemically cleaned to remove dirt, oil, grease, and metal oxides to ensure the subsequent coatings bond well. The aluminum surfaces shall be properly cleaned and treated using a high pressure, high temperature 4 step Acid Etch process. The steel and stainless surfaces shall be properly cleaned and treated using a high temperature 3 step process specifically 		

	Bidder Complies	
	Yes	No
<p>designed for steel or stainless. The chemical treatment converts the metal surface to a passive condition to help prevent corrosion.</p> <ol style="list-style-type: none"> 3. <u>Surfacer Primer</u> - The Surfacer Primer shall be applied to a chemically treated metal surface to provide a strong corrosion protective basecoat. A minimum thickness of 2 mils of Surfacer Primer is applied to surfaces that require a Critical aesthetic finish. The Surfacer Primer is a two-component high solids urethane that has excellent sanding properties and an extra smooth finish when sanded. 4. <u>Finish Sanding</u> - The Surfacer Primer shall be sanded with a fine grit abrasive to achieve an ultra-smooth finish. This sanding process is critical to produce the smooth mirror like finish in the topcoat. 5. <u>Sealer Primer</u> - The Sealer Primer is applied prior to the Basecoat in all areas that have not been previously primed with the Surfacer Primer. The Sealer Primer is a two-component high solids urethane that goes on smooth and provides excellent gloss hold out when topcoated. 6. <u>Basecoat Paint</u> - Two coats of a high performance, two component high solids polyurethane basecoat shall be applied. The Basecoat shall be applied to a thickness that shall achieve the proper color match. The Basecoat shall be used in conjunction with a urethane clear coat to provide protection from the environment. 7. <u>Clear Coat</u> - Two (2) coats of Clear Coat shall be applied over the Basecoat color. The Clear Coat is a two-component high solids urethane that provides superior gloss and durability to the exterior surfaces. Lap style and roll-up doors shall be Clear Coated to match the body. Paint warranty for the roll-up doors shall be provided by the roll-up door manufacturer. <p>After the cab and body are painted, the color shall be verified to make sure that it matches the color standard. Electronic color measuring equipment shall be used to compare the color sample to the color standard entered into the computer. Color specifications shall be used to determine the color match. A Delta E reading shall be used to determine a good color match within each family color.</p> <p>All removable items such as brackets, compartment doors, door hinges, and trim shall be removed and painted separately if required, to ensure paint behind all mounted items. Body assemblies that cannot be finish painted after assembly shall be finish painted before assembly.</p> <p>The paint finish quality levels for critical areas of the apparatus (cab front and sides, body sides and doors, and boom lettering panels) are to meet or exceed Cadillac/General Motors GMW15777 global paint requirements. Orange peel levels are to meet or exceed the #6 A.C.T. standard in critical areas. These requirements must be met in order for the exterior paint finish to be considered acceptable. The manufacture's written paint standards shall be available upon request.</p>		

Bidder Complies	
Yes	No

PAINT - ENVIRONMENTAL IMPACT

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

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

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

CAB TWO-TONE PAINT

The cab shall be painted two-tone with the upper section painted #10 white and the lower section painted #90 red. There shall be a standard two-tone cab paint break provided.

There shall be a standard cab shield provided.

BODY PAINT

The body shall be painted to match the lower section of the cab.

PAINT CHASSIS FRAME ASSEMBLY

The chassis frame assembly shall be finished with a single system black top coat before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, etc.

Components that are included with the chassis frame assembly that shall be painted are:

- Frame rails
- Frame liners
- Cross members
- Axles

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Suspensions • Steering gear • Battery boxes • Bumper extension weldment • Frame extensions • Body mounting angles • Rear Body support substructure (front and rear) • Pump house substructure • Air tanks • Steel fuel tank • Castings • Individual piece parts used in chassis and body assembly <p>Components treated with epoxy E-coat protection prior to paint:</p> <ul style="list-style-type: none"> • Two (2) C-channel frame rails • Two (2) frame liners <p>The E-coat process shall meet the technical properties shown.</p> <p><u>PAINT, FRONT WHEELS</u> All wheel surfaces, inside and outside, shall be provided with powder coat paint #90 red.</p> <p><u>PAINT, REAR WHEELS</u> All wheel surfaces, inside and outside, shall be provided with powder coat paint #90 red.</p> <p><u>AXLE HUB PAINT</u> All axle hubs shall be painted to match primary job color.</p> <p><u>COMPARTMENT INTERIOR PAINT</u> The interior of all compartments shall be painted with a gray spatter type paint.</p> <p><u>REFLECTIVE BAND</u> A 10.00" white reflective band shall be provided across the front of the vehicle and along the sides of the body.</p> <p>The reflective band provided on the cab face shall be at the headlight level.</p> <p><u>REAR CHEVRON STRIPING</u> There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus.</p> <p>The colors shall be red and fluorescent yellow green diamond grade.</p> <p>Each stripe shall be 6.00" in width.</p>		

	Bidder Complies	
	Yes	No
<p>This shall meet the requirements of the current edition of NFPA 1901, which states that 50% of the rear surface shall be covered with chevron striping.</p> <p><u>"Z" RIBBON IN REFLECTIVE STRIPE</u></p> <p>"Z" type ribbon(s) shall be added to the reflective stripe. Areas adjacent to the "Z" portion of the stripe shall be shaded and highlighted with an air brush to give it a ribbon affect. There shall be two (2) pair on the vehicle.</p> <p><u>CAB DOOR REFLECTIVE STRIPE</u></p> <p>A 6.00" x 16.00" white reflective stripe shall be provided across the interior of each cab door. The stripe shall be located approximately 1.00" up from the bottom, on the door panel.</p> <p>This stripe shall meet the NFPA 1901 requirement.</p> <p><u>LETTERING</u></p> <p>The lettering shall be 22 karat gold vinyl.</p> <p><u>LETTERING</u></p> <p>One hundred one (101) to one hundred twenty (120) Sign Gold lettering, 3.00" high, with outline and shade shall be provided.</p> <p><u>WEB SITE ADDRESS LETTERING, REFLECTIVE</u></p> <p>There shall be a one (1) pair of web site addresses, in 1.00" to 2.00" reflective lettering, installed mount on bottom of compartments LS1 and RS1.</p> <p><u>LETTERING</u></p> <p>One (1) to twenty (20) reflective lettering, 14.00" high, with outline and shade shall be provided.</p> <p><u>LETTERING</u></p> <p>There shall be reflective lettering, 6.00" high, with outline provided. There shall be 15 letters provided.</p> <p><u>LETTERING</u></p> <p>There shall be reflective lettering, 18.00" high, with no outline or shade provided. There shall be five (5) letters provided.</p> <p><u>EMBLEM, FLEUR DE LIS</u></p> <p>There shall be two (2) pair of fleur de lis emblems, comprised of genuine gold leaf material, provided and installed front corners of cab refer to job #35138.</p> <p><u>EMBLEM</u></p> <p>There shall be one (1) reflective emblem(s), approximately 16.00" - 18.00" in size, installed B1. The emblem shall be modeled after the department submitted information (art, patch, etc).</p> <p><u>CAB GRILLE DESIGN</u></p> <p>An American flag design and two (2) painted letters/numerals with outline shall be painted on the cab grille, as determined by the fire department.</p>		

	Bidder Complies	
	Yes	No
<p><u>UNDERCOATING, CAB & BODY</u></p> <p>The apparatus shall be properly treated by an authorized Ziebart dealer.</p> <p>The underside of the apparatus shall be undercoated with an asphalt petroleum based material, dark in color.</p> <p>The undercoating material utilized on the apparatus shall be formulated to resist corrosion and deaden unwanted sound or road noise.</p> <p>Coating texture shall appear firm, flexible, and resistant to abrasion. Minimum dry film thickness shall be in the range of 8.00 to 12.00 mils.</p> <p>The material shall be applied to the following areas:</p> <ul style="list-style-type: none"> -Body and cab wheel well fender liners, on the back side only. -Underside of body and cab sheet metal, and structural components. -Underside and vertical sides of all sheet metal compartmentation, including support angles. -Structural support members under running boards, rear platforms, battery boxes, walkways, etc. -Inside surfaces of the pump heat enclosure. (when installed) -Suspension mounts. -Transmission cooler fittings. -Engine mounts. -Bottom and outside of framrails behind the forward edge of the water pump. <p>Exclusions shall be:</p> <ul style="list-style-type: none"> -Engine -Transmission -Drive lines -PTO's -Schroeder valves and tank drains -Intake valves 		

	Bidder Complies	
	Yes	No
<p>-Air Horns, sirens and back-up alarms</p> <p>-Framerails forward of the forward edge of the water pump.</p> <p><u>FIRE APPARATUS PARTS MANUAL</u></p> <p>There shall be one (1) custom parts manual(s) in USB flash drive format for the complete fire apparatus provided.</p> <p>The manual(s) shall contain the following:</p> <ul style="list-style-type: none"> • Job number • Part numbers with full descriptions • Table of contents • Parts section sorted in functional groups reflecting a major system, component, or assembly • Parts section sorted in alphabetical order • Instructions on how to locate parts <p>Each manual shall be specifically written for the chassis and body model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.</p> <p><u>Service Parts Internet Site</u></p> <p>The service parts information included in these manuals are also available on the factory website. The website offers additional functions and features not contained in this manual, such as digital photographs and line drawings of select items. The website also features electronic search tools to assist in locating parts quickly.</p> <p><u>CHASSIS SERVICE MANUALS</u></p> <p>There shall be one (1) chassis service manuals on USB flash drives containing parts and service information on major components provided with the completed unit.</p> <p>The manual shall contain the following sections:</p> <ul style="list-style-type: none"> • Job number • Table of contents • Troubleshooting • Front Axle/Suspension • Brakes • Engine • Tires • Wheels • Cab • Electrical, DC • Air Systems • Plumbing 		

Bidder Complies	
Yes	No

- Appendix

The manual shall be specifically written for the chassis model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.

CHASSIS OPERATION MANUAL

The chassis operation manual shall be provided on one (1) USB flash drive.

ONE (1) YEAR MATERIAL AND WORKMANSHIP

Each new piece of apparatus shall be provided with a minimum **one (1) year** basic apparatus material and workmanship limited warranty. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package (no exception).

ENGINE WARRANTY

A Cummins **five (5) year** limited engine warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.

STEERING GEAR WARRANTY

A TRW **one (1) year** limited steering gear warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.

FIFTY (50) YEAR STRUCTURAL INTEGRITY

The chassis frame shall be provided with a **fifty (50) year** material and workmanship limited warranty. The warranty shall cover the chassis frame as being free from defects in material and workmanship that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package (no exception).

FRONT AXLE WARRANTY

A Eaton **five (5)-year/100,000 mile** parts and labor warranty shall be provided.

TDM REAR AXLE FIVE (5) YEAR MATERIAL AND WORKMANSHIP WARRANTY

A Meritor™ Axle 5 year limited warranty shall be provided.

ABS BRAKE SYSTEM THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY

A Meritor Wabco™ ABS brake system **three (3) year** limited warranty shall be provided.

TEN (10) YEAR STRUCTURAL INTEGRITY

The new cab shall be provided with a **ten (10) year** material and workmanship limited warranty. The warranty shall cover such portions of the cab built by the manufacturer as being free from structural failures caused by defects in material and workmanship that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package (no exception).

	Bidder Complies	
	Yes	No
<p><u>TEN (10) YEAR PRO-RATED PAINT AND CORROSION</u></p> <p>Each new piece of apparatus shall be provided with a ten (10) year pro-rated paint and corrosion limited warranty on the apparatus cab. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>COMPARTMENT LIGHT WARRANTY</u></p> <p>A ten (10) year material and workmanship limited warranty shall be provided for the 12-volt DC LED strip lights. The warranty shall cover the LED strip lights to be free from defects in material and workmanship that would arise under normal use.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>TRANSMISSION WARRANTY</u></p> <p>The transmission shall have a five (5) year/unlimited mileage warranty covering 100 percent parts and labor. The warranty is to be provided by Allison Transmission and not the apparatus builder.</p> <p><u>TRANSMISSION COOLER WARRANTY</u></p> <p>The transmission cooler shall carry a five (5) year parts and labor warranty (exclusive to the transmission cooler). In addition, a collateral damage warranty shall also be in effect for the first three (3) years of the warranty coverage and shall not exceed \$10,000 per occurrence. A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>WATER TANK WARRANTY</u></p> <p>The UPF poly water tank shall be provided with a lifetime material and workmanship limited warranty.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>FIVE (5) YEAR STRUCTURAL INTEGRITY</u></p> <p>Each new piece of apparatus shall be provided with a five (5) year material and workmanship limited warranty on the apparatus body. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>PUMP WARRANTY</u></p> <p>The Hale five (5) year limited warranty on parts and two (2) year limited warranty on labor shall be provided for the pump.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p>		

	Bidder Complies	
	Yes	No
<p><u>TEN (10) YEAR PUMP PLUMBING WARRANTY</u></p> <p>The stainless steel plumbing components and ancillary brass fittings used in the construction of the water/foam plumbing system shall be warranted for a period of ten (10) years or 100,000 miles. This covers structural failures caused by defective design or workmanship, or perforation caused by corrosion, provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original purchaser for a period of ten years from the date of delivery.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>TEN (10) YEAR PRO-RATED PAINT AND CORROSION</u></p> <p>Each new piece of apparatus shall be provided with a ten (10) year pro-rated paint and corrosion limited warranty on the apparatus body. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>ONE (1) YEAR MATERIAL AND WORKMANSHIP</u></p> <p>The graphic lamination shall be provided with a one (1) year material and workmanship limited warranty. The warranty shall cover the graphic lamination as being free from defects in material, workmanship, fading, and deterioration that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>VEHICLE STABILITY CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a certification stating the apparatus complies with NFPA 1901, current edition, section 4.13, Vehicle Stability. The certification shall be provided at the time of bid.</p> <p><u>ENGINE INSTALLATION CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a certification, along with a letter from the engine manufacturer stating they approve of the engine installation in the bidder's chassis. The certification shall be provided at the time of delivery.</p> <p><u>POWER STEERING CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a certification stating the power steering system as installed meets the requirements of the component supplier. The certification shall be provided at the time of bid.</p> <p><u>CAB INTEGRITY CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a cab crash test certification with this proposal. The certification shall state that a specimen representing the substantial structural configuration of the cab has been tested and certified by an independent third party test facility. Testing events shall be documented with photographs, real-time and high-speed video, vehicle</p>		

Bidder Complies	
Yes	No

accelerometers, cart accelerometers, and a laser speed trap. The fire apparatus manufacturer shall provide a state licensed professional engineer to witness and certify all testing events. Testing shall meet or exceed the requirements below:

- European Occupant Protection Standard ECE Regulation No.29.
- SAE J2422 Cab Roof Strength Evaluation - Quasi-Static Loading Heavy Trucks.
- SAE J2420 COE Frontal Strength Evaluation - Dynamic Loading Heavy Trucks.

Roof Crush

The cab shall be subjected to a roof crush force of 22,500 lb. This value meets the ECE 29 criteria, and is equivalent to the front axle rating up to a maximum of ten (10) metric tons.

Side Impact

The same cab shall be subjected to dynamic preload where a 13,275-lb moving barrier is slammed into the side of the cab at 5.50 mph, striking with an impact of 13,000 ft-lb of force. This test is part of the SAE J2422 test procedure and more closely represents the forces a cab shall see in a rollover incident.

Frontal Impact

The same cab shall withstand a frontal impact of 32,600 ft-lb of force using a moving barrier in accordance with SAE J2420.

Additional Frontal Impact

The same cab shall withstand a frontal impact of 65,200 ft-lb of force using a moving barrier. (Twice the force required by SAE J2420)

The same cab shall withstand all tests without any measurable intrusion into the survival space of the occupant area.

There shall be no exception to any portion of the cab integrity certification. Nonconformance shall lead to immediate rejection of bid.

CAB DOOR DURABILITY CERTIFICATION

Robust cab doors help protect occupants. Cab doors shall survive a 200,000 cycle door slam test where the slamming force exceeds 20 G's of deceleration. The bidder shall certify that the sample doors similar to those provided on the apparatus have been tested and have met these criteria without structural damage, latch malfunction, or significant component wear.

WINDSHIELD WIPER DURABILITY CERTIFICATION

Visibility during inclement weather is essential to safe apparatus performance. Windshield wipers shall survive a 3 million cycle durability test in accordance with section 6.2 of SAE J198 *Windshield Wiper Systems - Trucks, Buses and Multipurpose Vehicles*. The bidder shall certify that the wiper system design has been tested and that the wiper system has met these criteria.

Bidder Complies	
Yes	No

SEAT BELT ANCHOR STRENGTH

Seat belt attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat belt anchor design shall withstand 3000 lb of pull on both the lap and shoulder belt in accordance with FMVSS 571.210 Seat Belt Assembly Anchorages. The bidder shall certify that each anchor design was pull tested to the required force and met the appropriate criteria.

SEAT MOUNTING STRENGTH

Seat attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat mounting design shall be tested to withstand 20 G's of force in accordance with FMVSS 571.207 Seating Systems. The bidder shall certify, at time of delivery, that each seat mount and cab structure design was pull tested to the required force and met the appropriate criteria.

PERFORMANCE CERTIFICATIONS

Cab Air Conditioning

Good cab air conditioning temperature and air flow performance keeps occupants comfortable, reduces humidity, and provides a climate for recuperation while at the scene. The cab air conditioning system shall cool the cab from a heat-soaked condition at 100 degrees Fahrenheit to an average of 78 degrees Fahrenheit in 30 minutes. The bidder shall certify that a substantially similar cab has been tested and has met these criteria.

Cab Defroster

Visibility during inclement weather is essential to safe apparatus performance. The defroster system shall clear the required windshield zones in accordance with SAE J381 Windshield Defrosting Systems Test Procedure And Performance Requirements - Trucks, Buses, And Multipurpose Vehicles. The bidder shall certify that the defrost system design has been tested in a cold chamber and passes the SAE J381 criteria.

Cab Auxiliary Heater

Good cab heat performance and regulation provides a more effective working environment for personnel, whether in-transit, or at a scene. An auxiliary cab heater shall warm the cab 77 degrees Fahrenheit from a cold-soak, within 30 minutes when tested using the coolant supply methods found in SAE J381. The bidder shall certify, at time of delivery, that a substantially similar cab has been tested and has met these criteria.

AMP DRAW REPORT

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

The manufacturer of the apparatus shall provide the following:

- Documentation of the electrical system performance tests.
- A written load analysis, which shall include the following:
 - The nameplate rating of the alternator.

	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> ○ The alternator rating under the conditions specified per: <ul style="list-style-type: none"> ▪ Applicable NFPA 1901 or 1906 (Current Edition). ○ The minimum continuous load of each component that is specified per: <ul style="list-style-type: none"> ▪ Applicable NFPA 1901 or 1906 (Current Edition). ○ Additional loads that, when added to the minimum continuous load, determine the total connected load. ○ Each individual intermittent load. <p>All of the above listed items shall be provided by the bidder per the applicable NFPA 1901 or 1906 (Current Edition).</p>		