

**LEGAL NOTICE
REQUEST FOR PROPOSAL
TOWN OF ELLINGTON**

Ellington Fire Department-Triple Combination Pumper

Sealed proposals will be received by the Town of Ellington, acting through its Finance Officer, to purchase a new triple combination fire engine tanker, per the Specifications.

Proposals are to be delivered to the Finance Officer, Town Hall. Proposals are to be clearly marked "ELLINGTON FIRE TRIPLE COMBINATION PUMPER" and sealed and shall be directed to:

Nicholas J. DiCorleto, Jr., Finance Officer
Town of Ellington
55 Main Street
Ellington, CT 06029

Proposals will be received until January 12, 2017 by 10:00 A.M. Proposals will then be publicly opened and read aloud in the Meeting Hall of Town Hall.

Specifications and Contract Documents may be obtained at the office of the Finance Officer, 55 Main Street, Ellington, Connecticut during normal business hours, on or after November 28, 2016.

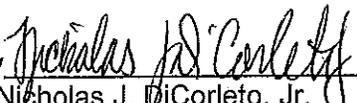
A **MANDATORY** pre-proposal meeting will be held with the Finance Officer and the Ellington Fire Department at 10:00 A.M., prevailing time, on December 15, 2016 in the Meeting Hall of Town Hall. All potential proposers are required to attend. No proposal will be accepted from an entity not attending the pre-proposal meeting.

No proposal may be withdrawn for a period of one hundred twenty (120) days after opening without approval and written consent of the Town of Ellington.

The Town of Ellington reserves the right to amend or terminate this Request for Proposal, reject any or all proposals, and/or waive any informalities, omissions, excess verbiage or technical defects in the proposal and the Town need not necessarily award the contract to the lowest proposer if, in the opinion of the Town, it would be in the best interest of the Town of Ellington to accept another proposal.

NOTE: No appropriation has yet been made to finance this purchase and this Request for Proposal may be terminated and all proposals may be rejected if no such appropriation is made within one hundred twenty (120) days from proposal opening.

TOWN OF ELLINGTON

By 
Nicholas J. DiCorleto, Jr.
Finance Officer

NICHOLAS J. DiCORLETO, JR., FINANCE OFFICER
55 MAIN STREET
ELLINGTON, CT 06029

INSTRUCTION TO PROPOSERS

1. **SPECIAL NOTICE TO PROPOSERS:**

A. The Proposal Documents comprise the following:

1. Legal Notice/Request for Proposal
2. Instruction to Proposers
3. Specifications
4. Proposal Form with Warranty Statement
5. Proposal (bid) Bond
6. Non-collusion Affidavit
7. Draft Contract

2. **PROPOSAL FORM:**

A. All proposals shall be submitted on self-generated forms providing all required information as set forth in the Specifications.

B. Proposals submitted by all proposers to The Town of Ellington, Connecticut shall be enclosed in sealed envelopes, which shall clearly be labeled with the word "Proposal Documents", **ELLINGTON FIRE TRIPLE COMBINATION PUMPER**, and the firm name and address of the proposer.

C. All proposers shall submit three sets of completely executed proposal forms and documents which shall include: Proposal Form, Proposer's Qualification Statement, Specifications with all requested information, Warranty Statement, any additional information or proposed substitutions.

D. The Town of Ellington, Connecticut may consider as informal any proposal which fails to contain all of the information required in the Proposal documents, as set forth above.

E. The contract will be based upon and require the completion of the work according to the Contract Documents, together with all addenda thereto.

F. Each proposal must be accompanied by a Proposal (bid) Bond equal to 10% of the proposer's total price without alternates or substitutions with either a corporate surety from a company licensed to write surety bonds in the State of Connecticut or by proposer's certified check made payable to the Town of Ellington.

3. TIME FOR RECEIVING PROPOSALS:

A. Proposals will be received by the Finance Officer of the Town of Ellington, Connecticut at the Town Hall, 55 Main Street, Ellington, Connecticut until 10:00 A.M., prevailing time, on January 11, 2017 at which time the proposals will be publicly opened.

B. Proposals received prior to the time established herein for the receipt and opening of the same, will be securely kept unopened. The officer whose duty it is to receive and open all proposals will decide when the specified time has arrived for the opening of same. No responsibility will be attached to an officer for premature opening of a proposal not properly addressed and identified.

C. The Town of Ellington, Connecticut will neither accept nor consider any proposal which is received after the time established herein for the opening of the same; regardless of the cause for delay in the arrival of the proposal. The same will be returned unopened.

D. Telegraphic or faxed proposals will not be considered.

E. Proposers are cautioned to allow ample time for transmittal of proposals by mail or otherwise.

4. WITHDRAWAL OF PROPOSALS BEFORE DATE OF BID OPENING:

A. Any proposal may be withdrawn on written or telegraphic or fax request, dispatched in time for delivery in the normal course of business, at least one hour prior to the hour fixed for the opening of proposals. Fax number for the Finance Officer is (860) 870-3518.

5. INTERPRETATIONS OF CONTRACT DOCUMENTS:

A. No oral interpretations will be made to any proposer as to the meaning of the Specifications and Contract Documents. Every request for such an interpretation shall be made in writing by a proposer and forwarded to the Finance Officer, 55 Main Street, Ellington, Connecticut 06029. No inquiry received within seven (7) days of the date fixed for opening of proposals will be given consideration. Every interpretation made to a proposer will be in the form of an addendum to the specifications. Said addendum will be sent as promptly as is practicable, to all persons to whom the Proposal Package has been issued. All such addenda shall become a part of the Contract Documents.

B. Except as specifically provided in this Paragraph 5, proposers are prohibited from contacting any Town employee, officer or official concerning this Request for Proposals. Failure to comply with this requirement may result in disqualification.

6. EXAMINATION OF SPECIFICATIONS, ETC.:

A. Each proposer shall thoroughly examine and be familiar with the Specifications and Contract Documents. The failure or omission of any proposer to examine any form, instrument, addendum or other document, shall in no way relieve said proposer from any obligations with respect to his proposal. No proposer shall rely upon any oral representation of any person, town official, or employee concerning site conditions or job requirements, nor will such reliance excuse performance in accordance with the contract nor be the basis for any claimed extra costs. Proposers shall raise any such issues by written request under Paragraph 5 hereof. The submission of a proposal shall be taken as prima facie evidence of compliance with this section.

B. **A MANDATORY PRE-PROPOSAL MEETING** to review the work requirements and specifications will be held with the Finance Officer and the Ellington Fire Department at 10:00 A. M., prevailing time, on December 14, 2016, in the Meeting Hall of Town Hall. All potential proposers are required to attend.

7. AWARD OF CONTRACT:

A. The Town of Ellington reserves the right to reject any or all proposals, and/or to waive any informalities, omissions, excess verbiage or technical defects in the proposal.

B. The contract will be awarded to the lowest responsible and eligible proposer complying with the conditions of the Contract Documents, *providing that* his proposal is reasonable and that it is in the best interests of the Town of Ellington, Connecticut to accept it. Although price will be an important factor, it will not be the only basis for award of the contract. Due consideration may also be given to a proposer's experience, references, service, ability to respond promptly to requests, past performance and other criteria relevant to the Town's interest, including compliance with the procedural requirements stated in this Request for Proposals.

C. The Town will not award the contract to any business that, or individual who, is in arrears or in default to the Town with regard to any tax, debt, contract, security or any other obligation.

D. The award of the contract, if same is to be awarded, will be made within one hundred twenty (120) days after opening of proposals.

E. The successful proposer will be required to execute a contract with the Town of Ellington within fourteen (14) days following the Notice of Award in form substantially as attached. The Notice of Award does not provide the proposer with any rights and does not impose on the Town any obligations. The Town is free to withdraw its award at any time and for any reason prior to the signing of the contract.

F. It is hereby noted and acknowledged that no appropriation has yet been made by the Town of Ellington to finance this purchase and this Request for Proposal may be terminated and all proposals may be rejected if no such appropriation is made within one hundred twenty (120) days from proposal opening.

8. SALES TAX AND COST OF PERMITS:

Sales tax does not have to be included in proposals. Contractor must obtain the appropriate tax exempt number from the Finance Office.

9. ADDITIONAL REQUIREMENTS OF THE CONTRACT:

Proposers should take note that at the time of signing the contract all of the following additional documents are required by the contract:

9.1 Certificate of Insurance with coverages set forth in the Specifications.

9.2 Performance bond in the full amount of the contract.

9.3 Payment bond in the full amount of the contract.

9.4 Corporate Resolution, or similar, authorizing execution of contract (Sample will be furnished to successful bidder).

9.5 Opinion of Contractor's counsel opining as to Contractor's legal authority to perform this type of work, legal standing under law, officers or members of contractor and financial standing. (Sample will be furnished to successful bidder).

10. FREEDOM OF INFORMATION ACT:

All information submitted in a proposal or in response to a request for additional information is subject to disclosure under the Connecticut Freedom of Information Act as amended and judicially interpreted. A proposer's responses may contain financial, trade secret or other data that it claims should not be public (the "Confidential Information"). A proposer must identify specifically the pages and portions of its proposal or additional information that contain the claimed Confidential Information by visibly marking all such pages and portions. Provided that the proposer cooperates with the Town as described in this section, the Town shall, to the extent permitted by law, protect from unauthorized disclosure such Confidential Information.

If the town receives a request for a proposer's Confidential Information, it will promptly notify the proposer in writing of such request and provide the proposer with a copy of any written disclosure request. The proposer may provide written consent to the disclosure or may object to the disclosure by notifying the Town in writing to withhold disclosure of the information, identifying in the notice the basis for its objection, including the statutory exemption(s) from disclosure. The proposer shall be responsible for defending any complaint brought in connection with the nondisclosure, including but not limited to appearing before the Freedom of Information Commission and providing witnesses and documents as appropriate.

NON-COLLUSION AFFIDAVIT

To the Town of Ellington:

RE: ELLINGTON FIRE TRIPLE COMBINATION PUMPER

The undersigned proposer, having fully informed himself/herself/itself regarding the accuracy of the statements made herein, certifies that:

- (a) The proposal is genuine; it is not a collusive or sham proposal;
- (b) The proposer developed the proposal independently and submitted it without collusion with, and without any agreement, understanding, communication or planned common course of action with, any other person or entity designed to limit independent competition;
- (c) The proposer, its employee and agents have not communicated the contents of the proposal to any person not an employee or agent of the proposer and will not communicate the proposal to any such person prior to the official opening of the proposal; and
- (d) No elected or appointed official or other officer or employee of the Town of Ellington is directly or indirectly interested in the proposer's proposal, or in the supplies, materials, equipment, work or labor to which it relates, or in any of the profits thereof.

The undersigned proposer further certifies that this affidavit is executed for the purpose of inducing the Town of Ellington to consider its proposal and make an award in accordance therewith.

DATED: _____, 2017.

PROPOSER:

By _____

SUBSCRIBED and sworn to before me this ____ day of _____, 2017.

Notary Public

BID BOND

1. KNOW ALL MEN BY THESE PRESENTS, that

(Insert full name or legal title and address of Contractor)

Bidder and Principal, is held and is firmly bound unto the Town of Ellington, 55 Main Street, Ellington, CT 06029 as Obligee, hereinafter called the Town, in the sum of _____ () Dollars, for the payment of which sum well and truly to be made, the said Bidder-Principal, binds himself, his heirs, executors, administrators, successors and assigns, firmly by these presents.

2. WHEREAS, the Principal has submitted a proposal for an Ellington Project entitled "**Ellington Fire Triple Combination Pumper**";

3. NOW, THEREFORE, if the Town shall accept the proposal of the Bidder-Principal and the Bidder-Principal shall enter into a Contract with the Town in accordance with the terms of such proposal, and give such bond or bonds as may be specified in the Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bonds, if the Principal shall pay to the Town the difference not to exceed the penalty hereof between the amount specified in said proposal and such larger amount for which the Town may in good faith contract with another party to perform the Work covered by said proposal, then this obligation shall be null and void, otherwise to remain in full force and effect.

4. The Bidder-Principal has delivered a bank or certified check in the sum set forth above payable to the Town of Ellington which shall constitute surety for this Bond. The Town is entitled to hold or negotiate said check at its option pending satisfaction of this obligation.

Signed and sealed this _____ day of _____, 2017.

WITNESS:

BIDDER-PRINCIPAL:

(Name of Bidder)

By _____
(Print Name and Title)

BID BOND PAGE 2

NAME OF SURETY COMPANY _____

By _____
TYPE NAME and AUTHORITY

NOTE: The Bid Bond must have surety. The Town will accept a bank check or certified check payable to the Town of Ellington in the amount of the bond or execution of the Bid Bond by a surety company. If a surety Company executes this Bond as surety, then Paragraph 4 should be eliminated which may be done by line out or copying the bond without that paragraph.

TOWN OF ELLINGTON CONTRACT - DRAFT

ELLINGTON FIRE TRIPLE COMBINATION PUMPER

AGREEMENT made as of the _____ day of _____, 2015, between the **TOWN OF ELLINGTON**, acting herein by Lori L. Spielman, First Selectman, 55 Main Street, P.O. Box 187, Ellington, Connecticut 06029, hereinafter referred to as "the Town" and in supplemental documents as "the Owner", and _____, with a principal office located at _____, hereinafter referred to as "the Contractor".

The Project is:

ELLINGTON FIRE TRIPLE COMBINATION PUMPER

The Project Coordinator is:

Gary T. Feldman, Sr., Chief of the Ellington Volunteer Fire Department, Inc.

The Town and the Contractor agree as follows:

ARTICLE 1:

CONTRACT DOCUMENTS

1.1 The Contract Documents consist of all of the documents listed in Paragraph 1.2. All of the documents form the Contract between the parties and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract is the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than modifications subsequent to this Agreement, are listed in Section 1.2.

1.2 The Contract Documents, except for modifications which may be issued after execution of this Agreement, are:

- (a) This contract as executed by the parties;
- (b) The specifications entitled, "Ellington Fire Triple Combination Pumper Specifications" (the "Specifications");
- (c) Request for Proposals;
- (d) Instructions to Proposers;
- (e) Contractor's Proposal Letter dated _____, 2017 and all attached documents included in the binder containing the Proposal;
- (f) Any supplemental proposal or documents provided by Contractor;
- (g) Contractor's Certificate of Insurance;
- (h) Certifications, drawings, pictures or samples provided prior to signing this contract;

- (i) Contractor's performance bond;
- (j) Contractor's payment bond;
- (k) Non-collusion Affidavit;
- (l) Corporate Resolution, or similar, authorizing execution of contract;
- (m) Opinion of Contractor's counsel opining as to Contractor's legal authority to perform this type of work, legal standing under law, officers or members of contractor and financial standing.

ARTICLE 2:

CONTRACT WORK

The Contractor shall perform the work as defined in the Specifications and as described in the Contract Documents, hereinafter referred to as "the Work". Without limiting the specific requirements of the Work as set forth in the Contract Documents, a summary description of the Work is:

2.1 To furnish all labor and materials necessary to manufacture and deliver the described Fire Triple Combination Pumper, complete in all respects and ready for use, in accordance with the Specifications as developed by the Town, the Supplemental terms and federal and state requirements.

ARTICLE 3:

DATES OF COMMENCEMENT & SUBSTANTIAL COMPLETION

3.1 The Contractor shall deliver the completed vehicle to the Ellington Fire Department, _____, Ellington, Connecticut, which shall constitute final completion of the work no later than three hundred sixty (360) calendar days from the date of this contract. The vehicle shall be titled in the name of THE TOWN OF ELLINGTON.

3.2 The Contractor warrants all of its work and materials in accordance with the guarantees required in the Specifications.

ARTICLE 4:

CONTRACT SUM

The Town shall pay the Contractor for the Contractor's performance of the contract the contract sum of _____ Dollars.

ARTICLE 5:

PAYMENT

Payment of the Contract shall be as follows:

5.1 Single Payment. A single payment equal to the Contract Price shall be paid within fifteen (15) days after all of the following: (a) delivery of the Fire Triple Combination Pumper by Contractor; and (b) approval of the Fire Triple Combination

Pumper by the Project Coordinator and Board of Selectmen. Payment of the contract sum shall not be deemed a waiver or release of the Contractor's responsibility to correct nonconforming work in the Contract Documents or to satisfy any other requirements which may survive final payment including warranties as set forth in the bid documents. [THIS ARTICLE MAY BE CHANGED IF THE ACCEPTED PROPOSAL PROVIDES FOR A DIFFERENT PAYMENT SCHEDULE]

ARTICLE 6:

ADDITIONAL PROVISIONS

6.1 Conflicts. In the event that any provision of any other Contract Document is as inconsistent with the terms of this Agreement as to be mutually exclusive, then the terms of this Agreement shall control.

6.2 Pre-Conditions. The Contractor acknowledges that it has examined, to its satisfaction, all conditions relating to the work to be performed and all drawings and specifications for the Project and has not relied upon any oral representation of any EVFD member, Town official or employee concerning job requirements.

6.3 Insurance. The Contractor will provide a Certificate of Insurance naming the Town of Ellington as an additional insured on Contractor's insurance in the forms of insurance and amounts set forth in the specifications. Only Insurance companies licensed to do business in Connecticut will be accepted.

6.4 Knowledge of Laws. The Contractor acknowledges that it is familiar with all federal and state laws and all local By-laws, Ordinances and Regulations which in any manner affect those engaged or employed on the Work, or the material and equipment used in the Work, or in any way affect the conduct of the Work, equipment, design or safety devices required for this type of vehicle, and no claim of misunderstanding or lack of knowledge of the same will be considered a basis for terminating the Work or amending this Agreement.

6.5 Discrepancies. If, at any time, the Contractor shall determine that there are discrepancies, omissions, ambiguities or conflicts in or among the Contract Documents, or that any provision conflicts with any law, regulation or code, the Contractor shall immediately notify the Owner. If the Owner determines that clarification is necessary, such clarification shall be made in writing as an addendum to this Agreement and shall be signed by the parties. No verbal instructions or interpretations shall be deemed valid.

6.6 Governing Law. This Agreement and any other Contract Document shall be governed by and interpreted under the laws of the State of Connecticut. If any provision of this Agreement or any other Contract Document is found to be invalid or unenforceable by any court, the same shall not affect the remainder of the Agreement or other Contract Document, which shall remain in effect as if the invalid or unenforceable provision had not been included therein.

6.6.1 Dispute Resolution. The parties agree that if any dispute under this contract is to be resolved by suit, it shall be resolved by arbitration under the rules of the American Arbitration Association with any hearing to be held Tolland County, CT, unless otherwise mutually agreed. The decision of the arbiter shall be binding on the parties and may be submitted to the Superior Court for the Judicial District of Tolland at Rockville for confirmation as a judgment pursuant to Chapter 909, CGS Sec. 52-408 to 52-423, which court shall have exclusive jurisdiction or venue in these matters. Each party shall pay all of its own costs of arbitration but the cost of AAA and/or the arbiters shall be borne equally by the parties.

6.7 Captions. Captions used in this Agreement are for convenience only and are not intended to be limitations on, nor interpretations of, the specific provisions hereof.

6.8 Non-Assignability. No assignment of the rights, obligations or interests by a party to this Agreement will be binding on the other party without its prior written consent and no such assignment shall release or discharge the assignor from any duty, obligation or responsibility under this Agreement or under any other Contract Document.

6.9 Contractor hereby agrees to indemnify and hold Owner, its agents, servants and employees harmless from any and all claims, demands, liabilities, and lawsuits, including reasonable attorney's fees incurred thereby, resulting from or pertaining to any alleged violations by Contractor and all Subcontractors of any and all applicable federal, state and local nondiscriminatory or employment laws, rules and regulations in effect and applicable to the Project.

6.10 Non-Discrimination. Contractor agrees and warrants that in the performance of the contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, mental retardation, mental disability, or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut. The Contractor further agrees to take affirmative action to insure that applicants with job related qualifications are employed and that employees are treated, when employed, without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, mental retardation, mental disability, or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved. The Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer".

IN WITNESS WHEREOF, the parties have executed this Agreement as at the date stated above to THREE copies of this contract each of which shall be an original contract document.

TOWN OF ELLINGTON

By _____

Lori L. Spielman
Its First Selectman
Duly Authorized

Dated:

By _____

Its President, Duly Authorized

Dated:



| Bidder Complies | |
|--------------------|----|
| Yes | No |

**SPECIFICATIONS FOR A TRIPLE COMBINATION PUMPER FOR THE
ELLINGTON FIRE DEPARTMENT**

Version 12.25

Sealed bids will be received by Ellington 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, finish, equipment and tests to which the fire apparatus shall conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor.

Images and illustrative material in this specification are as accurate as known at the time of publication, but are subject to change without notice. Images and illustrative material is for reference only, and may include optional equipment and accessories and may not include all standard equipment.

INSTRUCTIONS TO BIDDERS

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 may 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).

Each bidder shall furnish satisfactory evidence of their ability to construct the apparatus specified. Any apparatus manufacturer or their parent company that has had a performance bond called in the last 10 years, shall not be eligible to bid. Any bids from these manufacturers will be immediately rejected. (No exception)

Bidders may submit options to the end of their bid when they feel they have an offering that should be considered.

Specification

| | Bidder Complies | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----|
| | Yes | No |
| <p>Each bidder shall provide the following information regarding the surety company supplying their performance bond: A. M. Best Financial Strength Rating and Size Category, as well as the amount paid per \$1000 of bond coverage.</p> <p>Each bid shall be accompanied by a set of manufacturer's set of specifications consisting of a detailed description of the apparatus, construction methods, proposal drawing and equipment proposed to which 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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p><u>EXCEPTIONS</u></p> <p>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.</p> <p>Bidders shall indicate in the "yes/no" column if their bid complies on each item (paragraph) specified.</p> | | |

Specification

| Bidder Complies | |
|-----------------|----|
| Yes | No |

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.

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)

GENERAL DESIGN AND CONSTRUCTION

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, address, and engineering source for each individual major component, including but not limited to the welded cab assembly, the pump house module assembly, the chassis assembly, body, and electrical system.

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.

QUALITY AND WORKMANSHIP

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 the American Welding Society codes upon hire and every three (3) years thereafter. The manufacturer shall be

Specification

| | Bidder Complies | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----|
| | Yes | No |
| <p>required to have an American welding Society certified welding inspector in plant during working hours to monitor weld quality.</p> <p>The manufacturer should be certified to 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, manufacture, installation and service. A copy of the certificate of compliance shall be included with the bid. Any exceptions to this are to be explained to ensure a quality management system is in place.</p> <p>To demonstrate the quality of the product and service, each bidder shall provide a list of five (5) fire departments/municipalities in Connecticut that have purchased at least a second truck from the representing dealer with the latest delivery in the prior 24 months.</p> <p><u>DELIVERY</u> 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.</p> <p><u>MANUALS AND SERVICE INFORMATION</u> The manufacturer shall supply at time of delivery, complete operation and maintenance manuals covering the complete apparatus as delivered. A permanent plate shall be mounted in the driver's compartment which specifies the quantity and type of fluid required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.</p> <p><u>SAFETY VIDEO</u> Since video is much more effective than written documentation and can be replayed for new personnel and as a refresher for existing personnel, an apparatus safety video, in DVD format shall be provided at time of delivery. 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 on the video: vehicle pre trip inspection, chassis operation, pump operation and maintenance.</p> <p><u>PERFORMANCE TESTS AND REQUIREMENTS</u> 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 axle 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:</p> | | |

Specification

**Bidder
Complies**

Yes No

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.

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 the governed rpm (full load).

FAILURE TO MEET TEST

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.

SERVICE AND WARRANTY SUPPORT (DEALERSHIP)

TO INSURE FULL SERVICE AFTER DELIVERY, THE SELLING BIDDER/DEALERSHIP MUST BE CAPABLE OF PROVIDING SERVICE WHEN REQUIRED.

The bidder/dealership shall show that the company is in position to render prompt service and to furnish replacement parts.

Each bidder/dealership must be able to display that they are actively in the fire apparatus service business by owning and operating a factory authorized service center and parts repository capable of satisfying the warranty service requirements and parts requirements of the vehicle being purchased.

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 thirty-five (35) miles of the Fire Department.

Specification

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| | Yes | No |
| <p>The facility will be staffed with a minimum of four full time factory trained, certified technicians. The facility will be equipped with the necessary modern equipment and stock adequate repair parts to service the fire apparatus. Additionally, 24 hour emergency road service will be provided with properly equipped road service vehicles.</p> <p>Details shall be provided listing service personnel, training, certifications and facilities offered by Servicing Dealer as well as service references, and commitment level to manufacturer.</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 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> | | |

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| | Yes | No |
| <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. To ensure this will occur, the bidder shall carry the following minimum insurance.</p> <p><u>COMMERCIAL GENERAL LIABILITY INSURANCE</u></p> <p>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:</p> <p style="padding-left: 40px;">Each Occurrence: \$1,000,000</p> <p style="padding-left: 40px;">Products/Completed Operations Aggregate: \$1,000,000</p> <p style="padding-left: 40px;">Personal and Advertising Injury: \$1,000,000</p> <p style="padding-left: 40px;">General Aggregate: \$5,000,000</p> <p style="padding-left: 40px;">Contractual Liability: \$1,000,000</p> <p style="padding-left: 40px;">Workers' Compensation Insurance as per statutory requirement</p> <p style="padding-left: 40px;">Employer's Liability: \$100,000</p> <p>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.</p> <p><u>COMMERCIAL AUTOMOBILE LIABILITY INSURANCE</u></p> <p>The successful bidder shall, during the performance of the contract keep in force at least the following minimum limits of commercial automobile liability insurance:</p> <p style="padding-left: 40px;">Each Accident Combined Single Limit: \$1,000,000</p> <p>Coverage shall be written on a Commercial Automobile liability form.</p> <p><u>UMBRELLA/EXCESS LIABILITY INSURANCE</u></p> <p>The successful bidder shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force umbrella liability insurance. The bidder is to provide their coverage limits at time of bid.</p> <p style="padding-left: 40px;">Aggregate: _____</p> | | |

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| <p>Each Occurrence: _____ - _____</p> <p>The umbrella policy shall be written on an occurrence basis and at a minimum provide excess to the Bidder's General Liability, Automobile Liability and Employer's Liability 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) licensed to do business in the State of Connecticut and rated A- or better by A.M. Best.</p> <p>All policies shall name the Owner as an additional insured and provide a 30 day notice of cancellation to the named insured. The Certificate of Insurance shall provide the following cancellation clause:</p> <p>Should any of the above described policies be cancelled before the expiration date thereof, notice shall be delivered in accordance with the policy provisions. Bidder agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with its bid. The certificate shall show the purchaser as certificate holder.</p> <p>All subcontractors shall carry the same the same coverages as required for the successful bidder and the successful bidder shall determine that such coverage is in effect prior to allowing any subcontractor to commence work.</p> <p><u>SINGLE SOURCE MANUFACTURER</u></p> <p>Bids are preferred 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, pump house (including the sheet metal enclosure, valve controls, piping and operator's 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, pump house, cab weldment and chassis).</p> <p>The bidder shall state the location of the factory where the apparatus is to be built as well as the manufacturing locations of individual components as required on page 3.</p> <p><u>NFPA COMPLIANCY</u></p> <p>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</p> | | |

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| <p>department's specifications that differ from NFPA specifications shall be indicated in the proposal as "non-NFPA".</p> <p><u>VEHICLE INSPECTION PROGRAM CERTIFICATION</u></p> <p>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)</p> <p>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.</p> <p><u>PUMP TEST</u></p> <p>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.</p> <p><u>GENERATOR TEST</u></p> <p>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.</p> <p><u>FIRST ANNUAL DOT INSPECTION AND PUMP TEST</u></p> <p>The first annual pump test and DOT inspection shall be included in the contract.</p> <p><u>REQUIREMENTS OF THE APPARATUS MANUFACTURER</u></p> <p>The manufacturer of the apparatus must be fully owned and managed by a Parent Company, Corporation, Partnership, or that is a company 100% held in the United States of America.</p> <p>Proposals from any manufacturer that is fully or partially owned and/or operated by a Foreign Company, Corporation, Partnership, or that is a company under any type of ownership, partnership, or any similar type of agreement shall be rejected immediately and their bid disqualified. (No Exception).</p> <p><u>INSPECTION TRIP</u></p> <p>The bidder shall provide two (2) factory inspection trip for five (5) customer representatives. The inspection trip shall be scheduled at 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.</p> | | |

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| <p><u>BID BOND</u></p> <p>All bidders shall provide a bid bond as security for the bid in the form of a 10% 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>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> <p><u>PERFORMANCE BOND</u></p> <p>The successful bidder shall furnish a Performance and Payment bond (Bond) equal to 100 percent of the total contract amount prior to or on the date the contract is signed.</p> <p>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 Bumper to Bumper 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 three (3) years from the date of such satisfactory acceptance and delivery, or the actual Bumper to Bumper warranty period, whichever is shorter.</p> <p><u>APPROVAL DRAWING</u></p> <p>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.</p> <p>A "revised" approval drawing of the apparatus shall be prepared and submitted by the manufacturer to the purchaser showing any changes made to the original approval drawing.</p> | | |

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| | Yes | No |
| <p><u>CHASSIS</u> Chassis provided shall be a new, tilt-type, custom fire apparatus. The chassis shall be manufactured in the apparatus body builder's facility, thus eliminating any split responsibility. The chassis shall be designed and manufactured for heavy-duty service with adequate strength and capacity to sustain the intended load and the type of service required.</p> <p><u>WHEELBASE</u> The wheelbase of the vehicle shall be no greater than 200".</p> <p><u>GVW RATING</u> The gross vehicle weight rating shall be a minimum of 53,800#.</p> <p><u>FRAME</u> 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.</p> <p>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.</p> <p><u>FRONT NON DRIVE AXLE</u> The front axle shall be of the independent suspension design with a ground rating of 22,800 lb.</p> <p>The steering linkage shall provide proper steering angles for the inside and outside wheel, based on the vehicle wheelbase.</p> <p>The axle shall have a third party certified turning angle of 45 degrees in configuration proposed.</p> <p><u>FRONT SUSPENSION</u> Front independent suspension shall be provided with a minimum ground rating of 22,800 lb.</p> <p>The independent suspension system shall be designed to provide maximum ride comfort. The design shall allow the vehicle to travel at highway speeds over improved road surfaces and at moderate speeds over rough terrain with minimal transfer of road shock and vibration to the vehicle's crew compartment.</p> <p><u>FRONT SHOCK ABSORBERS</u> KONI heavy-duty telescoping shock absorbers shall be provided on the front suspension.</p> | | |

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| <p><u>FRONT OIL SEALS</u> Oil seals with viewing window shall be provided on the front axle.</p> <p><u>IFS INFORMATION</u> The importance of Firefighter Safety cannot be overstressed. To insure the highest levels of personnel protection and reliability, the following requirements apply to any IFS (Independent Front Suspension) system proposed.</p> <p style="padding-left: 40px;">Manufacturer shall provide details of the independent front suspension offered to include Make, Ratings, Construction, Serviceability, and Adjustability.</p> <p style="padding-left: 40px;">Manufacturer shall provide length of time this system has been offered for sale in this chassis, as well as length of time system has actually been installed in this chassis.</p> <p style="padding-left: 40px;">Manufacturer shall provide the quantity of this chassis utilizing this suspension system currently in service in the United States Fire Service.</p> <p><u>FRONT TIRES</u> Front tires shall be Goodyear® 425/65R22.50 radials, 20 ply G296 MSA tread, rated for 22,800 lb maximum axle load and 68 mph maximum speed.</p> <p>The tires shall be mounted on 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 Meritor™, Model RS-30-185, with a capacity of 31,000 lb.</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> The rear springs shall be Standens semi-elliptical, 3.00" x 52.00", 11 leaves main with a ground rating of 31,000 lb. Spring hangers shall be castings with provisions for lubrication. The grease fittings shall be 90 degree type and shall be accessible without removing the wheels or cutting any sheet metal. Two (2) top leaves shall wrap the forward spring hanger pin and the top leaf shall wrap the rear spring hanger pin on both the front and rear suspensions.</p> <p>Kaiser spring pins shall be provided, with double "figure-eight" grease grooves and a layer of electroless nickel plating, 1.00 mil thick, around the entire pin. The bushing that holds the spring pin in place shall also have a grease groove.</p> <p><u>REAR OIL SEALS</u> Oil seals shall be provided on the rear axle.</p> | | |

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| <p><u>REAR TIRES</u> Rear tires shall be four (4) Goodyear 315/80R22.50 radials with load range L, all position, G751 MSA tread, rated for 33,080 lb maximum axle load and 68 mph maximum speed.</p> <p>The tires shall be mounted on 22.50" x 9.00" steel disc type wheels with a ten (10) stud, 11.25" bolt circle.</p> <p><u>TIRE BALANCE</u> All tires shall be balanced with Counteract balancing beads. The beads shall be inserted into the tire and eliminate the need for wheel weights.</p> <p><u>TIRE PRESSURE MANAGEMENT</u> 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 six (6) 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>CHROME LUG NUT COVERS</u> Chrome lug nut covers shall be supplied on front and rear wheels.</p> <p><u>MUD FLAPS</u> Mud flaps shall be installed behind the rear wheels of the apparatus.</p> <p><u>WHEEL CHOCKS</u> 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> There shall be one (1) pair of Ziamatic, 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 beneath side compartments.</p> <p><u>ANTI-LOCK BRAKE SYSTEM</u> The vehicle shall be equipped with a Wabco 4S4M, anti-lock braking system. The ABS shall provide a four (4) channel anti-lock braking control on both the front and rear wheels. A</p> | | |

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| <p>digitally controlled system that utilizes microprocessor technology shall control the anti-lock braking system. Each wheel shall be monitored by the system. When any particular wheel begins to lockup, a signal is shall be sent to the control unit. This control unit then shall 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.</p> <p><u>AUTOMATIC TRACTION CONTROL</u></p> <p>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.</p> <p>A "mud/snow" 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.</p> <p><u>BRAKES</u></p> <p>The service brake system shall be full air type. The brake system shall be certified, third party inspected, for improved stopping distance.</p> <p>The front brakes shall be Knorr/Bendix disc type with a 17.00" ventilated rotor for improved stopping distance.</p> <p>The rear brakes shall be Meritor™ 16.50" x 8.63" cam operated with automatic slack adjusters.</p> <p><u>AIR COMPRESSOR, BRAKE SYSTEM</u></p> <p>The air compressor shall be a Bendix®, Model BA-921, with 15.80 cubic feet per minute output at 1,250 rpm.</p> <p><u>BRAKE SYSTEM</u></p> <p>The brake system shall include:</p> <ul style="list-style-type: none"> • Bendix® dual brake treadle valve with vinyl covered foot surface • Heated automatic moisture ejector on air dryer • Total air system capacity of 5,198 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 | | |

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| Yes | No |

- 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, 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)

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 WABCO System Saver 1200 with 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 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 mounted ahead of crew cab door at driver's side 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 coupling shall also be provided with the loose equipment.

ENGINE

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

Make: Detroit Diesel or equivalent

Model: DD13

Power: 500 hp at 1800 rpm

Torque: 1650 lb-ft at 1200 rpm

Governed Speed: 2080 rpm

Emissions Level: EPA 2013

Fuel: Diesel

Specification

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| | Yes | No |
| <p>Cylinders: Six (6)</p> <p>Displacement: 781 cubic inches (12.8L)</p> <p>Starter: Delco 39MT</p> <p>Fuel Filters: Dual cartridge style with check valve, water separator, and water in fuel sensor</p> <p>Coolant Filter: Cartridge style with shut off valves on the supply and return line.</p> <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>Certification shall be provided with bid that Engine Manufacturer has approved engine installation, including cooling system, and operation at full power rating.</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 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> | | |

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| Yes | No |

ENGINE AIR INTAKE

The air intake with ember separator shall be mounted on the driver side of the apparatus, with the intake located on the contoured fiberglass cab front. The intake shall be covered with a bright finish panel. The ember separator is designed to prevent road dirt and recirculating hot air from entering the engine.

The ember separator shall be easily accessible by tilting the cab.

EXHAUST SYSTEM

The exhaust system shall include a diesel particulate filter (DPF) and a selective catalytic reduction (SCR) device to meet current EPA standards. The exhaust system shall be stainless steel from the turbo to the inlet of the SCR device and shall be 5.00" in diameter. An insulation wrap shall be provided on all exhaust pipes between the turbo and SCR to minimize the transfer of heat to the cab. The exhaust shall terminate horizontally ahead of the passenger 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.

RADIATOR

The radiator and the complete cooling system shall meet or exceed NFPA and engine manufacturer cooling system standards.

For maximum cooling performance and corrosion resistance, the entire radiator core shall be constructed of long life aluminum alloy. The core shall be a serpentine design made of aluminum fins brazed to aluminum tubes. The tubes shall be brazed to aluminum headers. No solder joints or leaded material of any kind shall be acceptable in the core assembly. Supply and return tanks shall be made of glass-reinforced nylon or aluminum and shall be crimped on to the core assembly using header tabs and a compression gasket to complete the radiator core assembly. The radiator shall be compatible with commercial antifreeze solutions.

The radiator shall be mounted in parallel with the charge air cooler to avoid drawing preheated air from the charge cooler through the radiator, thus creating efficiencies in cooling performance. The radiator and charge air cooler shall be mounted within a steel framework to complete the cooling module. The cooling module shall have a minimum total frontal area of 1310 square inches. The cooling module shall be mounted in such a manner as to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven ground. The cooling module shall be isolated from the chassis frame rails with rubber isolators.

The radiator shall utilize a remote mounted deaeration/expansion tank. For visual coolant level inspection, the deaeration/expansion tank shall have a built-in sight glass. The deaeration/expansion tank shall be equipped with a 15 psi pressure relief cap.

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| <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>A fan shall be mounted directly to the cooling package and within a molded shroud to minimize the required fan tip clearances and to optimize airflow efficiencies and cooling performance. Shields or baffles shall be provided to prevent recirculation of hot air to the inlet side of the radiator.</p> <p>The fan shall be driven by a serpentine belt drive system mounted directly to the cooling module. The belt drive system shall include an input hub, a heavy duty fan clutch, and a 10 rib K-Section Poly V belt with automatic tensioner. The input hub shall be driven off the engine crank damper pulley utilizing a Spicer 1310 Series driveshaft.</p> <p><u>COOLANT LINES</u></p> <p>Silicone hoses shall be used for all engine/heater 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 75 gallon fuel tank shall be provided and mounted at rear of chassis. The tank construction shall be explained by the manufacture. The manufacture shall how they minimize corrosion. (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 diesel exhaust fluid (DEF) tank of a minimum of 4.5 gallon 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> | | |

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| <p>A fill inlet shall be located on the driver's side of the body and be covered with a hinged, spring loaded, polished stainless steel door that is marked "Diesel Exhaust Fluid Only".</p> <p>The tank shall meet the engine manufacturer's requirement for 10 percent expansion space in the event of tank freezing.</p> <p>The tank shall include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.</p> <p><u>FUEL COOLER</u></p> <p>An air to fuel cooler shall be installed in the engine fuel return line.</p> <p><u>TRANSMISSION</u></p> <p>An Allison 5th generation, model EVS 4000P, electronic, torque converting, automatic transmission shall be provided.</p> <p>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.</p> <p>Two (2) PTO openings shall be located on left side and top of converter housing (positions 8 o'clock and 1 o'clock).</p> <p>A transmission temperature gauge with red light and buzzer shall be installed on the cab instrument panel.</p> <p><u>TRANSMISSION SHIFTER</u></p> <p>A six (6)-speed push button shift module with the 4 + 2 "Mode" button shall be mounted to right of driver on console. Shift position indicator shall be indirectly lit for after dark operation.</p> <p>The Allison shifter shall be a "double-digit" display model.</p> <p>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.</p> <p><u>TRANSMISSION COOLER</u></p> <p>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></p> <p>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> | | |

Specification

Bidder
Complies

Yes No

A splined slip joint shall be provided in each driveshaft. The slip joint shall be coated with Glidecoat® or equivalent.

STEERING

Dual Sheppard, Model M110, steering gears, with integral heavy-duty power steering, shall be provided. For reduced system temperatures, the power steering shall incorporate an air to oil cooler and an Eaton, Model VN20F, hydraulic pump with integral pressure and flow control. All power steering lines shall have wire braded lines with crimped fittings.

A tilt and telescopic steering column shall be provided to improve fit for a broader range of driver configurations.

STEERING WHEEL

The steering wheel shall be 18.00" in diameter, have tilting and telescoping capabilities, and a 4-spoke design.

LOGO AND CUSTOMER DESIGNATION ON DASH

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.

The first row of text shall be: E V F D

The second row of text shall be: ENGINE-TANK

The third row of text shall be: 243

MUD FLAPS

Heavy-duty black rubber mud flaps shall be installed on the cab behind the front wheels.

AUTOMATIC CHASSIS LUBRICATION

A Vogel Automatic Lubrication System shall be provided. The lubrication shall be supplied while the vehicle ignition switch is active to allow a uniform application of grease to the locations listed. The electronic control unit that forms part of the system shall activate the pump after an adjustable interval time. The unit shall control and monitor pump operation and report any faults via an indicator light on the driver's dashboard of the cab.

The lubrication system reservoir, which requires a 15.00" wide x 14.50" high x 6.25" deep mounting area, shall be located inside right pump panel on the apparatus.

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| | Yes | No |
| <p><u>BUMPER</u></p> <p>A one (1) piece bumper manufactured from .25" formed steel with a .38" bend radius shall be provided. The bumper shall be a minimum of 10.00" high with a 1.50" top and bottom flange, and shall extend 22.00" from the face of the cab. The bumper shall be 95.28" wide with 45 degree corners. The bumper shall be metal finished and painted job color.</p> <p>To provide adequate support strength, the bumper shall be mounted directly to the front of the C channel frame. The frame shall be a bolted modular extension frame constructed of 50,000 psi tensile steel.</p> <p><u>GRAVEL PAN</u></p> <p>A gravel pan, constructed of bright aluminum treadplate, shall be furnished between the bumper and the cab face. The pan shall be properly supported from the underside to prevent flexing and vibration.</p> <p><u>TOW HOOKS</u></p> <p>Two (2) chromed steel tow hooks shall be installed under the bumper and attached to the front frame members.</p> <p>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>HOSE TRAY (CENTER)</u></p> <p>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 125' of 1.75" double jacket cotton-polyester hose.</p> <p>Black rubber grating shall be provided at the bottom of the tray. Drain holes are also provided.</p> <p><u>HOSE TRAY COVER</u></p> <p>A bright aluminum treadplate cover shall be provided over the one (1) hose tray. The cover shall be raised 2.00" above the gravel pan.</p> <p>The cover shall be attached with a stainless steel hinge and located center front bumper hose tray.</p> <p>A lift and turn latch shall secure the cover in the closed position and a pneumatic stay arm shall hold the cover in the open position.</p> <p><u>HOSE TRAY (RIGHT SIDE)</u></p> <p>A hose tray shall be placed in the right side of the extended bumper.</p> | | |

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| | Yes | No |
| <p>The tray shall have a capacity of 20' of 5.00" double jacket cotton-polyester hose.</p> <p>Black rubber grating shall be provided at the bottom of the tray. Drain holes shall be provided.</p> <p><u>HOSE TRAY COVER</u></p> <p>A black vinyl D&S Custom Cover™ shall be provided located over the right front bumper hose tray hose tray in the front bumper. The vinyl cover shall be permanently attached at the forward edge of the tray and by Shock Cord fasteners at the rear.</p> <p><u>HOSE TRAY LIPS</u></p> <p>The each front bumper tray hose trays shall be provided with raised lips above the deck plate.</p> <p>The raised lips shall be a minimum of 2" and constructed of aluminum treadplate.</p> <p>The top edge of the raised lips shall have aluminum rod, welded around the perimeter.</p> <p>A quantity of two (2) hose trays shall be included.</p> <p><u>PROTECTIVE COATING - FRONT BUMPER</u></p> <p>Protective black Polyurea texture coating shall be provided on the outside exterior of the top front bumper flange. It shall not be applied on the underside of the flange.</p> <p><u>SIGHT RODS</u></p> <p>Two (2) Bores, Model 848-211, lighted sight rods shall be mounted to the outside corners of the front bumper extension. The rods shall be polished stainless steel.</p> <p><u>OFF ROAD LIGHTS</u></p> <p>Two (2) PIAA model 5296 off-road lights shall be provided at the front of the vehicle. The lights shall be mounted in a protected location (such as within the front bumper) that permits maximum illumination coverage. A stone guard shall be provided to protect the lights from debris.</p> <p><u>CAB</u></p> <p>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.</p> <p>For reasons of structural integrity and enhanced occupant protection, the cab shall be of heavy duty design. The bidder shall fully describe how their cab is constructed. This information shall include the number and size of vertical structural members, the joining process and general location. Describe the firewall, cab floor and engine tunnel, including thickness, cross supports,</p> | | |

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| | Yes | No |
| <p>windshield supports and flooring supports. The description should further describe the insulation, both temperature and sound, provide in the cab area.</p> <p>Cab shall be approximately 96.00" wide, with an overall height (from the cab roof to the ground) of approximately 109.50". The crew cab section shall have a 12.00" raised roof, with an overall cab height of approximately 121.50". The overall height listed shall be calculated based on a truck configuration with the lowest suspension weight ratings, 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 raised crew cab shall provide a minimum crew cab floor to headliner dimension of 70.00".</p> <p>The driver shall have a flat floor area measuring a minimum of 24.50" wide (door to engine tunnel) and 28.00" long (front to seat riser). The officer shall have a flat floor area measuring a minimum of 23.00" wide and 21.50" long.</p> <p>The dimension from the back edge of the steering column to the driver's seat back (seat in rearmost position) shall be a minimum of 30.00".</p> <p>The crew cab floor shall measure 43.25" from rear wall to rear facing seat ledge.</p> <p>The back side of the engine tunnel shall measure 59.50" to the rear wall.</p> <p>Crew cab shall be of the totally enclosed design, with access doors constructed in the same manner as the front cab doors.</p> <p>Cab and crew cab shall be designed to optimize room and allow complete visual and audio communications between all fire fighters.</p> <p>Cab shall be a full tilt design, allowing easy maintenance of the engine compartment. The engine shall be accessible when the cab is tilted and shall also be removable when the cab is tilted.</p> <p>Provisions for checking the engine and transmission oil shall be provided on the engine tunnel and must be accessible without tilting the cab.</p> <p>Cab shall be isolated from the chassis inputs by four (4) rubber load cushions.</p> <p>A contoured molded fiberglass housing shall be installed on the front of the cab. The housing shall be painted to match the cab. A contoured aluminum grille, headlight bezel and wrap around band consisting of three (3) separate bright finished sections shall be installed on the front of the housing.</p> | | |

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| <p>A logo shall be affixed permanently to the grille housing.</p> <p>A contoured molded fiberglass "eyebrow" trim assembly shall be installed at the front roof line above the windshield. The eyebrow shall be painted to match the cab roof. The marker lights shall be recessed into the eyebrow.</p> <p><u>ENGINE TUNNEL</u></p> <p>The engine tunnel shall be constructed out of a minimum of .188" aluminum and shall be tapered at the top to allow for more driver and passenger elbow room.</p> <p>The engine tunnel inside the cab shall not exceed 20.00" from the cab floor to the top of the engine tunnel.</p> <p>The width of the engine tunnel inside the cab shall not exceed 36.00" on the top tapered surface and 43.00" at the floor area.</p> <p>The engine tunnel shall also taper and narrow towards the rear as it extends into the crew cab area. The width of the engine tunnel on the top tapered surface at the rear shall not exceed 30.50", therefore providing optimum room for the fire fighters seated in the crew cab rear facing seats.</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 series 1900 pamphlet.</p> <p><u>FENDER LINERS</u></p> <p>Circular inner fender liners in the wheel wells shall be provided.</p> <p><u>WINDSHIELD</u></p> <p>A large curved, safety glass windshield shall provide over 4,100 square inches of clear viewing area for enhanced visibility.</p> <p>The cab windshield shall be installed utilizing modern automotive techniques, which include bonding to the cab sheet metal with a urethane adhesive, and then trimmed in rubber.</p> <p>Economical windshield replacement glass shall be readily available.</p> <p><u>WINDSHIELD WIPERS</u></p> <p>Electric windshield wipers shall be provided that meet FMVSS and SAE requirements. One (1) control shall operate both wipers. The wiper control shall be two (2) speed (high and low) and feature an intermittent control. The control shall also have a "return to park" provision (toward center of cab). The wipers shall have a pantographic design for covering a large sweeping area.</p> <p>Each wiper shall be equipped with a washer that is actuated by the wiper control.</p> | | |

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| Yes | No |

Wash reservoir shall be able to be filled without raising the cab.

CAB REAR WALL EXTERIOR COVERING

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.

CAB LIFT

A hydraulic cab lift system shall be provided consisting of an electric powered hydraulic pump, dual lift cylinders, and necessary hoses and valves.

The hydraulic pump shall have a manual override for backup in the event of electrical failure.

Lift controls shall be on a panel located on the pump panel or front area of the body in a convenient location.

The cab shall be capable of tilting 41.5 degrees to accommodate engine maintenance and removal.

Cab shall be locked down by a two (2)-point automatic spring-loaded hook mechanism that actuates after the cab has been lowered.

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.

A redundant mechanical stay arm shall automatically be engaged once the cab has been fully raised. Before lowering the cab, this device must be disengaged using the stay arm control located near the cab raise/lower switch.

Cab Lift Interlock

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.

DOOR JAMB SCUFFPLATES

All cab door jambs shall be furnished with a polished stainless steel scuffplate, mounted on the striker side of the jamb.

SIDE OF CAB MOLDING

Chrome molding shall be provided on both sides of cab.

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| | Yes | No |
| <p><u>MIRRORS</u> A Moto Mirror-Plus polished mirror, 7.62" x 13.50" flat glass and a 6.62" x 6.25" convex glass shall be mounted on each side of the front cab doors. Driver and passenger side mirrors shall be heated and adjustable with remote control convenient to the driver.</p> <p><u>CONVEX MIRRORS</u> A 6.00" diameter round convex mirror shall be installed below each west coast mirror head.</p> <p><u>CAB DOORS</u> Cab doors shall be approximately 32.00" wide x 61.00" high.</p> <p>Crew cab doors shall be approximately 32.00" wide x 70.00" high and shall be located on the side of the cab.</p> <p>Cab and crew cab doors shall be equipped with automotive type rubber, continuous perimeter bulb seal on the door opening to ensure a weather tight fit.</p> <p>Cab doors shall be constructed of aluminum with a double pan design.</p> <p>The upper area of each door shall be contoured into the roof and include a contoured tinted window feature that provides better visibility on the interior and to the exterior of the cab.</p> <p>Flush mounted, chrome plated paddle type door handles shall be provided on the interior and exterior cab and crew cab doors.</p> <p>The cab doors shall be provided with interior locks as required by FMVSS 206. The locks shall include exterior keyed locks to prevent locking occupants out of the cab. A plunger shall actuate the locks.</p> <p>The door hinges shall be stainless steel piano type with a .25" pin.</p> <p><u>DOOR PANELS</u> The inner cab door panels shall be constructed out of brushed stainless steel. The panels shall extend from the bottom of the door to 12.00" above the floor line.</p> <p><u>ELECTRIC OPERATED CAB DOOR WINDOWS</u> All four (4) cab doors shall be equipped with electric operated windows with flush mounted automotive style switches.</p> <p>The driver's side lower instrument panel shall also have three (3) controls for officer's door window and both crew cab door windows.</p> | | |

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| | Yes | No |
| <p><u>CAB STEPS, POWER (PREFERED)</u></p> <p>Cab entrance steps shall be enclosed and protected from the elements, They shall automatically drop down when the door is opened and rise up when the door is closed. Both cab step assemblies shall be of simplistic and identical design.</p> <p>The steps shall be operated by a switch (air spool valve) on the cab doorframe, which is connected to an air cylinder, that activates both the up and down operation of the steps.</p> <p>A dedicated air supply tank shall be furnished for the step air system, to assure an adequate air supply for the up and down activation. To reduce the effects of corrosion, the air tank shall be mounted with stainless steel brackets (No exception for those that supply a power step).</p> <p>Each step, when in the stored position, shall be totally enclosed to protect the mechanisms from road debris and moisture.</p> <p>Each step assembly shall be designed in a three (3)-step arrangement, with each step spaced no more than 16.00" apart, providing easy cab entry and egress.</p> <p>Each step surface shall be a minimum of 160 square inches.</p> <p>The step surface shall be constructed out of a non-slip material that shall also be self-draining.</p> <p>A slip-resistant handrail shall be provided adjacent to each cab door opening to assist during cab ingress and egress.</p> <p><u>AUXILIARY AIR COMPRESSOR</u></p> <p>An auxiliary air compressor shall be furnished to supply air for the cab step system. The air compressor shall be a 12-volt DC and wired directly to the batteries. The compressor shall have a rating of .5 CFM at 100 psi. The compressor shall insure fully automatic step operation at all times.</p> <p><u>FENDER CROWNS</u></p> <p>Stainless steel fender crowns shall be installed at the cab wheel openings. The fender crowns shall have a radius outside corner that allows the fender crown to extend beyond the side wall of the front tires and also allow the crew cab doors to open fully.</p> <p><u>CREW CAB WINDOWS</u></p> <p>On each side of the crew cab, a window with tinted glass shall be provided. The window shall be in two (2) sections with the lower section sliding to provide added ventilation in the crew cab. The upper section shall be a fixed window. The lower sliding window assembly shall be approximately 16.00" wide x 12.00" high. The upper fixed window shall be approximately 16.00" wide x 20.00" high.</p> | | |

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| | Yes | No |
| <p><u>WINDOW TINT</u></p> <p>Crew cab windows shall be tinted with 8 percent light transmission tint (shall block 92 percent of visible light). The following windows are included:</p> <ul style="list-style-type: none"> • Crew cab side windows • Crew cab door, roll-up windows • Top fixed window in crew cab doors • All windows in raised roof (If applicable) <p><u>CAB INTERIOR</u></p> <p>The cab instrument panel shall be padded and covered with 46 ounce, leather grain vinyl, resistant to oil, grease and mildew.</p> <p>The door panels shall be covered with a high impact ABS plastic.</p> <p>The cab dash fascias shall be a wrap-around design to provide easy access of controls and shall be constructed out of high impact ABS plastic.</p> <p>The 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 provide easy access for servicing electrical wiring or for other maintenance needs without removing the entire unit.</p> <p><u>CAB INTERIOR UPHOLSTERY</u></p> <p>The cab interior upholstery shall be dark silver gray.</p> <p><u>CAB INTERIOR PAINT</u></p> <p>The cab interior metal surfaces shall be painted gray, vinyl texture paint.</p> <p><u>CAB FLOOR</u></p> <p>The cab and crew cab flooring shall be covered with heavy-duty rubber matting.</p> <p><u>CAB HEATER</u></p> <p>There shall be a 40,000 BTU heater in the cab located below the right side cab dash. The heater/defroster ventilation shall be built into the design of the cab dash instrument panel. The heater ducts shall be vented in a manner to provide heat directed towards the officer and the driver. The defroster ducts shall be designed to provide maximum defrosting capabilities for the windshield. Adjustable defroster louvers shall be provided for directing airflow to the side cab door windows.</p> | | |

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| | Yes | No |
| <p>Heater/defroster controls shall be located on the cab dash within easy reach of the driver.</p> <p><u>CREW CAB HEATER</u> An auxiliary heater with 50,000 BTU shall be provided inside the crew cab. The heater shall have a 3-speed blower with the temperature controls located adjacent to the heater.</p> <p>The heater shall be mounted in the seat riser.</p> <p><u>AIR CONDITIONING</u> A high performance, customized air conditioning system shall be furnished inside the cab and crew cab. A 19.10 cubic inch compressor shall be installed on the engine.</p> <p>The air conditioning systems shall be capable of cooling the average cab temperature from 100 degrees Fahrenheit to 75 degrees Fahrenheit within 30 minutes at 50 percent relative humidity. 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.</p> <p>A roof mounted condenser with a BTU rating sufficient to meet and exceed the performance specification, shall be installed on the cab roof. Mounting the condenser below the cab or body would reduce the performance of the system and shall not be acceptable.</p> <p>Two (2) evaporator units shall be installed in the cab, one (1) in the cab dash, just to the front of the officer, and one (1) in the crew cab, mounted to the ceiling. The evaporator units shall have an adequate BTU rating to meet the performance specifications.</p> <p>Adjustable air outlets shall be strategically located on the evaporator cover per the following:</p> <ul style="list-style-type: none"> • Two (2) shall be in the driver's side dash • Two (2) shall be in the officers side dash • Four (4) shall be directed towards the crew cab area <p>The air conditioner refrigerant shall be R-134A, installed by a certified technician.</p> <p>The air conditioner shall be controlled by a single electronic control panel. For ease of operation, the control panel shall include variable adjustment for temperature and fan control and be conveniently located on the dash in clear view of the driver. The control panel shall include robust levers for both fan speed and temperature adjustment.</p> <p><u>INTERIOR CAB INSULATION</u> The cab and crew cab walls shall be insulated with 1.50" insulation to reduce heat transfer into the cab.</p> <p>The insulation shall be covered with a vinyl liner or a metal panel painted to match the interior.</p> | | |

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| | Yes | No |
| <p><u>WINDOW DEFROST FAN</u></p> <p>A window defrost fan shall be mounted on the ceiling of the cab, located on the driver's side.</p> <p>A window defrost fan shall be mounted on the ceiling of the cab, located on the passenger side.</p> <p><u>SUN VISORS</u></p> <p>Two (2) smoked Lexan™ sun visors 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 a polished stainless steel bracket provided to help secure each sun visor in the stowed position.</p> <p><u>GRAB HANDLE</u></p> <p>A black rubber covered grab handle shall be mounted on the lower portion of the driver's side and passenger's side cab entrances to assist in entering the cab. The grab handle shall be securely mounted to the post area.</p> <p><u>ENGINE COMPARTMENT LIGHT</u></p> <p>An engine compartment light shall be installed under the engine hood, of which the switch is an integral part. Light shall have a .125" diameter weep hole in its lens to prevent moisture retention.</p> <p><u>MAP BOX</u></p> <p>A map box with four (4) bins, open from top, shall be installed. The map box shall be divided into four (4) equal bins, each being 12.5" wide, 3" high, and 12" deep. The map box shall be constructed of .125" aluminum and shall be painted to match the cab interior.</p> <p>The map box shall be mounted atop the engine cover in designated location.</p> <p>There shall be one (1) Velcro® strap provided for the engine cover mounted map box.</p> <p><u>CAB SAFETY SYSTEM</u></p> <p>The cab shall be provided with a safety system designed to protect occupants in the event of a side roll or frontal impact, and shall include the following:</p> <ul style="list-style-type: none"> • A supplemental restraint system (SRS) sensor shall be installed on a structural cab member behind the instrument panel. The SRS sensor shall perform real time diagnostics of all critical subsystems and shall record sensory inputs immediately before and during a side roll or frontal impact event. • A slave SRS sensor shall be installed in the cab to provide capacity for all seating positions. | | |

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| <ul style="list-style-type: none"> • A fault-indicating light shall be provided on the vehicle's instrument panel allowing the driver to monitor the operational status of the SRS system. • A driver side front air bag shall be mounted in the steering wheel and shall be designed to protect the head and upper torso of the occupant, when used in combination with the 3-point seat belt. • A passenger side knee bolster air bag shall be mounted in the modesty panel below the dash panel and shall be designed to protect the legs of the occupant, when used in combination with the 3-point seat belt. • Air curtains shall be provided in the outboard bolster of outboard seat backs to provide a cushion between occupant and the cab wall. • Suspension seats shall be provided with devices to retract them to the lowest travel position during a side roll or frontal impact event. • Seat belts shall be provided with pre-tensioners to remove slack from the seat belt during a side roll or frontal impact event. <p><u>FRONTAL IMPACT PROTECTION</u></p> <p>The SRS system shall provide protection during a frontal or oblique impact event. The system shall activate when the vehicle decelerates at a predetermined G force known to cause injury to the occupants. The cab and chassis shall have been subjected, via third party test facility, to a crash impact during frontal and oblique impact testing. Testing included all major chassis and cab components such as mounting straps for fuel and air tanks, suspension mounts, front suspension components, rear suspensions components, frame rail cross members, engine and transmission and their mounts, pump house and mounts, frame extensions and body mounts. The testing provided configuration specific information used to optimize the timing for firing the safety restraint system. The sensor shall activate the pyrotechnic devices when the correct crash algorithm, wave form, is detected (no exception).</p> <p>The SRS system shall deploy the following components in the event of a frontal or oblique impact event:</p> <ul style="list-style-type: none"> • Driver side front air bag • Passenger side knee bolster air bag • Air curtains mounted in the outboard bolster of outboard seat backs • Suspension seats shall be retracted to the lowest travel position • Seat belts shall be pre-tensioned to firmly hold the occupant in place | | |

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| <p><u>SIDE ROLL PROTECTION</u></p> <p>The SRS system shall provide protection during a fast or slow 90 degree roll to the side, in which the vehicle comes to rest on its side. The system shall analyze the vehicle's angle and rate of roll to determine the optimal activation of the advanced occupant restraints.</p> <p>The SRS system shall deploy the following components in the event of a side roll:</p> <ul style="list-style-type: none"> • Air curtains mounted in the outboard bolster of outboard seat backs • Suspension seats shall be retracted to the lowest travel position • Seat belts shall be pre-tensioned to firmly hold the occupant in place <p><u>INTERIOR PERSONNEL PROTECTION INFORMATION</u></p> <p>The importance of Firefighter Safety cannot be overstressed. To insure the highest levels of personnel protection and reliability, the following requirements apply to any Frontal Occupant Protection (Air Bag safety Restraint) and/or Side Roll Occupant Protection system proposed.</p> <p style="padding-left: 40px;">Manufacturer shall provide details describing how long they have offered for sale and performed installations in this custom chassis of the frontal and side roll protection devices proposed.</p> <p style="padding-left: 40px;">Manufacturer shall provide details of how many frontal and side roll protection systems have been delivered and currently operating in the Fire Service in the United States in the chassis and of the type proposed.</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 electric controls to adjust the rake (15 degrees), height (1.12" travel) and horizontal (7.75" travel) position. Electric controls shall be located below the forward part of the seat cushion. To provide flexibility for multiple driver configurations, the seat shall have a reclining back, adjustable from 20 degrees back to 45 degrees forward. Providing for maximum comfort, the seat back shall be a high back style with manual lumbar adjustment lever, for lower back support, and shall include minimum 7.50" deep side bolster pads for maximum support. The lumbar adjustment lever shall be easily located at the lower outboard position of the seat cushion. For optimal comfort, the seat shall be provided with 17.00" deep dual density foam cushions designed with EVC (elastomeric vibration control).</p> <p>The seat shall include the following features incorporated into the side roll protection system:</p> | | |

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| | Yes | No |
| <ul style="list-style-type: none"> • Side air curtain shall be mounted integral to the outboard bolster of the seat back. The air curtain shall be covered by a decorative panel when in the stowed position. • A suspension seat safety system shall be included. When activated in the event of a side roll, this system shall pretension the seat belt and retract the seat to its lowest travel position. <p>The seat shall be furnished with a 3-point, shoulder type seat belt. To provide quick, easy use for occupants wearing bunker gear, the seat belt shall have a minimum 120.00" shoulder length and 55.00" lap length. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p><u>OFFICER SEAT</u></p> <p>A seat shall be provided in the cab for the passenger. The seat 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).</p> <p>The manual horizontal control shall be a towel-bar style located below the forward part of the seat cushion. For optimal comfort, the seat shall be provided with 17.00" deep dual density foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat 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 belted.</p> <p>The seat back shall be an SCBA back style with 7.5 degree fixed recline angle, and shall include minimum 4.50" wide x 7.50" deep side bolster pads for maximum support. 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 include the following features incorporated into the side roll protection system.</p> <p>Side air curtain shall be mounted integral to the outboard bolster of the seat back. The air curtain shall be covered by a decorative panel when in the stowed position.</p> <p>A suspension seat safety system shall be included. When activated, this system shall pretension the seat belt and then retract the seat to its lowest travel position.</p> <p>The seat shall be furnished with a three-point, shoulder type seat belt. To provide quick, easy use for occupants wearing bunker gear, the seat belt shall have a minimum 120.00" shoulder length and 55.00" lap length. The seat belt tongue shall be stored at waist position for quick</p> | | |

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| | Yes | No |
| <p>application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p><u>REAR FACING DRIVER SIDE OUTBOARD SEAT</u></p> <p>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 17.00" deep dual density foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle. It shall activate an alarm indicating a seat is occupied but not buckled.</p> <p>The seat back shall be an SCBA back style with 7.50 degree fixed recline angle, and shall include minimum 4.50" wide x 7.50" deep side bolster pads for maximum support. 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 include the following features incorporated into the side roll protection system.</p> <p>Side air curtain shall be mounted integral to the outboard bolster of the seat back. The air curtain shall be covered by a decorative panel when in the stowed position.</p> <p>A seat safety system shall be included. When activated this system shall pretension the seat belt around the occupant to firmly hold them in place in the event of a side roll.</p> <p>The seat shall be furnished with a three (3)-point, shoulder type seat belt. To provide quick, easy use for occupants wearing bunker gear, the seat belt shall have a minimum 120.00" shoulder length and 55.00" lap length. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p><u>REAR FACING PASSENGER SIDE OUTBOARD SEAT</u></p> <p>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 17.00" deep dual density foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat 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> | | |

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| Yes | No |

The seat back shall be an SCBA back style with 7.50 degree fixed recline angle, and shall include minimum 4.50" wide x 7.50" deep side bolster pads for maximum support. 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 include the following features incorporated into the side roll protection system.

Side air curtain shall be mounted integral to the outboard bolster of the seat back. The air curtain shall be covered by a decorative panel when in the stowed position.

A seat safety system shall be included. When activated this system shall pretension the seat belt and firmly hold the occupant in the event of a side roll.

The seat shall be furnished with a three (3)-point, shoulder type seat belt. To provide quick, easy use for occupants wearing bunker gear, the seat belt shall have a minimum 120.00" shoulder length and 55.00" lap length. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.

FORWARD FACING CENTER SEATS

There shall be two (2) forward facing seats provided at the center position in the crew cab. To provide improved ride comfort, and maximize accessibility to the crew cab, the seats shall be provided with 15.00" deep foam cushions, and the seat backs shall be provided with 0 degree fixed recline angle. 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.

The seat backs shall be an SCBA back style. 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 include the following feature incorporated into the side roll protection system.

A seat safety system shall be included. When activated, this system shall pretension the seat belts around the occupants to firmly hold them in place in the event of a side roll.

The seats shall be furnished with three (3)-point, shoulder type seat belts. To provide quick, easy use for occupants wearing bunker gear, the seat belts shall have a minimum 130.00" shoulder length and 55.00" lap length. The seat buckle and tongue shall be stored at waist position for

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| | Yes | No |
| <p>quick application by the seat occupant. The buckle receptacle shall be provided with a flexible tether that shall hold the receptacle upright, while allowing movement to optimize accessibility. The seat belts shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.</p> <p><u>SEAT UPHOLSTERY</u> All seat upholstery shall be gray heavy duty material designed for use in the Fire Service.</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 seating positions in the cab and crew cab shall have red seat belts.</p> <p>The belts shall also include the Ready Reach® D-loop assembly to the shoulder belt system. The Ready Reach feature adds an extender arm to the D-loop location placing the D-loop in a closer, easier to reach location.</p> <p><u>SHOULDER HARNESS HEIGHT ADJUSTMENT</u> All seating positions furnished with 3-point shoulder type seat belts shall include a height adjustment. This adjustment shall optimize the belts effectiveness and comfort for the seated firefighter.</p> <p><u>SEAT BELT MONITORING ON COLOR DISPLAY</u> A seat belt monitoring screen shall be provided on the color display. The system shall be capable of monitoring up to ten (10) seating positions in the cab with green and red seating icons illuminated as follows:</p> <ul style="list-style-type: none"> • Seat Occupied & Buckled = Green • Seat Occupied & Unbuckled = Red • No Occupant & Buckled = Red • No Occupant & Unbuckled = Not Illuminated | | |

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| Yes | No |

The seat belt monitoring screen shall become active on the color display when:

- The park brake is released:
 - and there is any occupant seated but not buckled or any belt buckled without an occupant;
 - and there are no other Do Not Move Truck conditions present. As soon as all Do Not Move Truck conditions are cleared, the seat belt monitoring screen shall be deactivated.

The seat belt monitoring screen shall be manually selected anytime the Command Zone, color display is powered.

AUDIBLE ALARM

The seat belt monitoring screen shall be accompanied by an audible alarm that will activate when a red seat icon condition exists and the parking brake is released.

HELMET STORAGE, PROVIDED BY FIRE DEPARTMENT

NFPA 1901, 2009 edition, section 14.1.8.4.1 requires a location for helmet storage be provided.

There is no helmet storage on the apparatus as manufactured. The fire department shall provide a location for storage of helmets.

CAB DOME LIGHTS

There shall be four (4) Whelen #70CREGCS, LED dome lights with black bezels provided. Two (2) lights shall be mounted in cab, one each above the inside shoulder of the driver and officer, and two (2) lights shall be mounted in crew cab, one (1) on each side.

The color of the LED's shall be red and white.

The white LED's shall be controlled by the door switches and the lens switch.

The color LED's shall be controlled by the lens switch.

OVERHEAD MAP LIGHTS

There shall be two (2) white halogen, square adjustable map lights installed in the cab:

- One (1) overhead in front of the driving position.
- One (1) overhead in front of the passenger's position.

Each light shall include a switch on the light housing.

The light switches shall be connected directly to the battery switched power.

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| | Yes | No |
| <p><u>MAP LIGHT</u></p> <p>There shall be one (1) Federal Littlite® LED map light provided in the cab and located in front of officer seat. Each map light shall have an on/off switch with a 18.00" long flexible neck that exits the top of the chassis mount. The map light wiring shall exit from the side of the chassis mount.</p> <p>Each light shall be provided with red and white LEDs.</p> <p>The light switch shall be connected directly to the battery switched power.</p> <p><u>CAB SPOTLIGHT</u></p> <p>There shall be two (2) Golight/RadioRay®, Model 20**4, white LED spotlights located on the cab roof, one each side. The spotlights shall be mounted on a painted pedestal.</p> <p>These lights may be load managed when the parking brake is applied.</p> <p><u>SPOTLIGHT CONTROLLER</u></p> <p>There shall be one (1) wired dash mounted remote provided for each spotlight.</p> <p><u>SPOTLIGHT CONTROLLER LOCATIONS</u></p> <p>The remotes to control the spotlights shall be located one (1) within reach of the driver and one (1) within reach of the officer.</p> <p><u>HAND HELD LIGHT</u></p> <p>There shall be six (6) Streamlight, Fire Vulcan, Model #44451, hand lights provided with a vehicle mount with 12VDC direct wire charging rack and quick release buckle strap mounted as directed.</p> <p>Each light housing shall be orange in color and be provided with a C4, LED and two (2) "ultra-bright blue tail light LEDs". The tail light LEDs shall have a dual mode of blinking or steady.</p> <p><u>CAB INSTRUMENTATION</u></p> <p>The cab instrument panel shall include gauges, telltale indicator lamps, an LCD display, 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> | | |

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| | Yes | No |
| <p><u>GAUGES</u></p> <p>The gauge panel shall include the following ten (10) gauges with black bezels to monitor vehicle performance:</p> <p>Voltmeter gauge (volts):</p> <p style="padding-left: 40px;">Low volts (11.8 VDC)</p> <p style="padding-left: 40px;">Amber caution indicator on the information center with intermittent alarm</p> <p style="padding-left: 40px;">Amber check gauge light on indicator light display</p> <p>High volts (15 VDC)</p> <p style="padding-left: 40px;">Amber caution indicator on the information center with intermittent alarm</p> <p style="padding-left: 40px;">Amber check gauge light on indicator light display</p> <p>Very low volts (11.3 VDC)</p> <p style="padding-left: 40px;">Red warning indicator on the information center with a steady alarm</p> <p style="padding-left: 40px;">Amber check gauge light on indicator light display</p> <p>Very high volts (16 VDC)</p> <p style="padding-left: 40px;">Red warning indicator on the information center with a steady tone alarm</p> <p style="padding-left: 40px;">Amber check gauge light on indicator light display</p> <p>Engine Tachometer (RPM)</p> <p>Speedometer MPH</p> <p>Fuel level gauge (Empty - Full in fractions):</p> <p style="padding-left: 40px;">Low fuel (1/8 full)</p> <p style="padding-left: 40px;">Amber caution indicator on the information center with intermittent alarm</p> <p style="padding-left: 40px;">Amber check gauge light on indicator light display</p> <p>Very low fuel (1/32 full)</p> <p style="padding-left: 40px;">Red warning indicator on the information center with steady tone alarm</p> <p style="padding-left: 40px;">Amber check gauge light on indicator light display</p> | | |

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| | Yes | No |
| <p>Engine Oil pressure Gauge (PSI):</p> <ul style="list-style-type: none"> Low oil pressure to activate engine warning lights and alarms Red caution indicator on the information center with steady alarm Amber check gauge light on indicator light display <p>Front Air Pressure Gauges (PSI):</p> <ul style="list-style-type: none"> Low air pressure to activate warning lights and alarm Red warning indicator on the information center with steady alarm Amber check gauge light on indicator light display <p>Rear Air Pressure Gauges (PSI):</p> <ul style="list-style-type: none"> Low air pressure to activate warning lights and alarm Red warning indicator on the information center with steady alarm Amber check gauge light on indicator light display <p>Transmission Oil Temperature Gauge (Fahrenheit)</p> <ul style="list-style-type: none"> High transmission oil temperature activates warning lights and alarm Amber warning indicator on the information center with intermittent alarm Amber check gauge light on indicator light display <p>Engine Coolant Temperature Gauge (Fahrenheit):</p> <ul style="list-style-type: none"> High engine temperature activates an engine warning light and alarms Amber caution indicator on the information center with intermittent alarm Amber check gauge light on indicator light display <p>Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions):</p> <ul style="list-style-type: none"> Low fluid (1/8 full) Amber telltale light on indicator light display | | |

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| | Yes | No |
| <p><u>INDICATOR LAMPS</u></p> <p>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.</p> <p>The following amber telltale lamps shall be present:</p> <p>Low coolant</p> <p>Trac cntl (traction control)</p> <p>Check engine</p> <p>Check trans (check transmission)</p> <p>Air rest (air restriction)</p> <p>Check Gauges</p> <p>DPF (engine diesel particulate filter regeneration)</p> <p>HET (engine high exhaust temperature)</p> <p>ABS (antilock brake system)</p> <p>MIL (engine emissions system malfunction indicator lamp)</p> <p>Regen inhibit (engine emissions regeneration inhibit)</p> <p>Trans temp (transmission temperature)</p> <p>SRS (supplemental restraint system) fault</p> <p>DEF (low diesel exhaust fluid level)</p> <p>The following red telltale lamps shall be present:</p> <p>Seat belt</p> <p>Parking brake</p> <p>Stop engine</p> <p>The following green telltale lamps shall be present:</p> <p>Left turn</p> | | |

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| | Yes | No |
| Right turn | | |
| Battery on | | |
| The following blue telltale lamps shall be present: | | |
| High beam | | |
| <u>ALARMS</u> | | |
| Audible steady tone warning alarm: A steady audible tone alarm shall be provided whenever a warning message is present. | | |
| Audible pulsing tone caution alarm: A pulsing audible tone alarm (chime/chirp) shall be provided whenever a caution message is present without a warning message being present. | | |
| Any active audible alarm shall be able to be silenced by holding the ignition switch at the top position for three (3) to five (5) seconds. For improved safety, silenced audible alarms shall intermittently chirp every 30 seconds until the alarm condition no longer exists. The intermittent chirp shall act as a reminder to the operator that a caution or warning condition still exists. Any new warning or caution condition shall enable the steady or pulsing tones respectively. | | |
| <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 at initial power-up to ensure proper performance. | | |
| <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. | | |
| 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. | | |
| Panel backlighting intensity control switch: A three (3)-position momentary rocker switch shall be provided. The first switch position decreases the panel backlighting intensity to a minimum level as the switch is held. The second switch position is the default position that does not affect the backlighting intensity. The third switch position increases the panel backlighting to a maximum level as the switch is held. | | |

Specification

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| Yes | No |

Ignition switch: A three (3)-position maintained/momentary rocker switch shall be provided. The first switch position shall deactivate vehicle ignition. The second switch position shall activate vehicle ignition. The third momentary position shall disable the Command Zone audible alarm if held for three (3) to five (5) seconds.

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.

Hazard switch shall be incorporated into the steering column.

Heater and defroster controls.

Turn signal arm: A self-canceling turn signal with high beam headlight and windshield wiper/washer controls shall be provided. The windshield wiper control shall have high, low, and intermittent modes.

Parking brake control: An air actuated push/pull park brake control.

Chassis horn control: Activation of the chassis horn control shall be provided through the center of the steering wheel.

CUSTOM SWITCH PANELS

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 three (3) switch panels in the overhead console on the driver's side, up to four (4) switch panels in the engine tunnel console facing the driver, and up to three (3) switch panels in the overhead console on the officer's side. All switches have backlit labels for low light applications.

High idle engagement switch: A momentary membrane switch with integral indicator lamp shall be provided. The switch shall activate and deactivate the high idle function when pressed and released. 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.

"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.

Diesel particulate filter regeneration switch.

Diesel particulate filter regeneration inhibit switch.

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| | Yes | No |
| <p><u>DIAGNOSTIC PANEL</u></p> <p>A diagnostic panel shall be accessible while standing on the ground and 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 engine and ABS systems to provide blink codes should a problem exist. The diagnostic panel shall include the following:</p> <p>Engine diagnostic port</p> <p>Transmission diagnostic port</p> <p>ABS diagnostic port</p> <p>SRS diagnostic port</p> <p>Command Zone USB diagnostic port</p> <p>Engine diagnostic switch (blink codes flashed on check engine telltale indicator)</p> <p>ABS diagnostic switch (blink codes flashed on ABS telltale indicator)</p> <p><u>CAB LCD DISPLAY</u></p> <p>A display shall be mounted in the driver side of the cab within easy reach of the driver.</p> <p>Rack down shall be shown on the display (no telltale indicator lamp).</p> <p><u>AIR RESTRICTION INDICATOR</u></p> <p>A high air restriction warning indicator light (electronic) shall be provided.</p> <p><u>"DO NOT MOVE APPARATUS" INDICATOR</u></p> <p>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."</p> <p>The same circuit that activates the Do Not Move Apparatus indicator shall activate a pulsing alarm when the parking brake is released.</p> <p><u>MESSAGES, DISPLAY, DO NOT MOVE TRUCK</u></p> <p>There shall be 14 possible messages displayed on the "Do Not Move Truck" screen, of the information center. The messages shall designate the specified location of what open doors or other applicable options are not in the stowed position (parking brake has been released).</p> <p>The following messages shall be displayed:</p> | | |

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| | Yes | No |
| DS Cab Door Open (Driver Side Cab Door Open) | | |
| PS Cab Door Open (Passenger's Side Cab Door Open) | | |
| DS Crew Cab Door Open (Driver Side Crew Cab Door Open) | | |
| PS Crew Cab Door Open (Passenger's Side Crew Cab Door Open) | | |
| DS Body Door Open (Driver Side Body Door Open) | | |
| PS Body Door Open (Passenger's Side Body Door Open) | | |
| Rear Body Door Open | | |
| Ladder Rack Not Stowed | | |
| Deck Gun Not Stowed | | |
| Any other device that is opened, extended, or deployed that creates a hazard or is likely to cause damage to the apparatus if the apparatus is moved, shall show up in the flashing warning box after the parking brake is disengaged. | | |
| <p><u>SWITCH PANELS</u></p> <p>The emergency light switch panel shall have a master switch for ease of use plus individual switches for selective control. Each switch panel shall contain eight (8) membrane-type switches each rated for one million (1,000,000) cycles. Panels containing less than eight (8) switch assignments shall include non-functioning black appliqué. Documentation shall be provided by the manufacturer indicating the rated cycle life of the switches.</p> <p>The switch panels shall be located in the overhead position above the windshield on the driver side overhead to allow for easy access. The switches shall be membrane-type and also act as an integral indicator light. For quick, visual indication the entire surface of the switch shall be illuminated white whenever back lighting is activated and illuminated red whenever the switch is active. For ease of use, a two (2)-ply, scratch resistant laser engraved Gravoply label indicating the use of each switch shall be placed in the center of the switch. The label shall allow light to pass through the letters for ease of use in low light conditions.</p> <p><u>SWITCH, SECOND EMERGENCY MASTER</u></p> <p>A second Emergency Master "on/off" switch shall be provided. The switch shall be in addition to the standard emergency master switch. Switch shall be located in the cab instrument panel on the officers side.</p> | | |

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| | Yes | No |
| <p><u>SPARE CIRCUIT</u></p> <p>There shall be two (2) pair of wires, including a positive and a negative, installed on the apparatus.</p> <p>The above wires shall have the following features:</p> <ul style="list-style-type: none">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 in the designated body compartments.Termination shall be with heat shrinkable butt splicing.Wires shall be sized to 125% of the protection. <p>This circuits may be load managed when the parking brake is set.</p> | | |
| <p><u>SPARE CIRCUIT</u></p> <p>There shall be three (3) pair of wires, including a positive and a negative, installed on the apparatus.</p> <p>The above wires shall have the following features:</p> <ul style="list-style-type: none">The positive wire shall be connected directly to the battery powerThe negative wire shall be connected to groundWires shall be protected to 15 amps at 12 volts DCPower and ground shall terminate in front of officer.Termination shall be with 15 amp, power point plug with rubber coverWires shall be sized to 125 percent of the protection <p>The circuits may be load managed when the parking brake is set.</p> | | |
| <p><u>SPARE CIRCUIT</u></p> <p>There shall be four (4) pair of wires, including a positive and a negative, installed on the apparatus.</p> <p>The above wires shall have the following features:</p> <ul style="list-style-type: none">The positive wire shall be connected directly to the ignition switched powerThe negative wire shall be connected to groundWires shall be protected to 20 amps at 12 volts DCPower and ground shall terminate designated location for two way radiosTermination shall be with heat shrinkable butt splicingWires shall be sized to 125% of the protection | | |

| Bidder Complies | |
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| Yes | No |

This circuits may be load managed when the parking brake is set.

INFORMATION CENTER

An information center employing a minimum 7.00" diagonal color LCD display shall be encased in an ABS plastic housing.

The information center shall have the following specifications:

- Operate in temperatures from -40 to 185 degrees Fahrenheit
- Weather resistant user interface switches
- Vibration resistant
- Sunlight Readable

OPERATION

The information center shall be designed for easy operation for everyday use and be customizable to our requirements.

All button must have labels specific to the information being viewed.

GENERAL SCREEN DESIGN

Where possible, background colors shall be used to provide "At a Glance" vehicle information. If information provided on a screen is within acceptable limits, a green background shall be used.

If a caution or warning situation arises the following shall occur:

- An amber background/text color shall indicate a caution condition
- A red background/text color shall indicate a warning condition
- Exterior Ambient Temperature
- Time 24 hour mode
- The information center shall utilize an "Alert Center" to display text messages for audible alarm tones. The text messages shall be written to identify the item(s) causing the audible alarm to sound. If more than one (1) text message occurs, the messages shall cycle every second until the problem(s) have been resolved. The background color for the "Alert Center" shall change to indicate the severity of the "warning" message. If a warning and a caution condition occur simultaneously, the red background color shall be shown for all alert center messages.
- A label for each button shall exist. The label shall indicate the function for each active button for each screen. Buttons that are not utilized on specific screens shall have a button label with no text.

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| | Yes | No |
| <p><u>PAGE SCREENS</u></p> <p>The Information center shall include the following screens:</p> <ul style="list-style-type: none"> • Load Manager Screen <ul style="list-style-type: none"> ○ A list of items to be load managed shall be provided. The list shall provide: <ul style="list-style-type: none"> ○ Description of the load • Individual Load Shed Priority Screen <ul style="list-style-type: none"> ○ The lower the priority number the earlier the device shall be shed should a low voltage condition occur • Load Status Screen <ul style="list-style-type: none"> ○ The screen shall indicate if a load has been shed (disabled) or not shed. ○ "At a Glance" color features are utilized on this screen • Do Not Move Truck Screen <ul style="list-style-type: none"> ○ The screen shall indicate the approximate location and type of item that is open or is not stowed for travel. The actual status of the following devices shall be indicated: <ul style="list-style-type: none"> ▪ Driver Side Cab Door ▪ Passenger's Side Cab Door ▪ Driver Side Crew Cab Door ▪ Passenger's Side Crew Cab Door ▪ Driver Side Body Doors ▪ Passenger's Side Body Doors ▪ Rear Body Door ▪ Ladder Rack ▪ Deck Gun • Chassis Information Screen <ul style="list-style-type: none"> ○ Engine RPM ○ Fuel Level ○ Battery Voltage ○ Engine Coolant Temperature ○ Engine Oil Pressure ○ "At a Glance" color features are utilized on this screen • Active Alarms List <ul style="list-style-type: none"> ○ This screen shall show a list of all active text messages. The list items text shall match the text messages shown in the "Alert Center". The date and time the message occurred is displayed with each message in the list. <p><u>MENU SCREENS</u></p> <p>The following screens shall be available through the Menu button:</p> | | |

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| | Yes | No |
| <ul style="list-style-type: none"> • System Information <ul style="list-style-type: none"> ○ Battery Volts ○ Pump Hours ○ Transmission Oil Temperature ○ Pump Engaged ○ Engine Coolant Level ○ Engine Oil Level ○ Oil level shall only be shown when the engine is not running ○ Power Steering Level • Display Brightness <ul style="list-style-type: none"> ○ Brightness <ul style="list-style-type: none"> ▪ Increase and decrease ▪ Default setting button • Configure Video Mode <ul style="list-style-type: none"> ○ Set Video Contrast ○ Set Video Color ○ Set Video Tint • Startup Screen <ul style="list-style-type: none"> ○ Choose the screen that shall be active at vehicle power-up • Date & Time <ul style="list-style-type: none"> ○ 12 or 24 hour format <ul style="list-style-type: none"> ▪ Set time and date • View Active Alarms <ul style="list-style-type: none"> ○ Shows a list of all active alarms <ul style="list-style-type: none"> ▪ Date and time of the occurrence is shown with each alarm ○ Silence alarms <ul style="list-style-type: none"> ▪ All alarms are silenced • System Diagnostics <ul style="list-style-type: none"> ○ Module type and ID number ○ Module version • Module diagnostics information <ul style="list-style-type: none"> ○ Input or output number ○ Circuit number connected to that input or output ○ Circuit name (item connected to the circuit) ○ Status of the input or output ○ Power and Constant Current module diagnostic information <p>Button functions and button labels may change with each screen.</p> | | |

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| | Yes | No |
| <p><u>VEHICLE DATA RECORDER</u></p> <p>A vehicle data recorder (VDR) shall be provided. The VDR shall be capable of reading and storing vehicle information.</p> <p>The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A CD provided with the apparatus shall include the programming to download the information from the VDR. A USB cable can be used to connect the VDR to a laptop to retrieve required information.</p> <p>The vehicle data recorder shall be capable of recording the following data via hardwired and/or CAN inputs:</p> <ul style="list-style-type: none"> • 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 (7-12 Seating Capacity) • Seat Belt Buckled Status - Yes/No by Position (7-12 Seating Capacity) • Master Optical Warning Device Switch - On/Off • Time - 24 Hour Time • Date - Year/Month/Day <p><u>INTERCOM SYSTEM</u></p> <p>A Setcom, Model 900, wireless intercom system shall be provided. The driver position shall have wireless base station and radio interfaced headset with charging drop. The officer position shall have wired station with radio interfaced headset. There shall be four (4) wired stations with intercom only headsets located at two (2) forward facing seats and two (2) rearward facing seats.</p> <p>The following components shall be supplied with this system:</p> <ul style="list-style-type: none"> • One (1) IM-900 intercom/radio mixer • One (1) CSB-900W3 Kit, Wireless radio transmit headset with base • Two (2) CSB-901R-1 Headset • One (1) CSB-900L-1 Headset • Two (2) CSB-901L-1 Headset • One (1) CSB-900R-1 Headset • Three (3) ES-900-10 Extension Station • One (1) PS-900-40 Pump Panel Station | | |

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| | Yes | No |
| <ul style="list-style-type: none"> • One (1) JS-900-20 Jump Seat Station • One (1) JS-901-20 Jump Seat Station • One (1) PRAC-WKP Cable • One (1) 25-0735-10 Cable • One (1) RCB-18KO Cable • One (1) RCB-18KT Cable <p><u>DUAL RADIO INTERCOM INTERFACE</u></p> <p>A Setcom, Model RSM-902, radio select module and two (2) RIM-900-BAL radio audio level adjust boxes shall be provided.</p> <p>The radio equipment to be used by the customer shall be:</p> <p style="padding-left: 40px;">Radio #1 to be Kenwood Radio #2 to be Kenwood</p> <p><u>RADIO ANTENNA MOUNT</u></p> <p>There shall be six (6) standard 1.125", 18 thread antenna-mounting bases installed on cab and crew cab roof with high efficiency, low loss, coaxial cables routed to the radio box. A weatherproof cap shall be installed on the mount.</p> <p><u>VEHICLE FORWARD CAMERA AND RECORDING SYSTEM</u></p> <p>There shall be a forward facing color vehicle camera system to record a minimum of 120 hours that is transferable by fast USB to a computer. This system shall operate anytime the vehicle is in drive. A manual override is to be provided that allows the system to be turned on while parked. The system shall not be able to be disabled while in drive. The manufacture shall describe their system. Included on the video shall be the status of the warning lights, speed, location and braking.</p> <p><u>VEHICLE CAMERA SYSTEM</u></p> <p>There shall be a color vehicle camera system provided.</p> <p>There shall be color cameras located at the rear of the vehicle, as close to center as possible, and activated with the reverse signal. One (1) on the right side of the cab, activated with the right turn signal. One (1) on the left side of the cab, activated with the left turn signal. The camera images shall be displayed on the provided apparatus driver display. A wired remote shall be provided to manually select camera views. Audio from the rear camera shall be via an amplified speaker with volume control located behind the driver seat.</p> <p>Zone Defense components shall include:</p> | | |

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| | Yes | No |
| <ul style="list-style-type: none"> • One (1) CAM-313C color rear camera • CAM-313MS color side cameras as defined above • One (1) MUL-604 Multiplexer • One ZON354B Monitor conversion cable • All necessary cables <p><u>ELECTRICAL POWER CONTROL SYSTEM</u></p> <p>The primary power distribution location shall be described and be easily accessible for simplified maintenance and troubleshooting. Additional electrical distribution centers shall be provided throughout the vehicle to house the vehicle's electrical power, circuit protection, and control components. The electrical distribution centers shall be located strategically throughout the vehicle to minimize wire length. For ease of maintenance, all electrical distribution centers shall be easily accessible. All distribution centers containing fuses, circuit breakers and/or relays shall be accessible without the need for additional tools.</p> <p>Distribution centers located throughout the vehicle shall contain battery powered studs for customer installed equipment thus providing a lower cost of ownership.</p> <p>Circuit protection devices, which conform to SAE standards, shall be utilized to protect electrical circuits. All circuit protection devices shall be rated per NFPA requirements to prevent wire and component damage when subjected to extreme current overload. General protection circuit breakers shall be Type-I automatic reset (continuously resetting). When required, automotive type fuses shall be utilized to protect electronic equipment. Control relays and solenoid shall have a direct current rating of 125 percent of the maximum current for which the circuit is protected per NFPA.</p> <p><u>SOLID-STATE CONTROL SYSTEM</u></p> <p>A solid-state electronics based control system shall be utilized to achieve advanced operation and control of the vehicle components.</p> <p>A fully computerized vehicle network shall consist of electronic modules located near their point of use to reduce harness lengths and improve reliability. The control system shall comply with SAE J1939-11 recommended practices.</p> <p>The control system shall operate as a master/slave system whereas the main control module instructs all other system components. The system shall contain patented Mission Critical software that maintains critical vehicle operations in the unlikely event of a main controller error. The system shall utilize a Real Time Operating System (RTOS) fully compliant with OSEK/VDX™ specifications providing a lower cost of ownership.</p> | | |

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| | Yes | No |
| <p>For increased reliability and simplified use, the control system modules shall include the following attributes:</p> <p>Green LED indicator light for module power</p> <p>Red LED indicator light for network communication stability status</p> <p>Control system that self-tests continually throughout vehicle operation</p> <p>No moving parts due to transistor logic</p> <p>Software logic control for NFPA mandated safety interlocks and indicators</p> <p>Integrated electrical system load management without additional components</p> <p>Integrated electrical load sequencing system without additional components</p> <p>Customized control software to this vehicle's configuration</p> <p>Factory and field reprogrammable to accommodate changes to the vehicle's operating parameters</p> <p>USB connection to the main control module for troubleshooting and programming</p> <p>To assure long life and operation in a broad range of environmental conditions, the solid-state control system modules shall meet the following specifications:</p> <p>Module circuit board shall meet SAE J771 specifications</p> <p>Operating temperature from -40C to +70C</p> <p>Storage temperature from -40C to +70C</p> <p>Vibration to 50g</p> <p>IP67 rated enclosure</p> <p>Totally protected against dust</p> <p>Totally protected against the effect of temporary immersion between 15 centimeters and one (1) meter</p> <p>Operating voltage from eight (8) volts to 16 volts DC</p> <p>The main controller shall activate status indicators and audible alarms designed to provide warning of problems before they become critical.</p> | | |

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| | Yes | No |
| <p><u>CIRCUIT PROTECTION AND CONTROL DIAGRAM</u></p> <p>Copies of all job-specific, computer network input and output (I/O) connections shall be provided with each chassis.</p> <p>The sheets shall indicate the function of each module connection point, circuit protection information (where applicable), wire numbers, wire colors and load management information.</p> <p><u>ON-BOARD ADVANCED/VISUAL ELECTRICAL SYSTEM DIAGNOSTICS</u></p> <p>The on-board information center shall include the following diagnostic information:</p> <p>Text description of active warning or caution alarms</p> <p>Simplified warning indicators</p> <p>Amber caution light with intermittent alarm</p> <p>Red warning light with steady tone alarm</p> <p>All control system modules, with the exception of the main control module, shall contain on-board visual diagnostic LEDs that assist in troubleshooting. The LEDs shall be enclosed within the sealed, transparent module housing near the face of the module. One LED for each input or output shall be provided and shall illuminate whenever the respective input or output is active. Color coded labels within the modules shall encompass the LEDs for ease of identification. The LED indicator lights shall provide point of use information for reduced troubleshooting time without the need for an additional computer.</p> <p><u>ADVANCED DIAGNOSTICS</u></p> <p>An advanced, Windows-based, diagnostic software program shall be provided for this control system. The software shall provide troubleshooting tools to service technicians equipped with an IBM compatible computer.</p> <p>The service and maintenance software shall be easy to understand and use and have the ability to view system input/output (I/O) information.</p> <p><u>INDICATOR LIGHT AND ALARM PROVE-OUT SYSTEM</u></p> <p>A system shall be provided which automatically tests basic indicator lights and alarms located on the cab instrument panel.</p> <p><u>VOLTAGE MONITOR SYSTEM</u></p> <p>A voltage monitoring system shall be provided to indicate the status of the battery system connected to the vehicle's electrical load. The system shall provide visual and audible warning when the system voltage is below or above optimum levels.</p> | | |

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| | Yes | No |
| <p>The alarm shall activate if the system falls below 11.8 volts DC for more than two (2) minutes.</p> <p><u>DEDICATED RADIO EQUIPMENT CONNECTION POINTS</u></p> <p>There shall be four (4) studs provided in the primary power distribution center located on top of the engine tunnel for the two-way radio equipment.</p> <p>The studs shall consist of the following:</p> <p>12-volt 40-amp battery switched power</p> <p>12-volt 100-amp ground</p> <p>12-volt 60-amp ignition switched power</p> <p>2-volt 60-amp direct battery power</p> <p><u>ENHANCED SOFTWARE</u></p> <p>The solid-state control system shall include the following software enhancements:</p> <p>Cab and crew cab dome lights shall remain on for ten (10) seconds for improved visibility after the doors close. The dome lights shall dim after ten (10) seconds or immediately if the vehicle is put into gear.</p> <p>All perimeter lights and scene lights shall be deactivated when the parking brake is released.</p> <p>Cab and crew cab perimeter/step lights shall remain on for ten (10) seconds for improved visibility after the doors close. The perimeter/step lights shall dim after ten (10) seconds or immediately if the vehicle is put into gear.</p> <p><u>EMI/RFI PROTECTION</u></p> <p>To prevent erroneous signals from Crosstalk contamination and interference, the electrical system shall meet, at a minimum, SAE J551/2, thus reducing undesired electromagnetic and radio frequency emissions. An advanced electrical system shall be used to ensure radiated and conducted electromagnetic interference (EMI) or radio frequency interference (RFI) emissions are suppressed at their source.</p> <p>The apparatus shall have the ability to operate in the electromagnetic environment typically found in fire ground operations to ensure clean operations. The electrical system shall meet, without exceptions, electromagnetic susceptibility conforming to SAE J1113/25 Region 1, Class C EMR for 10KHz-1GHz to 100 Volts/Meter. The vehicle OEM, upon request, shall provide EMC test results from the original test vehicle and shall certify that the vehicle meets SAE J551/2 and SAE J1113/41 Region 1, Class 4 EMR for 15KHz-950MHz requirements.</p> | | |

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| | Yes | No |
| <p>EMI/RFI susceptibility shall be controlled by applying appropriate circuit designs and shielding. 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 HARNESS INSTALLATION</u></p> <p>To ensure rugged dependability, all 12-volt wiring harnesses installed by the apparatus manufacturer shall conform to the following specifications:</p> <p>SAE J1128 - Low tension primary cable</p> <p>SAE J1292 - Automobile, truck, truck-tractor, trailer and motor coach wiring</p> <p>SAE J163 - Low tension wiring and cable terminals and splice clips</p> <p>SAE J2202 - Heavy duty wiring systems for on-highway trucks</p> <p>NFPA 1901 - Standard for automotive fire apparatus</p> <p>FCR 571.302 - Flammability of interior materials for passenger cars, multipurpose passenger vehicles, trucks and buses (Title 49 - Transportation)</p> <p>SAE J1939 - Serial communications protocol</p> <p>SAE J2030 - Heavy-duty electrical connector performance standard</p> <p>SAE J2223 - Connections for on board vehicle electrical wiring harnesses</p> <p>NEC - National Electrical Code</p> <p>SAE J561 - Electrical terminals - Eyelet and spade type</p> <p>SAE J928 - Electrical terminals - Pin and receptacle type A</p> <p>FCR 571.108 - Federal Motor Vehicle Safety Standards Lamps, reflective devices, and associated equipment. (Title 49 - Transportation)</p> <p>Wiring shall be run in loom or conduit where exposed, and have grommets or other edge protection where wires pass through metal. Wiring shall be color, function and number coded. Wire colors shall be integral to each wire insulator and run the entire length of each wire. Harnessing containing multiple wires and uses a single wire color for all wires shall not be allowed. 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</p> | | |

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| | Yes | No |
| <p>automotive fluids. Electrical wiring and equipment shall be installed utilizing the following guidelines:</p> <p>(1)All wire ends not placed into connectors shall be sealed with a heat shrink end cap. Wires without a terminating connector or sealed end cap shall not be allowed.</p> <p>(2)All holes made in the roof shall be caulked with silicon (no exception). Large fender washers, liberally caulked, shall be used when fastening equipment to the underside of the cab roof.</p> <p>(3)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.</p> <p>(4)For low cost of ownership, electrical components designed to be removed for maintenance shall be quickly accessible. For ease of use, a coil of wire shall be provided behind the appliance to allow them to be pulled away from the mounting area for inspection and service work.</p> <p>(5)Corrosion preventative compound shall be applied to non-waterproof electrical connectors 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.</p> <p>(6)Any lights containing non-waterproof sockets in a weather-exposed area shall have corrosion preventative compound added to the socket terminal area.</p> <p>(7)All electrical terminals in exposed areas shall have DOW 1890 protective Coating applied completely over the metal portion of the terminal.</p> <p>(8)Rubber coated metal clamps shall be used to support wire harnessing and battery cables routed along the chassis frame rails.</p> <p>(9)Heat shields shall be used to protect harnessing in areas where high temperatures exist. Harnessing passing near the engine exhaust shall be protected by a heat shield.</p> <p>(10)All braided wire harnesses shall have a permanent label attached for easy identification of the harness part number and fabrication date.</p> <p>(11) All standard wiring entering or exiting the cab shall be routed through sealed bulkhead connectors to protect against water intrusion into the cab.</p> <p><u>BATTERY CABLE INSTALLATION</u> All 12-volt battery cables and battery cable harnessing installed by the apparatus manufacturer shall conform to the following requirements:</p> | | |

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| | Yes | No |
| <p>SAE J1127 - Battery Cable</p> <p>SAE J561 - Electrical terminals, eyelets and spade type</p> <p>SAE J562 - Nonmetallic loom</p> <p>SAE J836A - Automotive metallurgical joining</p> <p>SAE J1292 - Automotive truck, truck-tractor, trailer and motor coach wiring</p> <p>NFPA 1901 - Standard for automotive fire apparatus</p> <p>Battery cables and battery cable harnessing shall be installed utilizing the following guidelines:</p> <p>(1) All battery cables and battery harnesses shall have a permanent label attached for easy identification of the harness part number and fabrication date.</p> <p>(2) Splices shall not be allowed on battery cables or battery cable harnesses.</p> <p>(3) For ease of identification and simplified use, battery cables shall be color coded. All positive battery cables shall be red in color or wrapped in red loom the entire length of the cable. All negative battery cables shall be black in color.</p> <p>(4) For ease of identification, all positive battery cable isolated studs throughout the cab and chassis shall be red in color.</p> <p>(5) For increased reliability and reduced maintenance, all electrical buss bars located on the exterior of the apparatus shall be coated to prevent corrosion.</p> <p><u>ELECTRICAL COMPONENT INSTALLATION</u></p> <p>All lighting used on the apparatus shall be, at a minimum, a two (2) wire light grounded through a wired connection to the battery system. Lights using an apparatus metal structure for grounding shall not be allowed.</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. 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 six (6) 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 | | |

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| | Yes | No |
| <ul style="list-style-type: none"> • High cycle • Group 31 • Rating of 5700 CCA at 0 degrees Fahrenheit • -140 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> <p><u>BATTERY COMPARTMENTS</u></p> <p>Batteries shall be placed on non-corrosive mats and be stored in well-ventilated 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>BATTERY TRAYS</u></p> <p>Plastic battery trays with drain tubes shall be provided, for the batteries to sit in. The drain tubes shall extend below the chassis frame rails.</p> <p><u>JUMPER STUDS</u></p> <p>One (1) set of battery jumper studs with plastic color-coded covers shall be installed on the front side of battery box on the driver's side. This shall allow enough room for easy jumper cable access.</p> | | |

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| Yes | No |

BATTERY CHARGER

There shall be a Kussmaul Pump Plus 1000, Model 091-56-12-B1, 18 amp single output battery charger/air compressor system with internal battery saver shall be provided. A display bar graph indicating the state of charge shall be included.

The battery saver circuit shall be capable of supplying up to three (3) amps for external loads such as hand light or auxiliary radio batteries.

The 120-volt air compressor shall be installed to maintain the air system pressure when the vehicle is not in use.

The battery charger shall be wired to the AC shoreline inlet through an AC receptacle adjacent to this battery charger.

Battery charger/compressor shall be located in the crew cab seat riser.

The battery charger indicator shall be located in the designated area.

SHORELINE

There shall be one (1) 20 amp 120 volt AC straight blade inlet NEMA 5-20 with gray cover provided to operate the dedicated 120 volt AC circuits on the apparatus.

The shoreline shall be connected to battery conditioner and specified receptacles.

A mating connector body shall also be supplied with the loose equipment.

There shall be a label installed near the inlet that states the following:

- Line Voltage
- Current Rating (amps)
- Phase
- Frequency

The shoreline receptacle shall be located in the designated area.

SUB FEED CIRCUIT BREAKER BOX (SHORELINE)

A Cutler Hammer sub feed box shall be supplied to protect the on board circuits when an auxiliary power source is used.

The box shall be installed in the adjacent to main circuit breaker panel.

The sub feed box shall distribute power to specific circuits in the vehicle.

A directory for each breaker shall be provided adjacent to the circuit breaker panel.

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| | Yes | No |
| <p>Identification of circuits shall be done in a durable manner that provides years of service.</p> <p><u>AUTO TRANSFER SWITCH</u></p> <p>To protect either the generator or external power source from back feed, an automatic relay system shall be installed to switch the on line device between the generator and the external power source when it is connected for use.</p> <p>The transfer switch shall power designated 120 volt receptacles.</p> <p><u>ALTERNATOR</u></p> <p>A C.E. Niehoff, model C680-1, alternator shall be provided. It shall have a rated output current of 430 amp as measured by SAE method J56. Also, it shall have a custom three (3)-set point voltage regulator, manufactured by C. E. Niehoff. The alternator shall be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.</p> <p><u>ELECTRONIC LOAD MANAGER</u></p> <p>An electronic load management (ELM) system shall be provided that monitors the vehicles 12-volt electrical system, automatically reducing the electrical load in the event of a low voltage condition, and automatically restoring the shed electrical loads when a low voltage condition expires. This ensures the integrity of the electrical system.</p> <p>The system shall include the following features:</p> <p>System voltage monitoring.</p> <p>A shed load shall remain inactive for a minimum of five minutes to prevent the load from cycling on and off.</p> <p>Sixteen available electronic load shedding levels.</p> <p>Priority levels can be set for individual outputs.</p> <p>High Idle to not be controlled by the load manager.</p> <p>If enabled:</p> <p>"Load Man Hi-Idle On" shall display on the information center.</p> <p>Hi-Idle shall not activate until 30 seconds after engine start up.</p> <p>Individual switch "on" indicator to flash when the particular load has been shed.</p> <p>The information center indicates system voltage.</p> | | |

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| | Yes | No |
| <p>The information center includes a "Load Manager" screen indicating the following:</p> <p>Load managed items list, with priority levels and item condition.</p> <p>Individual load managed item condition:</p> <p>ON = not shed</p> <p>SHED = shed</p> <p><u>SEQUENCER</u></p> <p>A sequencer shall be provided that automatically activates and deactivates vehicle loads in a preset sequence thereby protecting the alternator from power surges. This sequencer operation shall allow a gradual increase or decrease in alternator output, rather than loading or dumping the entire 12 volt load to prolong the life of the alternator.</p> <p>Emergency light sequencing shall operate in conjunction with the emergency master light switch. When the emergency master switch is activated, the emergency lights shall be activated one by one at half second intervals. Sequenced emergency light switch indicators shall flash while waiting for activation.</p> <p>When the emergency master switch is deactivated, the sequencer shall deactivate the warning light loads in the reverse order.</p> <p>Sequencing of the following items shall also occur, in conjunction with the ignition switch, at half second intervals:</p> <p>Cab Heater and Air Conditioning</p> <p>Crew Cab Heater</p> <p>Crew Cab Air Conditioning</p> <p><u>HEADLIGHTS</u></p> <p>There shall be four (4) halogen HB5 replaceable round light assemblies mounted in the front chrome trim housing on each side of the cab grille:</p> <p>The outside light assemblies on each side shall contain a low/high headlight bulb.</p> <p>The inside halogen HB5 replaceable round light assemblies shall be used as daytime running lights and shall be activated with the following measures:</p> <ul style="list-style-type: none"> • Ignition switch turn on. • Parking brake released. | | |

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| Yes | No |

These lights shall be deactivated with any one of the following measures:

- Headlight switch is turned on.
- High-beam flash is turned on.
- Parking brake is applied.

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 the same color as the LED's.

CAB CLEARANCE/MARKER/ID LIGHTS

There shall be five (5) Grote, Model 47063, amber LED lights provided to indicate the presence and overall width of the vehicle in the following locations:

- Three (3) amber LED identification lights shall be installed in the center of the "eye brow" trim above the windshield.
- Two (2) amber clearance/marker lights shall be installed, one (1) on each outboard side of the "eye brow" trim above the windshield.

FRONT CAB SIDE CLEARANCE/MARKER LIGHTS

There shall be two (2) Truck-Lite, Model 19036Y, amber LED lights installed rear of the bumper, one (1) on each side of the cab.

The lights shall activate as clearance/marker lights with the headlight switch and 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

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| | Yes | No |
| <ul style="list-style-type: none"> • As near the top as practical • Red in color • To be visible from the rear • All at the same height <p>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:</p> <ul style="list-style-type: none"> • 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 <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 • Two (2) Whelen Model M6BUW, LED backup lights <p>The lights shall be provided with color lenses.</p> <p><u>LIGHTING BEZEL</u></p> <p>There shall be two (2) Whelen, Model M6FCV4P, four (4) place chromed ABS housings with vendor logos provided for the rear M6 series stop/tail, directional, back up, scene lights or warning lights.</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> | | |

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| Yes | No |

A white LED light shall illuminate the license plate. A polished stainless steel light shield shall be provided over the light that shall direct illumination downward, preventing white light to the rear.

BACK-UP ALARM

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.

MARKER LIGHTS

There shall be one (1) pair of amber and red, Britax, Model L427.203.L12, LED marker lights with rubber arm, located one each side at rear of body. The amber lens shall face the front and the red lens shall face the rear of the truck and be the most rearward marker light.

These lights shall be activated with the running lights of the vehicle.

CORNERING/SCENE LIGHTS

There shall be two (2) Whelen, Model 50C00WCR white 12 volt DC LED lights with chrome trim provided on the apparatus. One (1) light shall be provided on each side of the apparatus, below the height of the headlights one each side of cab or bumper extension.

The lights shall be activated when the battery switch is on, when the headlight switch is on and the respective directional light is activated.

The lights shall be deactivated when the directional light deactivates.

The 4-way flashers shall not activate these lights.

INTERMEDIATE LIGHT

There shall be one (1) pair, of Truck-Lite, Model 60115Y, amber, LED, turn signal, marker lights furnished, one (1) each side, horizontally in the rear fender panel.

A stainless steel trim shall be included with this installation.

CAB PERIMETER SCENE LIGHTS

There shall be four (4) Truck-Lite, Model 6060C, 12 volt DC white LED lights provided as step and perimeter illumination. Each light is an integral part of the inside door panels.

- One (1) LED light shall be installed under the driver's side cab arm rest.
- One (1) LED light shall be installed under the driver's side crew cab arm rest.
- One (1) LED light shall be installed under the passenger's side crew cab arm rest.

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| | Yes | No |
| <ul style="list-style-type: none"> • One (1) LED light shall be installed under the passenger's side cab arm rest. <p>The lights shall be activated when the battery switch is on and the respective door is open.</p> <p><u>BODY PERIMETER SCENE LIGHTS</u></p> <p>There shall be a total of four (4) Whelen model 20C0CDCR LED lights provided on the apparatus. Each light shall consist of a 4.00" weatherproof LED light, rubber mount, and pigtail kit.</p> <p>The lights shall be mounted in the following locations:</p> <ul style="list-style-type: none"> • Two (2) lights shall be under the rear step area. • One (1) light shall be on each side of the pump panel under the running boards. <p>The lighting shall be capable of providing illumination at a minimum level of two (2) foot-candles on ground areas, within 30.00" of the edge of the apparatus, in areas designed for personnel to climb onto the apparatus or descend from the apparatus to the ground level.</p> <p>The lights shall be activated by parking brake.</p> <p><u>STEP LIGHTS</u></p> <p>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.</p> <p>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.</p> <p>These step lights shall be actuated with the pump panel light switch.</p> <p>All other steps on the apparatus shall be illuminated per the current edition of NFPA 1901.</p> <p><u>12 VOLT LIGHTING</u></p> <p>There shall be one (1) Whelen Pioneer, Model PCP2, 12 volt LED combination spot/flood light provided on the front visor, centered.</p> <p>The painted parts of this light assembly to be white.</p> <p>The light shall be controlled by the following:</p> <ul style="list-style-type: none"> A switch at the driver's side switch panel. A switch at the passenger's side switch panel. | | |

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| <p>This light may be load managed when the parking brake is set.</p> <p><u>12 VOLT LIGHTING</u></p> <p>There shall be one (1) Whelen, Model PCPSM1*, 12 volt surface mounted LED combination spot/flood light located driver's side of cab. The lights shall be mounted with chrome flange.</p> <p>The light selected above shall be controlled by the following:</p> <ul style="list-style-type: none"> A switch at the driver's side switch panel Opening the driver's side cab or crew cab doors A switch at the passenger's side switch panel <p>This light may be load managed when the parking brake is set.</p> <p><u>12 VOLT LIGHTING</u></p> <p>There shall be one (1) Whelen, Model PCPSM1*, 12 volt surface mounted LED combination spot/flood light located on officer side of cab. The lights shall be mounted with chrome flange.</p> <p>The light selected above shall be controlled by the following:</p> <ul style="list-style-type: none"> A switch at the driver's side switch panel Opening the passenger's side cab or crew cab doors A switch at the passenger's side switch panel <p>This light may be load managed when the parking brake is set.</p> <p><u>12 VOLT LIGHTING</u></p> <p>There shall be two (2) Whelen, Model PCP2P, 12 volt LED combination spot/flood lights with Model, PBAPEDD, pedestal mounting brackets provided atop body, one each side.</p> <p>The painted parts of this light assembly to be red number 106.</p> <p>The lights selected above shall be controlled by the following:</p> <ul style="list-style-type: none"> A switch at the driver's side switch panel. A switch at the passenger's side switch panel. <p>These lights may be load managed when the parking brake is applied.</p> | | |

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| <p><u>12 VOLT LIGHTING</u></p> <p>There shall be two (2) Whelen, Model PCPSM1*, 12 volt surface mounted LED combination spot/flood light located one each side at rear as high as possible. The lights shall be mounted with chrome flange.</p> <p>The light selected above shall be controlled by the following:</p> <ul style="list-style-type: none"> A switch at the driver's side switch panel A switch at the passenger's side switch panel <p>These light may be load managed when the parking brake is set.</p> <p><u>DECK LIGHT</u></p> <p>There shall be one (1) Whelen®, Model PFB12C, LED flood light with swivel mount and chrome cover provided at the rear of the hose bed, on driver's side.</p> <p>The lights shall include a switch for on/off activation.</p> <p><u>LIGHTS BELOW HOSE BED COVER</u></p> <p>There shall be two (2) 63.00" LED lights provided below the aluminum hose bed cover and mounted on the cover one each side.</p> <p>The light shall be activated when the hose bed cover is raised.</p> <p><u>WORK AREA LIGHTS</u></p> <p>There shall be two (2) Whelen, Model 70K000CD, 35 watt 12 volt halogen scene lights with 15 degree angled brackets installed at the rear of the vehicle, under the tailboard, facing the rear.</p> <p>The lights shall be controlled by a switch at the driver's side switch panel.</p> <p><u>WATER TANK</u></p> <p>Booster tank shall have a capacity of 1000 gallons and be constructed of polypropylene plastic by United Plastic Fabricating, Incorporated.</p> <p>Tank joints and seams shall be nitrogen welded inside and out.</p> <p>Tank shall be baffled in accordance with NFPA Bulletin 1901 requirements.</p> <p>Baffles shall have vent openings at both the top and bottom to permit movement of air and water between compartments.</p> <p>Longitudinal partitions shall be constructed of .38" polypropylene plastic and shall extend from the bottom of the tank through the top cover to allow for positive welding.</p> | | |

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| <p>Transverse partitions shall extend from 4.00" off the bottom of the tank to the underside of the top cover.</p> <p>All partitions shall interlock and shall be welded to the tank bottom and sides.</p> <p>Tank top shall be constructed of .50" polypropylene. It shall be recessed .38" and shall be welded to the tank sides and the longitudinal partitions.</p> <p>Tank top shall be sufficiently supported to keep it rigid during fast filling conditions.</p> <p>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.</p> <p>A sump that is 8.00" long x 8.00" wide x 6.00" deep shall be provided at the bottom of the water tank.</p> <p>Sump shall include a drain plug and the tank outlet.</p> <p>Tank shall be installed in a fabricated cradle assembly constructed of structural steel.</p> <p>Sufficient crossmembers shall be provided to properly support bottom of tank. Crossmembers shall be constructed of steel bar channel or rectangular tubing.</p> <p>Tank shall "float" in cradle to avoid torsional stress caused by chassis frame flexing. Rubber cushions, .50" thick x 3.00" wide, shall be placed on all horizontal surfaces that the tank rests on.</p> <p>Stops or other provision shall be provided to prevent an empty tank from bouncing excessively while moving vehicle.</p> <p>Mounting system shall be approved by the tank manufacturer.</p> <p>Fill tower shall be constructed of .50" polypropylene and shall be a minimum of 8.00" wide x 14.00" long.</p> <p>Fill tower shall be furnished with a .25" thick polypropylene screen and a hinged cover.</p> <p>An overflow pipe, constructed of 4.00" schedule 40 polypropylene, shall be installed approximately halfway down the fill tower and extend through the water tank and exit to the rear of the rear axle.</p> <p>The water tank shall be extended to the rear of the truck, over the rear compartment.</p> | | |

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| <p><u>TANK CRADLE</u> The water tank shall be installed in a fabricated cradle assembly constructed of stainless steel. Sufficient crossmembers shall be provided to properly support bottom of tank. Crossmembers shall be constructed of stainless steel bar channel or rectangular tubing.</p> <p><u>DIRECT TANK FILL</u> There shall be one (1) - 2.50" gated external tank fill installed and properly labeled at the passenger's side pump panel.</p> <p>Piping, for the fill, shall be routed through the front wall of the tank and include a flow deflector to break up the stream of water entering the water tank.</p> <p>A 2.50" full flow ball valve with 2.50" piping and a 2.50" (F)NST chrome swivel shall be located at the inlet.</p> <p>The valve for the inlet shall be located outside the pump panel.</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>HOSE BED</u> The hose bed shall be fabricated of .125"-5052 aluminum with a nominal 38,000 psi tensile strength.</p> <p>Hose bed width shall be a minimum of 68.00" inside.</p> <p>Upper and rear edges of side panels shall have a double break for rigidity, a split tube finish shall not be acceptable.</p> <p>The upper inside area of the beavertails shall be covered with brushed stainless steel to prevent damage to painted surface when hose is removed.</p> <p>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.</p> <p>Hose bed shall accommodate 1500 feet of 5", 500 feet of 3", 250 feet of 2.5" and two lengths suction hose.</p> <p><u>HOSE BED DIVIDER</u> Two (2) adjustable hosebed dividers shall be furnished for separating hose.</p> | | |

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| | Yes | No |
| <p>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.</p> <p>Divider shall be fully adjustable by sliding in tracks, located at the front and rear of the hose bed.</p> <p>Divider shall be held in place by tightening bolts, at each end.</p> <p>Acorn nuts shall be installed on all bolts in the hose bed which have exposed threads.</p> <p><u>HOSE BED COVER</u></p> <p>A two (2) section hose bed cover, constructed of .125" bright aluminum treadplate shall be furnished. The cover shall be hinged with full length stainless steel piano hinge. The sides shall be slanted down with the center of the cover supported by a stationary bridgework support.</p> <p>The cover shall be reinforced so that it can support the weight of a man walking on the cover.</p> <p>If access to water tank fill tower is blocked by the hose bed cover, then a hinged door shall be provided in it so that tank may be filled without raising cover doors.</p> <p>Chrome grab handles and gas filled cylinders shall be provided to assist in opening and closing the cover. A handrail is to be provided at the rear, in the center of the support, to assist in opening the cover.</p> <p><u>HOSEBED END FLAP</u></p> <p>There shall be a black vinyl flap shall be installed on the rear of the hosebed.</p> <p>The vinyl flap shall have nylon tie down straps, with quick release thumb spring buckles. Fasnep model 207668 stainless steel buckles shall be attached to the flaps. The vinyl end skirt shall be installed directly to the hosebed frame.</p> <p>Rubber coated hooks and stainless steel footman loops shall secure the end skirt/bed cover to the main body.</p> <p><u>CHEVRON, HOSEBED COVER FLAP</u></p> <p>There shall be chevron striping located on the vinyl rear flap of the hosebed.</p> <p>The yellow chevrons shall be alternating with the color of the vinyl flap it is installed on.</p> <p>Each stripe shall be 6.00" in width.</p> <p><u>RUNNING BOARDS</u></p> <p>Running boards shall be fabricated of .125" bright aluminum treadplate.</p> | | |

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| | 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 20.00" deep in the center area and 4.00" deep to the rear of the side compartments. The tailboard shall be T-shaped. The 4.00" extension to the rear of the side compartments shall be angled up to prevent this area from being used as a stepping surface.</p> <p>The outboard sides of the tailboard shall be angled at 45 degrees beginning at the point where the body meets the tailboard at the forward outboard edge angling rearward to the rear edge of the tailboard.</p> <p>The exterior side 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 BAR</u></p> <p>A tow bar shall be installed under the tailboard at center of truck.</p> <p>Tow bar shall be fabricated of 1.00" CRS bar rolled into a 3.00" radius.</p> <p>Tow bar assembly shall be constructed of .38" structural angle. When force is applied to the bar, it shall be transmitted to the frame rail.</p> <p>Tow bar assembly shall be designed and positioned to allow up to a 30-degree upward angled pull of 17,000 lb, or a 20,000 lb straight horizontal pull in line with the centerline of the vehicle.</p> <p>Tow bar design shall have been fully tested and evaluated using strain gauge testing and finite element analysis techniques.</p> | | |

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| | Yes | No |
| <p><u>COMPARTMENTATION</u></p> <p>Body and compartments shall be fabricated of .125", 5052-H32 aluminum.</p> <p>Side compartments shall be an integral assembly with the rear fenders.</p> <p>Circular fender liners shall be provided for prevention of rust pockets and ease of maintenance.</p> <p>Compartment flooring shall be of the sweep out design with the floor higher than the compartment door lip.</p> <p>The compartment door opening shall be framed by flanging the edges in 1.75" and bending out again .75" to form an angle.</p> <p>Drip protection shall be provided above the doors by means of bright aluminum extrusion, formed bright aluminum treadplate or polished stainless steel.</p> <p>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.</p> <p>Side compartment covers shall be separate from the compartment tops.</p> <p>Front facing compartment walls shall be covered with bright aluminum treadplate.</p> <p>All screws and bolts which protrude into a compartment shall have acorn nuts on the ends to prevent injury.</p> <p><u>UNDERBODY SUPPORT SYSTEM</u></p> <p>Due to the severe loading requirements of this pumper a method of body and compartment support suitable for the intended load shall be provided.</p> <p>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.</p> <p>The support system shall include .375" thick steel vertical angle supports bolted to the chassis frame rails with .625" diameter bolts.</p> <p>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.</p> <p>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 compartment.</p> | | |

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| | 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 failsafe design and allow for all necessary movement in three (3) transitional and rotational modes.</p> <p>The neoprene isolators shall be installed in a modified V three (3)-point mounting pattern to reduce the natural flex of the chassis being transmitted to the body.</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>TESTING OF BODY DESIGN</u></p> <p>Body structural analysis shall be fully tested. Proven engineering and test techniques such as finite element analysis, stress coating and strain gauging shall be performed with special attention given to fatigue, life and structural integrity of the cab, body and substructure.</p> <p>Body shall be tested while loaded to its greatest in-service weight.</p> <p>The criteria used during the testing procedure shall include:</p> <ul style="list-style-type: none"> • Raising opposite corners of the vehicle tires 9.00" to simulate the twisting a truck may experience when driving over a curb. • Making a 90 degree turn, while driving at 20 mph to simulate aggressive driving conditions. • Driving the vehicle at 35 mph on a washboard road. • Driving the vehicle at 55 mph on a smooth road. • Accelerating the vehicle fully, until reaching the approximate speed of 45 mph on rough pavement. <p>Evidence of actual testing techniques shall be made available upon request.</p> | | |

**Bidder
Complies**

Yes No

COMPARTMENTATION, DRIVER'S SIDE

A full height, rollup door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 44.00" wide x 57.25" high x 25.88" deep in the lower 25.00" of the compartment and 12.00" deep in the remaining upper portion. The height of the compartment shall be measured from the compartment floor to the bottom edge of the door roll. The depth of the compartment shall be calculated with the compartment door closed.

The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 38.25" wide x 57.25" high.

Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.

A rollup door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 66.50" wide x 25.38" high x 12.00" deep. The height of the compartment shall be measured from the compartment floor to the bottom edge of the door roll. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 58.25" wide x 25.12" high.

Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.

A full height, rollup door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 47.50" wide x 58.25" high x 25.88" deep in the lower 26.00" of the compartment and 12.00" deep in the remaining upper portion. The height of the compartment shall be measured from the compartment floor to the bottom edge of the door roll. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 44.75" wide x 58.25" high.

Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.

COMPARTMENTATION, PASSENGER'S SIDE

A full height, rollup door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 44.00" wide x 58.25" high x 25.88" deep in the lower 26.00" of the compartment and 12.00" deep in the remaining upper portion. The height of the compartment shall be measured from the compartment floor to the bottom edge of the door roll. The depth of the compartment shall be calculated with the compartment door closed. The

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| <p>compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 38.25" wide x 58.25" high.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p>A rollup door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 66.50" wide x 25.38" high x 12.00" deep. The height of the compartment shall be measured from the compartment floor to the bottom edge of the door roll. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 58.25" wide x 25.12" high.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p>A full height, rollup door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 47.50" wide x 58.25" high x 25.88" deep in the lower 26.00" of the compartment and 12.00" deep in the remaining upper portion. The height of the compartment shall be measured from the compartment floor to the bottom edge of the door roll. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 44.75" wide x 58.25" high.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p><u>ROLLUP DOOR, SIDE COMPARTMENTS</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 A&A Manufacturing (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 plus 180 to minus 40 degrees Fahrenheit. Side, top and bottom seals shall be provided to resist ingress of dirt and weather and be made of Santoprene.</p> | | |

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| <p>All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from plus 300 to minus 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> <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>COMPARTMENTATION, REAR</u></p> <p>A rollup door compartment above the rear tailboard shall be provided.</p> <p>Interior dimensions of this compartment shall be 40.00" wide x 40.63" high x 25.88" deep in the lower 32.38" of height and 15.75" deep in the remaining upper portion. Depth of the compartment shall be calculated with the compartment door closed.</p> <p>A louvered, removable access panel shall be furnished on the back wall of the compartment.</p> <p>Rear compartment shall be open into the rear side compartments.</p> <p>Clear door opening of this compartment shall be 33.25" wide x 32.38" high.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p><u>ROLLUP DOOR, REAR COMPARTMENT</u></p> <p>There shall be a rear rollup door. The door shall be double faced aluminum construction, an anodized satin finish and manufactured by A&A Manufacturing (Gortite).</p> <p>Lath sections shall be an interlocking rib design and shall be individually replaceable without complete disassembly of door.</p> | | |

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| | Yes | No |
| <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 plus 180 to minus 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 plus 300 to minus 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>Door shall be constructed from an aluminum box section. The exterior surface of each slat shall be flat. The interior surface shall be concave to provide strength and prevent loose equipment from jamming the door from inside.</p> <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>DOOR GUARD</u></p> <p>Seven (7) compartment doors shall include an L-shaped guard designed to protect the bottom and interior side of the roll-up door from damage when in the retracted position and contain any water spray while the door is being opened. The guard shall be fabricated from stainless steel and installed each compartment door.</p> <p><u>PULL STRAP, DOORS</u></p> <p>A pull strap shall be provided for a total of six (6) compartment doors, located each side body compartment.</p> <p>A hook and loop closure shall be mounted on the inside of each roll door. A second hook and loop closure shall be permanently mounted to the nearest inside body wall attaching to the strap. This shall allow the strap to be retained inside the compartment while being closed and still allowing the door to open fully.</p> | | |

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| | Yes | No |
| <p><u>COMPARTMENT LIGHTING</u></p> <p>There shall be seven (7) compartments each with two (2) 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 each side and rear body compartment. Opening the compartment door shall automatically turn the compartment lighting on.</p> <p>Minimum compartment lighting level required is 4 Footcandles, that being twice the NFPA minimum requirement of 2 Footcandles.</p> <p><u>MOUNTING TRACKS</u></p> <p>There shall be seven (7) sets of tracks for mounting shelves in compartments as directed. These tracks shall be installed vertically to support the adjustable shelves, and shall be full height of the compartment. The tracks shall be unpainted with a natural finish.</p> <p><u>ADJUSTABLE SHELF</u></p> <p>There shall be eight (8) shelves provided. Each shelf shall be constructed of 0.188" aluminum with 2.00" high sides. Each shelf shall as wide and as deep as the compartment space shall allow.</p> <p>Each shelf shall have a brushed finish.</p> <p>Each shelf shall have a load capacity of 500 lb.</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 0.12" thick stamped plated brackets and bolts.</p> <p>The location shall be designated compartments.</p> <p><u>SLIDE-OUT ADJUSTABLE HEIGHT TRAY</u></p> <p>There shall be one (1) slide-out tray provided.</p> <p>Each tray shall have 2.00" high sides and a capacity rating of up to 250 lb in the extended position.</p> <p>Each tray shall be unpainted.</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> | | |

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| | Yes | No |
| <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 shall be located in designated compartment.</p> <p><u>SLIDE-OUT FLOOR MOUNTED TRAY</u></p> <p>There shall be four (4) floor mounted slide-out trays with 2.00" sides provided in designated compartments. Each tray shall be rated for up to 500lb in the extended position. The trays shall be constructed of a minimum .13" aluminum with welded corners. The finish shall be unpainted aluminum with a DA finish.</p> <p>There shall be two undermount-roller bearing type slides rated at 250lb each provided. The pair of slides shall have a safety factor rating of 2.</p> <p>To ensure years of dependable service, the slides shall be coated with a finish that is tested to withstand a minimum of 1,000 hours of salt spray per ASTM B117.</p> <p>To ensure years of easy operation, the slides shall require no more than a 50lb force for push-in or pull-out movement when fully loaded after having been subjected to a 40 hour vibration (shaker) test under full load. The vibration drive file shall have been generated from accelerometer data collected from a heavy truck chassis driven over rough gravel roads in an unloaded condition. Proof of compliance shall be provided upon request.</p> <p>Automatic locks shall be provided for both the "in" and "out" positions. The trip mechanism for the locks shall be located at the front of the tray for ease of use with a gloved hand.</p> <p><u>SWING OUT TOOLBOARD</u></p> <p>A swing out aluminum tool board shall be provided.</p> <p>It shall be a minimum of .188" thick with .20" diameter holes in a pegboard pattern with 1.00" centers between holes.</p> <p>A 1.00" x 1.00" aluminum tube frame shall be welded to the edge of the pegboard.</p> <p>The board shall be mounted on a pivoting device at the front of the compartment on the top and bottom to allow easy movement in and out of the compartment. The maximum tool load shall be 400 pounds.</p> <p>The board shall have positive lock in the stowed and extended position.</p> <p>The board shall be mounted stationary within the compartment.</p> | | |

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| | Yes | No |
| <p>There shall be one (1) tool board provided. The tool board shall be DA finished and installed in designated over wheel compartment.</p> <p><u>MATTING, COMPARTMENT FLOOR</u></p> <p>Turtle Tile compartment matting shall be provided in seven (7) locations on the compartment floors.</p> <p>The Turtle Tile shall be black and the leading edge of the matting shall include the beveled edge. The beveled edge shall be red.</p> <p><u>MATTING, COMPARTMENT SHELVING</u></p> <p>Turtle Tile compartment matting shall be provided in 13 additional locations. The locations are, each shelf and tray.</p> <p>The color of Turtle Tile shall be black.</p> <p><u>PARTITION, TRANSVERSE REAR COMPARTMENT</u></p> <p>Two (2) partitions shall be bolted in place to separate driver and passenger side rear compartments from the rear tailboard compartment.</p> <p><u>VERTICAL COMPARTMENT PARTITION</u></p> <p>One (1) partition shall be bolted in as directed. Each partition shall be the matching vertical height of the compartment. Partition shall be DA finished.</p> <p><u>ALUMINUM PEGBOARD</u></p> <p>Two (2) horizontally installed tracks, with .19" aluminum pegboard shall be installed on the back wall of one (1) compartment. Retainers shall be used to mount the pegboard to the tracks.</p> <p>The holes shall be .203" diameter, punched 1.00" on center. The pegboard shall be brushed finish. The pegboard shall be located designated compartment.</p> <p><u>RUB RAIL</u></p> <p>Bottom edge of the side and rear of the body compartments shall be trimmed with a bright aluminum extruded rub rail.</p> <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. These fender crowns must be wide enough to prevent splashing onto the body from the specified tires.</p> | | |

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| | Yes | No |
| <p>A rubber welting shall be provided between the body and the crown to seal the seam and restrict moisture from entering.</p> <p>A dielectric barrier shall be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.</p> <p><u>HARD SUCTION HOSE</u></p> <p>Two (2) lengths of 6.00" clear corrugated PVC hard suction hose, the maximum length of the hosebed, shall be provided. Equipped with a long handle female coupling on one (1) end and a rocker lug male coupling on the other end. Couplings shall be hard coated aluminum.</p> <p><u>HOSE TROUGHS</u></p> <p>Hard suction hose shall be carried in troughs, mounted side by side, inside the hosebed on the passenger side.</p> <p>Troughs shall be constructed of unpainted stainless steel. A retaining strap shall be provided at the rear of the trough to contain the hard suction hose.</p> <p>A section of hose bed grating shall be provided above the hard suction hose storage area. The vertical support partition (toward the inside of the hose bed) of this storage area shall be about the same height as the hose bed depth. This configuration shall provide additional hose storage space above the hard suction hose.</p> <p><u>HANDRAILS</u></p> <p>The handrails shall be 1.25" diameter anodized aluminum extrusion, with a ribbed design, 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, not less than 29.00" long, shall be located on each rear beavertail.</p> <ul style="list-style-type: none"> • One (1) full width horizontal handrail shall be provided below the hose bed at the rear of the apparatus. | | |

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| | Yes | No |
| <p><u>AIR BOTTLE STORAGE (SINGLE)</u></p> <p>One air bottle compartment, 7.75" in diameter x 26.00" deep, shall be provided on the passenger side low in the rear fender panel. A polished stainless steel water resistant door with a chrome plated flush lift & turn latch shall be provided to contain the air bottle. A dielectric barrier shall be provided between the door hinge, hinge fasteners and the body sheet metal.</p> <p>Inside the compartment, black rubber matting shall be provided.</p> <p><u>AIR BOTTLE STORAGE (DOUBLE)</u></p> <p>A quantity of two (2) air bottle compartments, 15.25" wide x 7.75" tall x 26.00" deep, shall be provided on the driver side forward of the rear wheels and on the passenger side forward of the rear wheels . A polished stainless steel water resistant door with a chrome plated flush lift & turn latch shall be provided to contain the air bottle. The door shall be sized to allow access to only one bottle at a time. A dielectric barrier shall be provided between the door hinge, hinge fasteners and the body sheet metal.</p> <p>Inside the compartment, black rubber matting shall be provided.</p> <p><u>EXTENSION LADDER</u></p> <p>There shall be a 28', two (2)-section, aluminum, Duo-Safety, Series 1200-A extension ladder provided.</p> <p><u>ROOF LADDER</u></p> <p>There shall be one (1) 16' aluminum, Duo-Safety, Series 875-A roof ladder provided.</p> <p><u>FOLDING LADDER</u></p> <p>One (1) 10' aluminum, Series 585-A, Duo-Safety folding ladder shall be provided.</p> <p><u>HYDRAULIC LADDER RACK</u></p> <p>Ground ladders shall be mounted above the right side of the hose body in a specially designed swing-down cradle. This cradle shall be electric/hydraulic operated. The system design shall have been life cycle tested for at least 20 years of dependable service.</p> <p>An independent hydraulic pump powered by a 12-volt electric motor shall operate the hydraulics. Operation of the hydraulic system for the ladder rack by an engine-powered pump shall be totally unacceptable. The hydraulic pump and reservoir shall be accessible from the ground through a stainless steel inspection door.</p> <p>The ladder rack shall incorporate two hydraulic rotary actuators, one each located inside the front compartment and the rear compartment. The actuators shall be completely enclosed within each compartment to eliminate any pinch points while operating the ladder rack. Lifting arms shall be</p> | | |

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| | Yes | No |
| <p>attached outside the compartment body to the front and rear actuator. A center-lifting arm built into the compartment space is unnecessary and is unacceptable.</p> <p>The rack can be designed in certain situations to provide lifting capabilities up to 500lbs.</p> <p>The maximum height of the rack from the ground in the lowered position shall be no more than 47.00".</p> <p>The electric control panel shall have a master switch on/off switch, an actuation switch, an operation indicator light and operation instructions. The electric controls shall be located in such a manner to allow the operator full view of the area into which the ladders shall be lowered.</p> <p>Two (2) air operated safety locks shall be furnished to securely maintain the ladder bracket assembly in the travel position. These air operated safety locks shall be controlled from the ladder rack control panel.</p> <p>Ladders shall be secured to the brackets with two (2) locks retaining the roof ladder and the extension ladder. The locks shall be such that when the roof ladder is removed, the clamps can be moved a half turn to hold the extension ladder in place.</p> <p><u>LADDER RACK INTERLOCK AND NOT STOWED INDICATOR LIGHT</u></p> <p>An interlock shall be provided to prevent operation of the ladder 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 hydraulic ladder rack is not in the stowed position. The light shall be labeled "Ladder Rack". In addition, the "Do Not Move Apparatus" light located in the cab shall be activated when the hydraulic ladder rack is not in the stowed position.</p> <p><u>LIGHTS, FLASHING, HYDRAULIC LADDER RACK</u></p> <p>Flashing amber lights facing the front and rear shall be provided on the ladder rack and activated whenever the rack is in the down position.</p> <p><u>PIKE POLE PROVIDED BY FIRE DEPARTMENT</u></p> <p>NFPA 1901, 2009 edition, Section 5.8.3 requires one (1) 8 ft or longer pike pole mounted in a bracket fastened to the apparatus.</p> <p>The pike pole is not on the apparatus as manufactured. The fire department shall provide and mount the pike pole.</p> | | |

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6 FT PIKE POLE PROVIDED BY FIRE DEPARTMENT

NFPA 1901, 2009 edition, Section 5.8.3 requires one (1) 6 ft pike pole or plaster hook mounted in a bracket fastened to the apparatus.

The pike pole is not on the apparatus as manufactured. The fire department shall provide and mount the pike pole.

PIKE POLE/FOLDING LADDER COMPARTMENT

A compartment shall be provided, recessed below the water tank tee at the rear of body, on the passenger's side.

The compartment shall be equipped with one (1) pvc tube for storage of one (1) straight handled pike pole and (1) stainless steel trough for storage of (1) folding ladder.

A stainless steel door shall be provided at the rear with a lift and turn latch.

PIKE POLE COMPARTMENT

One (1) pike pole compartment shall be provided, recessed below the water tank tee at the rear of body, on the driver's side. The pike pole compartment shall be equipped with two (2) pvc tubes to hold two (2) straight handled pike poles and have a stainless steel drop down door.

REAR FOLDING STEPS

Bright finished, non-skid folding steps with a luminescent coating that is rechargeable from any light source and can hold a charge for up to 24 hours 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.

CAMPER STEP

A camper style step shall be installed on the driver's side below rear tailboard to assist in climbing the rear tailboard. The step shall pull out and fold down. The step surface shall be a non-slip type.

SLIDE-OUT PLATFORM

Two (2) slide out platforms shall be provided, one in forward area of each pump panel, 22" deep on driver's side, and 12" deep on passenger's side. The capacity rating shall be 500 lbs in the extended position. Automatic locks shall be provided for both the "in" and "out" positions. The trip mechanism for the locks shall be located at the front of the tray for ease of use with a gloved hand.

There shall be an On Scene Solutions Access white 12 volt DC LED light provided to illuminate the ground area.

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| | Yes | No |
| <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</u> Pump shall be a Waterous CSU, 1500 gpm, single (1) stage midship mounted centrifugal type.</p> <p>Pump shall be the class "A" type.</p> <p>Pump shall deliver the percentage of rated discharge at pressures indicated below:</p> <ul style="list-style-type: none"> - 100% of rated capacity at 150 psi net pump pressure. -70% of rated capacity at 200 psi net pump pressure. -50% of rated capacity at 250 psi net pump pressure. <p>Pump body shall be close-grained gray iron, bronze fitted, and horizontally split in two (2) sections for easy removal of the entire impeller shaft assembly (including wear rings).</p> <p>Pump shall be designed for complete servicing from the bottom of the truck, without disturbing the pump setting or apparatus piping.</p> <p>Pump case halves shall be bolted together on a single horizontal face to minimize a chance of leakage and facilitate ease of reassembly. No end flanges shall be used.</p> <p>Discharge manifold of the pump shall be cast as an integral part of the pump body assembly and shall provide a minimum of three (3) 3.50" openings for flexibility in providing various discharge outlets for maximum efficiency.</p> <p>The three (3) 3.50" openings shall be located as follows: one (1) outlet to the right of the pump, one (1) outlet to the left of the pump, and one (1) outlet directly on top of the discharge manifold.</p> <p>Impeller shaft shall be stainless steel, accurately ground to size. It shall be supported at each end by sealed, anti-friction ball bearings for rigid precise support.</p> <p>Bearings shall be protected from water and sediment by suitable stuffing boxes, flinger rings, and oil seals. No special or sleeve type bearings shall be used.</p> <p>Stuffing boxes shall be of the conventional two (2) piece, split-gland type, to permit adjustment or replacement of Grafoil packing without disturbing the pump. Water shall be fed into stuffing box lantern rings for proper lubrication and cooling when the pump is operating.</p> | | |

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| | Yes | No |
| <p>Lantern rings shall be located at the inner ends of the stuffing boxes, to avoid having to remove them when replacing pump packing.</p> <p>Wear rings shall be bronze and easily replaceable to restore original pump efficiency and eliminate the need to replace the entire pump casing due to wear.</p> <p><u>PUMP TRANSMISSION</u></p> <p>Pump transmission shall be made of a three (3) piece, aluminum, horizontally split casing. Power transfer to pump shall be through a high strength Morse HY-VO silent drive chain.</p> <p>Drive shafts shall be a minimum of 2.35" diameter hardened and ground alloy steel. All shafts shall be ball bearing supported. The case shall be designed as to eliminate the need for water cooling.</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. A manual back-up shift control shall also be located on the driver's side pump panel.</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 that the chassis transmission is in pump gear. This indicator light shall be labeled "OK to pump".</p> <p>Another green indicator light shall be installed adjacent to the hand throttle on the pump panel and indicate either the pump is engaged and the road transmission is in pump gear, or the road transmission is in neutral and the pump is not engaged. This indicator light shall be labeled "Warning: Do not open throttle unless light is on".</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 cylindrical type and 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> | | |

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| | Yes | No |
| <p><u>INTAKE RELIEF VALVE</u></p> <p>An Elkhart relief valve shall be installed on the suction side of the pump preset at 125 psig.</p> <p>Relief valve shall have a working range of 75 psig to 250 psig.</p> <p>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>Control shall be located behind an access door at a side pump panel.</p> <p><u>RELIEF VALVE</u></p> <p>A Waterous adjustable relief valve, specially designed for fire service, shall be provided.</p> <p>Valve shall be positive, quick acting, and include an instantaneous on/off control. When in the off position, the relief valve shall functionally be removed from the system. When turned back to the on position, the relief valve shall again monitor and maintain the previous pressure setting.</p> <p>Control for adjusting pressure shall be elliptical shaped for positive grip.</p> <p>An easily removable pilot valve strainer shall be provided and be accessible from the pump operator's panel.</p> <p>Two (2) indicator lights shall be furnished, showing the position of the relief valve (amber for open and green for closed).</p> <p><u>PRIMER SYSTEM</u></p> <p>A Waterous electric pump priming system conforming to standards outlined in the current edition of NFPA 1901 shall be furnished with the apparatus.</p> <p>One (1) VPO electric motor driven rotary vane primer shall be provided.</p> <p>Two (2) VAP vacuum activated priming valves shall be provided, one plumbed to main pump and one plumbed to front suction.</p> <p>Two (2) momentary push-button controls shall be located at the pump operator's panel.</p> <p>The push button control system control shall operate an electric priming motor and the priming valve shall automatically open during priming and close when the primer is deactivated.</p> <p><u>IMPELLER HUB</u></p> <p>The midship pump impeller hubs shall be flame plated.</p> | | |

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RECIRCULATING LINE WITH CHECK VALVE

A 0.50" diameter recirculating line, from the pump to the water tank, shall be furnished with a control installed at the pump operator's control panel. A check valve shall be provided in this line to prevent the back flow of water from the tank to the pump if the valve is left in the open position.

PUMP MANUALS

Two (2) pump manuals from the pump manufacturer shall be furnished in compact disc format with the apparatus. Manuals shall cover pump operation, maintenance, and parts.

PLUMBING

All inlet and outlet plumbing, 3.00" and smaller, shall be plumbed with either stainless steel pipe or synthetic rubber hose reinforced with high-tensile polyester braid. If hose is used, it must have a minimum burst rating of 1,000 psi and be equipped with high pressure couplings. Larger inlets and outlets shall be threaded or welded black iron pipe. Small diameter secondary plumbing such as drain lines shall be stainless steel, brass or hose.

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.

All lines to drain through either a master drain valve or shall be equipped with individual drain valves. All individual drain lines for discharges shall be extended with a hose to drain below the chassis frame.

All water carrying gauge lines shall be of flexible polypropylene tubing.

MAIN PUMP INLETS

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.

MAIN PUMP INLET CAP

Fire Department shall provide one (1) cap for the main pump inlet.

The contractor shall provide one (1) cap for the main pump inlet. The cap shall have National Standard Threads and be chrome plated. This cap shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (No exception).

SHORT SUCTION TUBE

The suction tubes on the mid-ship pump shall have short suction tubes to allow for installation of adapters without excessive overhang.

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| | Yes | No |
| <p><u>VALVES</u></p> <p>Waterous valves shall be used for the side 2.50" discharges. All remaining ball valves, 3.00" or less, shall be Elkhart Unibody.</p> <p>The Waterous valves shall have a solid bronze ball that is chromium plated for a hard, durable surface. The spring loaded floating seal assembly shall require no adjustment, yet provides a tight seal against both pressure and vacuum pressures.</p> <p>All other ball valves shall be Elkhart Unibody series. Seats shall be self-adjusting for minimum operating torque and maximum abrasion resistance. The Elkhart valves shall have an automatic locking feature to hold the ball in any throttle position at any operating pressure. The valve body design shall allow any actuator to be mounted to the body.</p> <p><u>LEFT SIDE INLET</u></p> <p>On the left side pump panel shall be one (1) - 2.50" auxiliary suction, terminating in 2.50" National Standard Hose Thread. The auxiliary suction shall be provided with a strainer, chrome swivel and plug.</p> <p><u>RIGHT SIDE INLET</u></p> <p>On the right side pump panel shall be one (1) - 2.50" auxiliary suction, terminating in 2.50" National Standard Hose Thread. The auxiliary suction shall be provided with a strainer, chrome swivel and plug.</p> <p><u>INLET CONTROL</u></p> <p>Control for the side auxiliary inlets shall be located at the inlet valve. The location of the valve for the two (2) inlets shall be behind the pump panel.</p> <p><u>ANODE, INLET</u></p> <p>A pair of sacrificial zinc anodes shall be provided in the water pump inlets to protect the pump from corrosion.</p> <p><u>FRONT INLET</u></p> <p>A 6.00" inlet front inlet with die cast zinc screens shall be provided using 5.00" welded black iron pipe and a 5.00" butterfly valve. Only radiused elbows shall be used in the piping.</p> <p>Drains shall be furnished in all the low points of piping and have .75" valves with swing handle.</p> <p>A bleeder valve shall be located at the threaded connection.</p> <p>The front suction shall be located on the passenger side of the bumper extension.</p> | | |

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| | Yes | No |
| <p>The front suction piping shall be recessed to ensure that it does not interfere with the front headlights when a hose and strainer are mounted across the front bumper extension.</p> <p>The front suction shall have a 6.00" swivel elbow with National Standard hose threads and a long handle chromed plated 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 manufacture must supply the calculated flow rate at draft for the front suction.</p> <p><u>FRONT INLET CONTROL</u></p> <p>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.</p> <p>There shall be an electric valve controller provided. The control will be momentary to allow the valve to be gated for ease of operation. Indicator lights will be provided to show if the valve is open or closed.</p> <p><u>INTAKE RELIEF VALVE</u></p> <p>An intake relief valve, preset at 125 psig, shall be installed on the inlet side of the valve.</p> <p>Relief valve shall have a working range of 75 psig to 250 psig.</p> <p>Outlet shall terminate below the frame rails.</p> <p><u>INLET BLEEDER VALVE</u></p> <p>A 0.75" bleeder valve shall be provided for each side gated inlet. The valves shall be located behind the panel with a swing style handle control extended to the outside of the panel. The handles shall be chrome plated and provide a visual indication of valve position.</p> <p>The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. 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 with the control remotely located at the operator's panel. Tank to pump line shall run straight (no elbows) from the pump into the front face of the water tank and angle down into the tank sump. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing.</p> | | |

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| <p>A check valve shall be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank.</p> <p><u>TANK REFILL</u> A 1.50" 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>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>RIGHT SIDE DISCHARGE OUTLETS</u> There shall be one (1) discharge outlet 2.50" valve on the right side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.</p> <p><u>LARGE DIAMETER DISCHARGE OUTLET</u> There shall be a 5.00" discharge outlet with a 3.50" Waterous valve installed on the right side of the apparatus, terminating with male a 5.00" National Standard hose thread adapter. This discharge outlet shall be actuated with a hand wheel control at the pump operator's control panel.</p> <p>An indicator shall be provided to show when the valve is in the closed position.</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 Class 1 automatic drains provided at all low points of the piping.</p> <p><u>REAR DISCHARGE OUTLET</u> There shall be two (2) discharge outlets piped to the rear of the hose bed, on the passenger's side, installed so proper clearance is provided for spanner wrenches or adapters.</p> <p>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> | | |
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| | Yes | No |
| <p><u>OUTLET BLEEDER VALVE</u></p> <p>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 swing style handle control extended to the outside of the side pump panel. 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. Bleeders shall be located at the bottom of the pump panel. They shall be properly labeled identifying the discharge they are plumbed in to. The water discharged by the bleeders shall be routed below the chassis frame rails.</p> <p><u>LEFT SIDE OUTLET ELBOWS</u></p> <p>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 OUTLET ELBOWS</u></p> <p>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>REAR OUTLET ELBOWS</u></p> <p>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>LARGE DIAMETER OUTLET ELBOWS</u></p> <p>The 5.00" outlet shall be furnished with a 5.00" (F) National Standard hose thread x 5.00" Storz elbow adapter with Storz cap.</p> | | |

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| | Yes | No |
| <p><u>REDUCERS</u> There shall be three (3) adapters with 2.50" FNST x 1.50" MNST threads and a 1.50" chrome plated cap installed on the designated 2.5" discharges.</p> <p><u>DISCHARGE CAPS</u> Chrome plated, rocker lug, caps with chains shall be furnished for all side and rear discharge outlets.</p> <p>The caps shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (No exception).</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 hand wheel control valve is used, the control shall be a minimum of a 3.9" diameter stainless steel hand wheel with a dial position indicator built in to the center of the hand wheel.</p> <p><u>DELUGE RISER</u> 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.</p> <p><u>TELESCOPIC PIPING</u> The deluge riser piping shall include an 18.00" Task Force Model XG18 Extend-A-Gun extension. This extension shall be telescopic to allow the deluge gun to be raised 18.00" increasing the range of operation.</p> <p>When fully extended, it shall be possible to effectively operate the monitor parallel to the ground in a 360 degree circle. A position sensor shall be provided on the telescopic piping that shall activate the "do not move vehicle" light inside the cab when the monitor is in the raised position.</p> <p>The deluge riser shall have a 3.00" four (4)-bolt flange for mounting the monitor.</p> <p><u>MONITOR</u> An Elkhart Model 8500 "Vulcan" manually controlled monitor shall be properly installed on the deluge riser. This monitor shall include the fixed base only. The monitor shall be painted to match the body.</p> <p><u>MONITOR NOZZLE</u> An Elkhart #ST-194 Elk-o-Lite quad stacked deluge tips shall be provided with a 282 A Elkhart stream shaper. Tip sizes shall be 1.375", 1.50", 1.75" and 2.0"</p> | | |

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| | Yes | No |
| <p><u>CROSSLAY HOSE BEDS, 1.50"</u></p> <p>Three (3) crosslays with 1.50" outlets shall be provided. Each bed to be capable of carrying: front 300', center 200', rear 200' of 1.75" hose and shall be plumbed with 2.00" i.d. pipe and gated with a 2.00" quarter turn ball valve.</p> <p>Outlets to be equipped with a 1.50" 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.</p> <p>Vertical scuffplates, constructed of stainless steel, shall be provided at the front and rear ends of the bed on each side of vehicle.</p> <p>Crosslay bed flooring shall consist of removable perforated brushed aluminum.</p> <p><u>CROSSLAY COVER</u></p> <p>A bi-fold aluminum treadplate cover, hinged at the back shall be installed over the top of the crosslays. It shall include a latch at each end of the cover to hold it securely in place, a chrome grab handle at each end for opening and closing the cover and a foam rubber gasket where the cover comes into contact to a painted surface. The cover shall be provided with rubber latch hold open device.</p> <p><u>CROSSLAY HOSE RESTRAINT</u></p> <p>A black elastic netting shall be provided across the ends of three (3) crosslays to secure the hose during travel. Hook and ring fasteners shall be used with the top of the netting permanently secured to the aluminum crosslay cover.</p> <p><u>FOAM SYSTEM</u></p> <p>An Elkhart Brass, Model 240-95P, foam eductor, with a capacity for 95 gpm, shall be installed on the discharge side of the pump. Foam eductor shall have a ball-type check valve to prevent water flow back into the foam agent line. Foam eductor shall have a quarter-turn ball valve, for alternation between the bypass and the foam eductor.</p> <p>The foam system shall be a single agent system capable of handling class A foam concentrates as well as most class B foam concentrates.</p> <p>The foam eductor shall be plumbed to the front discharge.</p> | | |

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| | Yes | No |
| <p>Controls for the foam system shall be located on the pump operator's panel and labeled with red tags for easy identification.</p> <p>The controls for the eductor, foam supply, and the flush shall be electric over pneumatic to allow for an ergonomically designed control panel and simplified operation.</p> <p>Provided with the system shall be an instruction plate and plumbing schematic.</p> <p>Push/pull handles for the foam system shall be labeled with red tags for easy identification.</p> <p>All piping coming in direct contact with the foam concentrate shall be immune to the concentrate, so deterioration of the plumbing shall be avoided.</p> <p>This system shall have a bypass eductor type foam, with a rated capacity of 95 gpm at .5 percent, 1 percent, 3 percent, and 6 percent.</p> <p>Foam system operational considerations: 200 psi eductor inlet pressure shall be required for proper operation.</p> <p><u>FOAM OUTLET</u></p> <p>There shall be one (1) foam outlet installed driver's side pump panel. The outlet shall be piped to the foam tank with 1.00" stainless steel pipe or flexible hose capable of resisting the corrosion caused by foam concentrates, and shall have a 1.00" inline ball valve with the control handle located adjacent to the foam outlet.</p> <p>A .375" valve shall be provided adjacent to the foam outlet and shall be plumbed into the foam line, after the valve, to allow flushing of the outlet plumbing.</p> <p>The one (1) foam outlet shall terminate with a stainless steel quick disconnect male fitting with matching female stainless steel cap. A female stainless steel adapter shall be shipped loose for connection of the customer's foam eductor.</p> <p><u>FOAM TANK</u></p> <p>The foam tank shall be an integral portion of the polypropylene water tank. The cell shall have a capacity of 30 gallons of foam with the intended use of Class B foam. The brand of foam stored in this tank shall be National Universal Gold. 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></p> <p>The foam tank drain shall be a 1.00" drain valve located inside the pump compartment accessible through a door on the passenger's side pump panel.</p> | | |

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| | Yes | No |
| <p><u>PUMP COMPARTMENT</u></p> <p>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 supports both the fire pump and the side running boards.</p> <p>The pump compartment shall be mounted on the 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 shall be removable from the chassis in a single assembly.</p> <p><u>PUMP MOUNTING</u></p> <p>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 (SIDE CONTROL)</u></p> <p>All pump controls and gauges shall be located at the left (driver's) side of the apparatus and properly marked.</p> <p>The pump panel on the right (passenger's) side shall be removable with lift and turn type fasteners. The left (driver's) side is fastened with screws.</p> <p>The control panels shall be 52.00" wide.</p> <p>The gauge and control panels shall be two (2) separate panels for ease of maintenance.</p> <p>The side gauge panel shall be hinged at the bottom with a full length stainless steel hinge. The fasteners used to hold the panel in the upright position shall be quarter turn type. Vinyl covered cable or chains shall be used to hold the gauge panel in the dropped position.</p> <p>Polished stainless steel trim collars shall be installed around all inlets and outlets.</p> <p>All push/pull valve controls shall have 1/4 turn locking control rods with polished chrome plated zinc tee handles. Guides for the push/pull control rods shall be chrome plated zinc castings securely mounted to the pump panel. Push/pull valve controls shall be capable of locking in any position. The control rods shall pull straight out of the panel and shall be equipped with universal joints to eliminate binding.</p> <p>The identification tag for each valve control shall be recessed in the face of the tee handle.</p> | | |

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| | Yes | No |
| <p>All discharge outlets shall have color coded identification tags, with each discharge having its own unique color. Color coding shall include the labeling of the outlet and the drain for each corresponding discharge.</p> <p>All line pressure gauges shall be mounted in individual chrome plated castings with the identification tag recessed in the casting below the gauge. All remaining identification tags shall be mounted on the pump panel in chrome plated bezels.</p> <p>Mounting of the castings and identification bezels shall be done with a threaded peg cast on the back side of the bezel or screws.</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 pump and gauge 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 passenger's side pump panel shall be removable and fastened with swell type fasteners.</p> <p><u>PUMP COMPARTMENT LIGHT</u> A pump compartment light shall be provided inside the right side pump enclosure and accessible through a door on the pump panel.</p> <p>A .125" weep hole shall be provided in each light lens, preventing moisture retention.</p> <p><u>PUMP PANEL GAUGES AND CONTROLS</u> The following shall be provided on the pump and gauge panels in a neat and orderly fashion:</p> <ul style="list-style-type: none"> - Class 1 Enfo 4 System: With LED display of the engine oil pressure, engine temperature and engine rpm. A warning alarm shall be provided for these items. - Tachometer: Electric - Voltmeter - Master Pump Drain Control - Engine Throttle, Vernier Type <p><u>GAUGES, VACUUM AND PRESSURE</u> The pump vacuum and pressure gauges shall be liquid filled and manufactured by Class 1, Inc.</p> | | |

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| | Yes | No |
| <p>The gauges shall be a minimum of 4.00" in diameter and shall have white faces with black markings, with a pressure range of 30.00" 0-400 psi.</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 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> <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>An electronic master water level gauge shall be provided on the operator's panel, mini level gauge inside the cab and an additional level gauge shall be located on the passenger side pump panel. Water levels shall be indicated by means of five (5) durable, ultra-bright five LED lights. The standard size (not the mini) level gauges shall have a lens design that shall be viewable through 180 degrees. The water level indicators shall be as follows:</p> <ul style="list-style-type: none"> - 100% = Green - 75% = Yellow | | |

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| | Yes | No |
| <p>- 50% = Yellow</p> <p>- 25% = Yellow</p> <p>- Refill = Red</p> <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><u>WATER LEVEL GAUGE, CAB SIDES</u></p> <p>There shall be two (2) additional water level indicator, Whelen, Model: PSTANK, LED module, installed each side of crew cab.</p> <p>This light module shall include four (4) colored levels, and function similar to the water level indicator located at the operators panel:</p> <p>First green module indicates a full water level.</p> <p>Second blue module indicates a water level above 3/4 full.</p> <p>Third amber module indicates a water level above 1/2 full.</p> <p>Last red module indicates a water level above 1/4 full and empty.</p> <p>Above 1/4 this light shall be steady burning.</p> <p>At empty this light shall be flashing.</p> <p>This module shall be activated when the pump is in gear.</p> <p><u>FOAM LEVEL GAUGE</u></p> <p>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:</p> | | |

Specification

| Bidder Complies | |
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| Yes | No |

- 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.

LIGHT SHIELD

There shall be a polished, 16 gauge stainless steel light shield installed over the pump operators panel.

- There shall be 12 volt DC white LED lights installed under the stainless steel light shield to illuminate the controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus. These lights shall be activated by the pump panel light switch. Additional lights shall be included every 18.00" depending on the size of the pump house.
- One (1) pump panel light shall come on when the pump is in ok to pump mode.

There shall be a light activated above the pump panel light switch when the parking brake is set. This is to afford the operator some illumination when first approaching the control panel.

There shall be a green pump engaged indicator light activated on at the operator's panel when the pump is shifted into gear from inside the cab.

ADDITIONAL LIGHT SHIELD

An additional polished, 16 gauge stainless steel light shield shall be provided above passenger's side pump panel.

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| | Yes | No |
| <ul style="list-style-type: none"> • There shall be 12 volt DC white LED lights installed under the light shield to illuminate the controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus. These lights shall be activated by the pump panel light switch. Additional lights shall be included every 18.00" depending on the size of the pump house. <p><u>MICROPHONE & SPEAKER COMPARTMENT</u> A microphone and speaker compartment with a polished stainless steel door shall be furnished adjacent to the pump operator's panel. Compartment size shall be 12.00" high x 9.00" wide x 6.00" deep.</p> <p><u>AIR HORN SYSTEM</u> Two (2) Grover air horns shall be provided and located in the front bumper, recessed one each side. 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 CONTROL</u> One (1) lanyard chain pull control shall be provided. It shall be centered between the driver's and officer's seats. The chain shall split so that there is a separate chain accessible for both the driver and officer.</p> <p><u>ELECTRONIC SIREN</u> A Whelen, Model 295HFS2, electronic remote 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>Siren head shall be located on a swivel bracket mounted on the headliner so that it is accessible to both the driver and officer. The swivel bracket shall be capable of rotating a minimum of 180 degrees.</p> <p>Siren shall be actuated by a foot switch on the officer's side and by the horn button in the steering wheel. The driver shall have the option to control the siren or the chassis horns from the horn button by means of a selector switch.</p> <p><u>SPEAKER</u> There shall be two (2) speakers provided. Each speaker shall be a Whelen, Model SA314A, 100-watt, cast aluminum with natural finish. Each speaker shall be connected to the siren amplifier.</p> <p>The speakers shall be recessed in the front bumper.</p> | | |

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| Yes | No |

MECHANICAL SIREN

A Federal Q2B® siren shall be furnished. A siren brake button shall be installed on the switch panel. A second siren brake switch shall be installed on the passenger side.

The control solenoid shall be powered up after the emergency master switch is activated.

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.

The mechanical siren shall be actuated by two (2) foot switches, one (1) located on the officer's side and one (1) on the driver's side.

MECHANICAL SIREN INTERLOCK

The mechanical siren shall be interlocked to shutoff whenever parking brake is applied. The interlock shall disconnect the power only.

LIGHTBAR

There shall be one (1) 82.00" Whelen Rota-Beam, LED lightbar mounted on the cab roof.

The lightbar shall include the following:

- One (1) red flashing in a semi circle LED module in the driver's side rear position
- One (1) red flashing in a semi circle LED module in the driver's side front corner position
- One (1) red flashing LED module in the driver's side first front position
- One (1) red flashing LED module in the driver side second front position
- One (1) white flashing in a semi circle LED module in the driver's side third front position
- One (1) red flashing LED module in the driver's side fourth front position
- One (1) 795 LED, traffic light controller in front center position
- One (1) red flashing LED module in the passenger's side fourth front position
- One (1) white flashing in a semi circle LED module in the passenger's side third front position
- One (1) red flashing LED module in the passenger's side second front position
- One (1) red flashing LED module in the passenger's side first front position
- One (1) red flashing in a semi circle LED module in the passenger's side front corner position
- One (1) red flashing in a semi circle LED module in the passenger's side rear corner position

The color of the lenses shall be the same color as the LED's.

There shall be two (2) switches located on a cab switch panel to control this lightbar.

- One (1) switch shall control all the warning lights.
- One (1) switch shall control the traffic light controller.

The white warning lights and the traffic light controller shall be disabled when the parking brake is applied.

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| | Yes | No |
| <p>The six (6) red flashing LED modules in the front positions may be load managed when the parking brake is applied.</p> <p><u>CAB FACE WARNING LIGHTS</u></p> <p>Four (4) Whelen®, Model M6*, LED flashing warning lights shall be installed on the cab face, above the headlights, mounted in a common bezel.</p> <p>The driver's side front outside warning light to be red.</p> <p>The driver's side front inside warning light to be blue.</p> <p>The passenger's side front inside warning light to be blue.</p> <p>The passenger's side front outside warning light to be red.</p> <p>All four (4) lights shall include a colored lens that is the same color of the LED's.</p> <p>There shall be a switch located in the cab, on the switch panel, to control the four (4) lights.</p> <p>The inside lights may be load managed when the parking brake is set.</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 M6V2**, 4.32" high x 6.75" long x 2.25" deep LED flashing warning and scene lights with chrome trim located in the following positions:</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 warning LED's. • Two (2) lights, adjacent to crew cab door. The side middle lights to be red warning LED's. • Two (2) lights, in rear fender skirting. The side rear lights to be red warning LED's. <p>All six (6) flashing warning lights shall include a lens the same color as the LED's.</p> <p>There shall be a switch in the cab on the switch panel to control the flashing warning lights.</p> | | |

| Bidder Complies | |
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| Yes | No |

The scene LED's shall be activated by a switch at the driver's side switch panel.

The scene LED's may be load managed when the parking brake is applied.

INTERIOR CAB DOOR WARNING LIGHTS

There shall be four (4) Whelen, Model 50*00F*R, flashing LED lights with chrome trim provided.

The lights shall be installed per the following:

- One (1) light shall be installed on the driver's side cab door
- One (1) light shall be installed on the passenger's side cab door
- One (1) light shall be installed on the passenger's side crew cab door
- One (1) light shall be installed on the driver's side crew cab door

The color of the lights shall be red.

Each light shall be activated when the battery switch is on and the associated door is open.

REAR ZONE LOWER LIGHTING

There shall be two (2) Whelen®, Model M6*, LED flashing warning lights shall be located at the rear of the apparatus.

- The driver's side rear light to be red
- The passenger's side rear light to be red

Both lights shall include a lens that is the same color as the LED's.

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

REAR OF HOSEBED WARNING LIGHTS

There shall be two (2) Whelen, Model B63M7**, LED Rota-Beam, beacons with Model M7**, lower LED flashing lights provided in a single polished aluminum housing at the rear of the truck.

There shall be one (1) installed on the driver's side with the lower light to the rear:

- The driver's side beacon to include red LED's.
- The rear upper light on the driver's side to be amber.

There shall be one (1) installed on the passenger's side with the lower light to the rear:

- The passenger's side beacon to include red LED's.

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| | Yes | No |
| <ul style="list-style-type: none"> The rear upper light on the passenger's side to be red. <p>The color of the lenses for all the LED's to be the same color as the LED's.</p> <p>There shall be a switch located in the cab on the switch panel to control the lights.</p> <p>The lower light may be load managed when the parking brake is applied.</p> <p>The rear warning lights shall be mounted on top of the compartmentation with all wiring totally enclosed. The rear deck lights shall be mounted on the beavertails as high as possible.</p> <p><u>TRAFFIC DIRECTING LIGHT</u></p> <p>There shall be one (1) Whelen model TAL85 46.81" long x 2.84" high x 2.24" deep, amber LED traffic directing light installed at the rear of the apparatus.</p> <p>The Whelen model TACTLD1 control head shall be included with this installation.</p> <p>The auxiliary warning mode shall be activated with the control head only.</p> <p>This traffic directing light shall be recessed within a treadplate step at the rear of the apparatus.</p> <p>The traffic directing light control head shall be located within a heavy duty swivel bracket centered between the driver and passenger.</p> <p>This swivel bracket shall enable the driver access as well as the passenger.</p> <p><u>ELECTRICAL SYSTEM GENERAL DESIGN FOR ALTERNATING CURRENT</u></p> <p>The following guidelines shall apply to the 120/240 VAC system installation:</p> <p><u>General</u></p> <p>Any fixed line voltage power source producing alternating current (ac) line voltage shall produce electric power at 60 cycles plus or minus 5 cycles.</p> <p>Except where superseded by the requirements of NFPA 1901, all components, equipment and installation procedures shall conform to NFPA 70, National Electrical Code (herein referred to as the NEC).</p> <p>Line voltage electrical system equipment and materials included on the apparatus shall be listed and installed in accordance with the manufacturer's instructions. All products shall be used only in the manner for which they have been listed.</p> | | |

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| | Yes | No |
| <p><u>Grounding</u></p> <p>Grounding shall be in accordance with Section 250-6 "Portable and Vehicle Mounted Generators" of the NEC. Ungrounded systems shall not be used. Only stranded or braided copper conductors shall be used for grounding and bonding.</p> <p>An equipment grounding means shall be provided in accordance with Section 250-91 (Grounding Conductor Material) of the NEC.</p> <p>The grounded current carrying conductor (neutral) shall be insulated from the equipment grounding conductors and from the equipment enclosures and other grounded parts. The neutral conductor shall be colored white or gray in accordance with Section 200-6 (Means of Identifying Grounding Conductors) of the NEC.</p> <p>In addition to the bonding required for the low voltage return current, each body and driving or crew compartment enclosure shall be bonded to the vehicle frame by a copper conductor. This conductor shall have a minimum amperage rating of 115 percent of the nameplate current rating of the power source specification label as defined in Section 310-15 (amp capacities) of the NEC. A single conductor properly sized to meet the low voltage and line voltage requirements shall be permitted to be used.</p> <p>All power source system mechanical and electrical components shall be sized to support the continuous duty nameplate rating of the power source.</p> <p><u>Operation</u></p> <p>Instructions that provide the operator with the essential power source operating instructions, including the power-up and power-down sequence, shall be permanently attached to the apparatus at any point where such operations can take place.</p> <p>Provisions shall be made for quickly and easily placing the power source into operation. The control shall be marked to indicate when it is correctly positioned for power source operation. Any control device used in the drive train shall be equipped with a means to prevent the unintentional movement of the control device from its set position.</p> <p>A power source specification label shall be permanently attached to the apparatus near the operator's control station. The label shall provide the operator with the information detailed in Figure 19-4.10.</p> <p>Direct drive (PTO) and portable generator installations shall comply with Article 445 (Generators) of the NEC.</p> | | |

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| | Yes | No |
| <p><u>Overcurrent protection</u></p> <p>The conductors used in the power supply assembly between the output terminals of the power source and the main over current protection device shall not exceed 144.00" (3658 mm) in length.</p> <p>For fixed power supplies, all conductors in the power supply assembly shall be type THHW, THW, or use stranded conductors enclosed in nonmetallic liquid tight flexible conduit rated for a minimum of 194 degree Fahrenheit (90 degrees Celsius).</p> <p>For portable power supplies, conductors located between the power source and the line side of the main overcurrent protection device shall be type SO or type SEO with suffix WA flexible cord rated for 600-volts at 194 degrees Fahrenheit (90 degrees Celsius).</p> <p><u>Wiring Methods</u></p> <p>Fixed wiring systems shall be limited to the following:</p> <ul style="list-style-type: none"> • Metallic or nonmetallic liquid tight flexible conduit rated at not less than 194 degrees Fahrenheit (90 degrees Celsius) • or • Type SO or Type SEO cord with a WA suffix, rated at 600 volts at not less than 194 degrees Fahrenheit (90 degrees Celsius) <p>Electrical cord or conduit shall not be attached to chassis suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components, or low voltage wiring. In addition the wiring shall be run as follows.</p> <ul style="list-style-type: none"> • Separated by a minimum of 12.00" (305 mm), or properly shielded, from exhaust piping • Separated from fuel lines by a minimum of 6.00" (152 mm) distance <p>Electrical cord or conduit shall be supported within 6.00" (152 mm) of any junction box and at a minimum of every 24.00" (610 mm) of continuous run. Supports shall be made of nonmetallic materials or corrosion protected metal. All supports shall be of a design that does not cut or abrade the conduit or cable and shall be mechanically fastened to the vehicle.</p> <p><u>Wiring Identification</u></p> <p>All line voltage conductors located in the main panel board shall be individually and permanently identified. The identification shall reference the wiring schematic or indicate the final termination point. When prewiring for future power sources or devices, the unterminated ends shall be labeled showing function and wire size.</p> | | |

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| | Yes | No |
| <p><u>Wet Locations</u> All wet location receptacle outlets and inlet devices, including those on hardwired remote power distribution boxes, shall be of the grounding type provided with a wet location cover and installed in accordance with Section 210-7 "Receptacles and Cord Connections" of the NEC.</p> <p>All receptacles located in a wet location shall be not less than 24.00" (610 mm) from the ground. Receptacles on off-road vehicles shall be a minimum of 30.00" (762 mm) from the ground.</p> <p>The face of any wet location receptacle shall be installed in a plane from vertical to not more than 45 degrees off vertical. No receptacle shall be installed in a face up position.</p> <p><u>Dry Locations</u> All receptacles located in a dry location shall be of the grounding type. Receptacles shall be not less than 30.00" (762 mm) above the interior floor height.</p> <p>All receptacles shall be marked with the type of line voltage (120-volts or 240-volts) and the current rating in amps. If the receptacles are direct current, or other than single phase, they shall be so marked.</p> <p><u>Listing</u> All receptacles and electrical inlet devices shall be listed to UL 498, Standard for Safety Attachment Plugs and Receptacles, or other appropriate performance standards. Receptacles used for direct current voltages shall be rated for the appropriate service.</p> <p><u>Electrical System Testing</u> The wiring and associated equipment shall be tested by the apparatus manufacturer or the installer of the line voltage system.</p> <p>The wiring and permanently connected devices and equipment shall be subjected to a dielectric voltage withstand test of 900-volts for one (1) minute. The test shall be conducted between live parts and the neutral conductor, and between live parts and the vehicle frame with any switches in the circuit(s) closed. This test shall be conducted after all body work has been completed.</p> <p>Electrical polarity verification shall be made of all permanently wired equipment and receptacles to determine that connections have been properly made.</p> <p><u>Operational Test per Current NFPA 1901 Standard</u> The apparatus manufacturer shall perform the following operation test and ensure that the power source and any devices that are attached to the line voltage electrical system are properly connected and in working order. The test shall be witnessed and the results certified by an independent third-party certification organization.</p> | | |

Specification

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| | Yes | No |
| <p>The prime mover shall be started from a cold start condition and the line voltage electrical system loaded to 100 percent of the nameplate rating.</p> <p>The power source shall be operated at 100 percent of its nameplate voltage for a minimum of two (2) hours unless the system meets category certification as defined in the current NFPA 1901 standard.</p> <p>Where the line voltage power is derived from the vehicle's low voltage system, the minimum continuous electrical load as defined in the current NFPA 1901 standard shall be applied to the low voltage electrical system during the operational test.</p> <p><u>GENERATOR</u></p> <p>The apparatus shall be equipped with a complete AC (alternating current) electrical power system. The generator shall be a Harrison, Model MSV, 6,000 watt hydraulic driven unit with vertical exhaust.</p> <p>The generator shall be driven by a transmission power take off unit, through a hydraulic pump and motor.</p> <p>The hydraulic engagement supply shall be operational only after the chassis parking brake is applied.</p> <p>An electric/hydraulic valve shall supply hydraulic fluid to the clutch engagement unit provided on the chassis PTO drive.</p> <p><u>Generator Instruments and Controls</u></p> <p>To properly monitor the generator performance, a voltmeter shall be furnished near the breaker box.</p> <p><u>GENERATOR LOCATION</u></p> <p>The generator shall be mounted in the dunnage area. The flooring in this area shall be either reinforced or constructed in such a manner that it shall handle the additional weight of the generator.</p> <p><u>GENERATOR START</u></p> <p>There shall be a switch provided on the cab instrument panel to engage the generator.</p> <p><u>CIRCUIT BREAKER PANEL</u></p> <p>The circuit breaker panel shall be located left front compartment.</p> | | |

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| Yes | No |

ELECTRIC CORD REEL

Furnished with the 120 volt AC electrical system shall be a Hannay, Series 1600, cord reel. The reel shall be provided with a 12 volt electric rewind switch that is guarded to prevent accidental operation and labeled for its intended use. The switch shall be protected with a fuse and installed at a height not to exceed 72.00" above the operators standing position.

The exterior finish of the reel shall be painted job color matching the body exterior. The cord reel should be configured with three (3) conductors.

A Nylatron guide to be provided to aid in the payout and loading of the reel. A ball stop shall be provided to prevent the cord from being wound on the reel.

A label shall be provided in a readily visible location adjacent to the reel. The label shall indicate current rating, current type, phase, voltage and total cable length.

A total of one (1) cord reel shall be provided dunnage area.

CORD

Provided for electric distribution shall be one (1) length installed on the reel of 200 feet of yellow 10/3 electrical cord, weather resistant 105 degree Celsius to -50 degree Celsius, 600 volt jacketed SOOW cord. A Hubbell L5-20, 20 amp, 120 volt twist lock connector body shall be installed on the end of the cord.

PORTABLE JUNCTION BOX

There shall be four (4) 120 vac 20 amp twist lock receptacles provided in a portable junction box. The junction box shall be of weatherproof construction and have flip up lids lined with soft neoprene rubber at each outlet opening.

A Hubbell L5-20, 20 amp, 120 volt, twist lock connector body.

A total of one (1) shall be provided.

120 VOLT INTERIOR RECEPTACLE

Receptacle shall be a NEMA 5-15, 120 volt, 15 amp, three (3) wire duplex household type with a non-weather resistant cover connector to the generator.

There shall be two (2) receptacles provided in crew cab.

20 AMP RECEPTACLE

Wired to the power supply shall be a NEMA L5-20, 120 volt, 20 amp, three (3) wire twist-lock type receptacle with weather resisting cover.

There shall be three (3) receptacles provided located in designated compartments.

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| | Yes | No |
| <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>NFPA REQUIRED LOOSE EQUIPMENT PROVIDED BY FIRE DEPARTMENT</u></p> <p>The following loose equipment as outlined in NFPA 1901, 2009 edition, section 5.8.2 and 5.8.3 shall be provided by the fire department. All loose equipment shall be installed on the apparatus before placed in emergency service, unless the fire department waives NFPA section 4.21.</p> <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) playpipe with shutoff and 1.00" (25 mm), 1.125" (29 mm), and 1.25" (32 mm) tips. • One (1) SCBA complying with NFPA 1981, <i>Standard on Open-Circuit Self-Contained Breathing Apparatus for Fire and Emergency Services</i>, 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 mounted in bracket(s) fastened to the apparatus. • Two (2) hydrant wrenches mounted in brackets fastened to the apparatus. • 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). • One (1) double female 2.50" (65 mm) adapter with National Hose threads, mounted in a bracket fastened to the apparatus. • One (1) double male 2.50" (65 mm) adapter with National Hose threads, mounted in a bracket fastened to the apparatus. • One (1) rubber mallet, for use on suction hose connections, mounted in a bracket fastened to the apparatus. • 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. | | |

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| | Yes | No |
| <ul style="list-style-type: none"> • 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). • 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. • 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>STRAINER PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2009 edition, section 5.7.2.1.1 requires a suction strainer when suction hose is provided. The strainer is not on the apparatus as manufactured. The fire department shall provide the suction strainer.</p> <p><u>DRY CHEMICAL EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2009 edition, section 5.8.3 requires one (1) approved dry chemical portable fire extinguisher with a minimum 80-B:C rating mounted in a bracket fastened to the apparatus. The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.</p> | | |

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| | Yes | No |
| <p><u>WATER EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2009 edition, section 5.8.3 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, 2009 edition, Section 5.8.3 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>PICKHEAD AXE PROVIDED BY FIRE DEPARTMENT</u> NFPA 1901, 2009 edition, Section 5.8.3 requires one (1) pick head 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"> 1. <u>Manual Surface Preparation</u> - All exposed metal surfaces on the custom cab and body shall be thoroughly cleaned and prepared for painting. Surfaces that shall not be painted include all chrome plated, polished stainless steel, anodized aluminum and bright aluminum treadplate. Each imperfection on the exterior metal surface shall be removed or filled and then sanded smooth for a smooth appearance. All seams shall be sealed before painting. 2. <u>Chemical Cleaning and Treatment</u> - The metal surfaces shall be properly cleaned using a high pressure and high temperature cleaning system. Surfaces are chemically cleaned to remove all dirt, oil, grease and metal oxides to ensure the subsequent coatings bond well. An ultra-pure water final rinse shall be applied to all metal surfaces at the conclusion of the metal treatment process. 3. <u>Primer/Surfacer Coats</u> - A two (2) component urethane primer/surfacer shall be hand applied to the chemically treated metal surfaces to provide a strong corrosion protective base coat and to smooth out the surface. 4. <u>Hand Sanding</u> - The primer/surfacer coat shall be lightly sanded to an ultra-smooth finish. | | |

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| Yes | No |

5. Sealer Primer Coat - A two (2) component sealer primer coat shall be applied over the sanded primer.

6. Topcoat Paint - Urethane base coat shall be applied to opacity for correct color matching.

7. Clearcoat - Two (2) coats of an automotive grade two (2) component urethane shall be applied. Lap style doors shall be clear coated to match the body. Roll-up doors shall not be clear coated and the standard roll-up door warranty shall apply.

All removable items such as brackets, compartment doors, door hinges, trim, etc. shall be removed and painted separately to insure paint behind all mounted items. Body assemblies that cannot be finish painted after assembly shall be finish painted before assembly.

The cab shall be two-tone, with the upper section painted white #10 along with a shield design on the cab face and lower section of the cab and body painted red #106 .

PAINT - ENVIRONMENTAL IMPACT

Contractor shall meet or exceed all current State (his) 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 means 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 mechanically on a continual basis to keep the water clean.

Paint wastes are disposed of in an environmentally safe manner. They are used as fuel in kilns used in the cement manufacturing process - thereby extracting energy from a waste material.

Empty metal paint containers shall be cleaned, crushed and recycled to recover the metal.

Solvents used in cleanup operations shall be collected, recycled on-site, or sent off-site for distillation and returned for reuse. Residue from the distillation operation shall be used as fuel in off-site cement kilns.

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| | Yes | No |
| <p>Additionally, the finished apparatus shall not be manufactured with or contain products that have ozone depleting substances. Contractor shall, upon demand, present evidence that his manufacturing facility meets the above conditions and that it is in compliance with his State EPA rules and regulations.</p> <p><u>PAIN T CHASSIS FRAME ASSEMBLY</u></p> <p>The chassis frame assembly shall be painted black before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, etc.</p> <p>Components that are included with the chassis frame assembly that shall be painted are:</p> <ul style="list-style-type: none"> • Frame rails • Cross members • Axles • 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 • 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 <p>The E-coat process shall meet the technical properties shown.</p> <p><u>PAIN T, FRONT WHEELS</u></p> <p>All wheel surfaces, inside and outside, shall be provided with powder coat paint #106 red.</p> <p><u>PAIN T, REAR WHEELS</u></p> <p>All wheel surfaces, inside and outside, shall be provided with powder coat paint #106 red.</p> | | |

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| | Yes | No |
| <p><u>WHEELS, ACCENT STRIPE</u> All exposed outer edge wheel surfaces shall be painted with a silver #224 accent stripe.</p> <p><u>COMPARTMENT LINING</u> There shall be seven (7) interior body compartments sprayed with Line-X® polyurethane/polyurea material each side and rear body compartment. The interior lining shall be white in color.</p> <p>The lining shall be properly installed by an authorized Line-X dealer.</p> <p><u>REFLECTIVE STRIPES</u> Three (3) reflective stripes shall be provided across the front of the vehicle and along the sides of the body. The reflective band shall consist of a 1.00" white stripe at the top with a 1.00" gap then a 6.00" white stripe with a 1.00" gap and a 1.00" white stripe on the bottom.</p> <p>The reflective band provided on the cab face shall be below the headlights on the fiberglass or on the bumper.</p> <p><u>CHEVRON STRIPING, REAR</u> There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus. The rear surface, excluding the rear compartment door, shall be covered.</p> <p>The colors shall be red and yellow diamond grade.</p> <p>Each stripe shall be 6.00" in width.</p> <p>This shall meet the requirements of NFPA 1901, 2009 edition, which states that 50% of the rear surface shall be covered with chevron striping.</p> <p><u>CHEVRON STRIPING ON THE FRONT BUMPER</u> There shall be alternating chevron striping located on the front bumper.</p> <p>The colors shall be yellow and red diamond grade.</p> <p>The size of the striping shall be 4.00".</p> <p><u>"Z" RIBBON IN REFLECTIVE STRIPE</u> "Z" type ribbon shall be added to the reflective stripe as directed. 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 one (1) pair on the vehicle.</p> | | |

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| | Yes | No |
| <p><u>REFLECTIVE STRIPE, CAB DOORS</u> A 4.00" x 24.00" yellow 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 stainless steel door panel.</p> <p>This stripe shall meet the NFPA 1901 requirement.</p> <p><u>CAB FACE STRIPE</u> There shall be a genuine gold leaf stripe across the face of the cab at the paint break.</p> <p><u>LETTERING</u> The lettering shall be totally encapsulated between two (2) layers of clear vinyl.</p> <p><u>LETTERING</u> Up one hundred (100) genuine gold leaf lettering, 3.00" high, with outline and shade shall be provided.</p> <p><u>LETTERING</u> There shall be reflective lettering, 16.00" high provided. There shall be five (5) letters provided.</p> <p><u>LETTERING</u> There shall be reflective lettering, 3.00" high, with outline provided. There shall be nine (9) letters provided.</p> <p><u>LETTERING</u> There shall be reflective lettering, 4.00" high, with outline provided. There shall be five (5) letters provided.</p> <p><u>LETTERING</u> There shall be non-reflective vinyl lettering, 5.00" high provided. There shall be ten (10) letters provided.</p> <p><u>CAB GRILLE DESIGN</u> An American flag design shall be painted on the cab grille.</p> <p><u>MALTESE CROSS INSTALLATION</u> There shall be one (1) pair of Maltese crosses, comprised of genuine gold leaf material, provided and installed on designated cab doors.</p> <p><u>RUST PROOF / UNDERCOAT, CUSTOM CHASSIS</u> The rust proof/undercoat option shall provide additional paint to the chassis frame rails and a protective coating that shall help fight corrosion.</p> | | |

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| | Yes | No |
| <p>Rust proof / Undercoat Process</p> <p>A coating shall be applied to the custom chassis once the cab, pump and body mounting angles have been installed. The coating texture shall be waxy and pliable after drying so it shall not chip, crack, or peel off during normal vehicle operations.</p> <p>The rust proofing material shall be the color black, and is a coating of a corrosion inhibitor for long-term protection against corrosion.</p> <p>The material shall be applied to the following areas:</p> <ul style="list-style-type: none"> • Outside of the chassis frame rails (top & side) • Top of the frame rails • Top of cross members • Inside of the frame rails - in and around harnesses keeping coating off harnesses as best as possible • Between the frame and liner - coating shall be applied after frame and liner are assembled using a wand to apply material between as best as possible • Top of the body mounting angles (including rear platform) • Top of air tanks • Top of fuel tank <p><u>RUST PROOFING/UNDERCOATING</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> <p>Body and cab wheel well fender liners, on the back side only.</p> <p>Underside of body and cab sheet metal, and structural components.</p> <p>Underside and vertical sides of all sheet metal compartmentation, including support angles.</p> <p>Structural support members under running boards, rear platforms, battery boxes, walkways, etc.</p> | | |

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| | Yes | No |
| <p><u>FIRE APPARATUS PARTS MANUAL</u></p> <p>One (1) custom parts manuals for the complete fire apparatus shall be provided in hard copy with the completed unit.</p> <p>One (1) compact disc (CD) shall also be provided that shall include all of the information from the above manual.</p> <p>The manual 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>The 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 this manual is 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>One (1) chassis service manual containing parts and service information on major components shall be provided with the completed unit.</p> <p>One (1) compact disk (CD) shall also be provided that shall include all of the information from the above manual.</p> <p>The manuals shall contain the following sections:</p> <ul style="list-style-type: none">- Job number- Table of contents- Troubleshooting | | |

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| <ul style="list-style-type: none"> - Front Axle/Suspension - Brakes - Engine - Tires - Wheels - Cab - Electrical, DC - Air Systems - Plumbing - Appendix <p>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.</p> <p><u>MANUALS, CHASSIS OPERATION</u></p> <p>One (1) chassis operation manual shall be provided.</p> <p>One (1) compact disk (CD) shall also be provided that shall include all of the information from the above manual.</p> <p><u>ELECTRICAL WIRING DIAGRAMS</u></p> <p>Two (2) paper copies and one (1) CD copy of the electrical wiring diagrams, prepared for the model of chassis and body, shall be provided.</p> <p><u>ENGINE WARRANTY</u></p> <p>A Detroit Diesel five (5) year limited engine warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>STEERING GEAR WARRANTY</u></p> <p>A Sheppard three (3) year limited steering gear warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>FIFTY (50) YEAR STRUCTURAL INTEGRITY</u></p> <p>The chassis frame and crossmembers shall be provided with a fifty (50) year material and workmanship limited warranty. The warranty shall cover the chassis frame and crossmembers as</p> | | |

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| <p>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>FRONT AXLE THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY</u> Independent front suspension shall be provided with a three (3) year material and workmanship limited warranty. The manufacturer's warranty shall provide that the independent front suspension and steering gears be free from any defect related to material and workmanship on the portion of the apparatus built by the manufacturer that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (No exception).</p> <p><u>REAR AXLE TWO (2) YEAR MATERIAL AND WORKMANSHIP WARRANTY</u> A Meritor™ Axle two (2) year limited warranty shall be provided.</p> <p><u>ABS BRAKE SYSTEM THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY</u> A Meritor Wabco™ ABS brake system three (3) year limited warranty shall be provided.</p> <p><u>TEN (10) YEAR STRUCTURAL INTEGRITY</u> 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.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (No exception).</p> <p><u>TEN (10) YEAR PAINT AND CORROSION</u> Each new piece of apparatus shall be provided with a ten (10) year paint and corrosion limited warranty on the apparatus cab.</p> <p>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>TWO (2) YEAR MATERIAL AND WORKMANSHIP</u> The cab power step shall be provided with a two (2) year material and workmanship limited warranty. The warranty shall cover the power step to be free from defects in material and workmanship that would arise under normal use and service.</p> | | |

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| <p>A copy of the warranty certificate shall be submitted with the bid package (No Exception).</p> <p><u>FIVE (5) YEAR MATERIAL AND WORKMANSHIP</u></p> <p>The electronic modules and displays shall be provided with a five (5) year material and workmanship limited warranty. The warranty shall cover electronic modules to be free from failures caused by defects in material and workmanship.</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>TEN (10) YEAR STRUCTURAL INTEGRITY</u></p> <p>Each new piece of apparatus shall be provided with a ten (10) 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> | | |

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| <p><u>ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY</u></p> <p>A Gortite roll-up door limited warranty shall be provided. The mechanical components of the roll-up door shall be warranted against defects in material and workmanship for the lifetime of the vehicle. A six (6) year limited warranty shall be provided on painted and satin roll up doors.</p> <p>A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>PUMP WARRANTY</u></p> <p>The Waterous pump shall be provided with a five (5) year 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>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>TWO (2) YEAR GENERATOR MATERIAL AND WORKMANSHIP WARRANTY</u></p> <p>A Harrison Hydra-Gen generator two (2) year limited warranty shall be provided.</p> <p><u>TEN (10) YEAR PAINT AND CORROSION</u></p> <p>Each new piece of apparatus shall be provided with a ten (10) year 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>THREE (3) YEAR MATERIAL AND WORKMANSHIP</u></p> <p>The gold leaf lamination shall be provided with a three (3) year material and workmanship limited warranty. The warranty shall cover the gold leaf lamination 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> | | |

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| <p><u>TWO (2) YEAR BASIC</u></p> <p>Each new piece of apparatus shall be provided with a two (2) year basic apparatus material and workmanship limited warranty on the chassis. The manufacturer's warranty shall provide for repairs to correct any defect related to material and workmanship on the portion of the apparatus built by the manufacturer that would arise under normal use and service. 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 bid.</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 states that the cab must meet or exceed the requirements below:</p> <ul style="list-style-type: none"> - 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 <p>The cab shall be subjected to a roof crush force of 26,400 lb. This value shall be 120 percent of the ECE 29 criteria, and equivalent to the front axle rating up to a maximum of ten (10) metric tons.</p> <ul style="list-style-type: none"> - Side Impact | | |

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The cab shall be subjected to dynamic preload when a 14,060-lb moving barrier is slammed into the side of the cab at 5.10 mph, striking with an impact of 12,200 ft-lb of energy. This test shall closely represent the forces a cab shall see in a rollover incident.

- Frontal Impact

The cab shall withstand a frontal force produced from 65,000 ft-lb of energy using a swing-bob type platen.

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

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.
 - The alternator rating under the conditions specified per:
 - Applicable NFPA 1901 or 1906 (Current Edition).
 - The minimum continuous load of each component that is specified per:
 - 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.

All of the above listed items shall be provided by the bidder per the applicable NFPA 1901 or 1906 (Current Edition).