

Invitation for Bid	Bid Deposit Required All bids shall be accompanied by a bid deposit in the form of a certified, treasurers check (no cash) issued by a responsible bank or trust company made payable to the City of Cambridge or a bid bond, in an amount not less than 5% of the value
FILE NO: 6681	
COMMODITY: To Furnish and Deliver Qty of One (1) Custom Built Heavy Duty Rescue & One (1) Custom Built 1250 GPM Foam Pumper-for the City of Cambridge Fire Department	
NAME OF BIDDER:	
BIDDER'S FED. ID.	

TO: Amy L. Witts Purchasing Agent PH: (617)349-4310 FX: (617)349-4008
795 Massachusetts Avenue, Room 303
Cambridge, MA 02139

The undersigned submits this sealed bid to provide the commodity or services identified above, described in the specifications herein and advertised in the **CAMBRIDGE CHRONICLE** on **THURSDAY, DECEMBER 18, 2014** which is to be opened and publicly read at the Office of the Purchasing Agent, City Hall, 795 Mass. Ave., Room 303, Cambridge, MA at 11:00 a.m. on **THURSDAY, JANUARY 8, 2015**. This bid may be downloaded from the City's web site, www.CambridgeMA.gov, Online Services, Purchasing Bid list, File no. 6681. Parking is limited at this location. It is strongly recommended that bids are mailed or delivered in advanced of the due date and time. Late proposals will not be accepted.

The undersigned certifies that this bid is made without collusion with any other person, firm or corporation making any other bid or who otherwise would make a bid. The undersigned agrees to furnish the commodity or services in strict accordance with the bid documents, which consist of this Invitation for Bid and all attachments hereto.

The envelope containing the bid must be labeled: "This envelope contains a bid" **To Furnish and Deliver Qty of One (1) Custom Built Heavy Duty Rescue & One (1) Custom Built 1250 GPM Foam Pumper**" for the City of Cambridge Fire Department opened at 11:00 A.M. on Thursday, January 8, 2015". The bid and all documents submitted with it are public records.

All bids shall be accompanied by a bid deposit in the form of a certified, treasurers check (no cash) issued by a responsible bank or trust company made payable to the City of Cambridge or a bid bond, in an amount not less then 5% of the value of the bid.

This bid process and the award of the contract are made in conformity with M.G.L. c. 30B, unless otherwise stated.

See other side of this form for General Terms and Conditions that shall become part of any Contract awarded through this Invitation for Bid.

This bid includes addenda numbered: _____

SIGNATURE OF BIDDER: _____

TITLE OF SIGNATORY _____

ADDRESS OF BIDDER _____

TELEPHONE NUMBER _____ **FAX NUMBER:** _____

Please check one of the following and insert the requested information:

() Corporation, incorporated in the State of: _____

() Partnership. Names of partners: _____

() Individual: _____

Name of Bidder: _____

GENERAL TERMS AND CONDITIONS

LAWS: All deliveries shall conform in every respect with all applicable laws of the Federal government, Commonwealth of Massachusetts and City of Cambridge.

EQUAL OPPORTUNITY: The Vendor in the performance of the contract shall not discriminate on the grounds of race, color, religious creed, national origin or ancestry, age, disability, sexual orientation, marital status, family status, military status, source of income, or sex in employment practices or in the selection or retention of subcontractors, and in the procurement of materials or rental of equipment. The City may cancel, terminate or suspend the contract in whole or in part for any violation of this paragraph

TAXES: Purchases made by the City are exempt from the payment of Federal excise tax and the payment of Commonwealth of Massachusetts sales tax (except for gasoline) and any such taxes must not be included in the bid prices.

QUANTITIES: Unless otherwise stated, the quantities set forth herein are ESTIMATES ONLY. The City reserves the right to purchase the commodity(ies) specified in any amount less than the estimated amount.

BID PRICES: Bid prices shall include transportation and delivery charges fully prepaid to the City of Cambridge destination. Where the unit price and the total price are at variance, the unit price will prevail.

DELIVERY AND PACKAGING: Deliveries must be made in such quantities as called for in the purchase order and in the manufacturer's original packages. All deliveries must be **"inside" delivery with no assistance from City personnel. Tailgate deliveries will not be accepted.** Rejected material will be returned to the vendor at the vendor's expense.

MODIFICATION OF BIDS: Prior to bid opening, a bidder may correct, modify or withdraw its bid by making the request in writing prior to the time and date for the bid opening. All corrections and modifications must be delivered to the Purchasing Department in a sealed envelope indicating that it contains a modification or correction of the original bid submitted for the particular commodity and indicating the time and date of the bid opening.

REJECTION OF BIDS: The City reserves the right to reject any and all bids if it is in best interest of the City to do so.

AWARD OF CONTRACT: Contract(s) will be awarded within forty-five days of the bid opening unless award date is extended by consent of all parties concerned.

INDEMNITY: Unless otherwise provided by law, the Vendor will indemnify and hold harmless the City against any and all liability, loss, damages, costs or expenses for personal injury or damage to real or tangible personal property which the City may sustain, incur or be required to pay, arising out of or in connection with the performance of the Contract by reason of any negligent action/inaction or willful misconduct by the Contractor, its agents, servants or employees

TERMINATION OF CONTRACT: Except as otherwise provided in the Articles of Agreement, the City may terminate the contract upon seven days notice.

ASSIGNABILITY: The Vendor shall not assign, sell, subcontract or otherwise transfer any interest in this contract without the prior written consent of the City.

MATERIAL SAFETY DATA SHEETS: Pursuant to M.G.L. c. 111F, ss. 8, 9, and 10, any vendor who receives a contract resulting from this invitation agrees to submit a Material Safety Data Sheet for each toxic or hazardous substance or mixture containing such substance when deliveries are made. The vendor agrees to comply with all requirements set forth in the pertinent laws above.

Name of Bidder: _____

**City of Cambridge
Purchasing Department**

TO: Amy L: Witts, Purchasing Agent
City Hall, Cambridge, Massachusetts 02139

The undersigned hereby proposes to furnish, and deliver **Qty of One (1) Custom Built Heavy Duty Rescue & One (1) Custom Built 1250 GPM Foam Pumper**-for the Cambridge Fire Department, all in accordance with the attached specifications and following proposal schedule.

Prices must remain FIRM during the entire contract period. One award will be made as a result of this Invitation for Bid. The contract will be awarded to the responsive and responsible bidder offering the lowest price for the Qty of One (1) Custom Built Heavy Duty Rescue & One (1) Custom Built 1250 GPM Foam Pumper.

Contract will be awarded within forty-five days, unless award date is extended by consent of all parties concerned.

Prior to bid opening, a bidder may correct, modify or withdraw its bid by making the request in writing prior to the time and date for the bid opening. All corrections and modifications must be delivered to the Purchasing Department in a sealed envelope with a notation on the envelope indicating that it contains a modification or correction of the original bid submitted for the particular commodity and indicating the date and time of the bid opening.

A sample contract is attached hereto. The bidder must be willing to sign the City's contract. The City will not accept a bidder's terms & conditions.

Living Wage Requirements

The City of Cambridge has a Living Wage Requirement that establishes minimum hourly rates for all personnel providing contract services to the City. The City of Cambridge's Living Wage as of March 1, 2012 is \$14.71 per hour. The Living Wage requirements are attached.

Attention is called to the insurance and bond requirements herein.

Please submit your bid in duplicate (One original and one copy). Do not submit bids in hard binders.

Bid Deposit

All bids shall be accompanied by a bid deposit in the form of a certified, treasurers check (no cash) issued by a responsible bank or trust company made payable to the City of Cambridge or a bid bond, in an amount not less than 5% of the value of the bid.

Performance Bond

The successful bidder will be required to furnish a Performance Bond in the amount of one hundred (100%) of the contract sum. Bonds shall be obtained from a surety licensed to do business in the Commonwealth of Massachusetts and the form shall be satisfactory to the City of Cambridge.

Proposals received from bidders who do not manufacture the chassis shall provide a warranty that shall be issued jointly and severally by, and signed by, both the bidder and the chassis manufacturer.

If the successful bidder does not manufacture the chassis, the bidder shall supply a separate warranty bond, in addition to their performance bond, along with their signed contract. This warranty bond shall guarantee all terms and conditions of the warranty and names both the bidder and chassis manufacturer as co-principals. This warranty bond shall be issued for the contract amount and shall remain in force for a term which is consistent with the term of the warranty quoted in the bid.

Questions

Questions concerning this Invitation to Bid **including any exceptions to the specifications** must be submitted in writing and faxed to the Office of the Purchasing Agent, Amy L. Witts, Fax # 617-349-4008. All questions must be submitted no later than **Monday, December 29, 2014 by 4:00 p.m.** An addendum will be posted to the website to notify all bidders of the questions and answers.

Name of Bidder: _____

Please check the website for Addendums before submitting your bid to the City. Bidders will not be notified individually of Addendums. Please check the bidders list on the website. If your firm is not listed on the bidders list please click on "Registry" and notify us that you have downloaded the bid document.

Bid Results

The tab sheet and the contract award information will not be mailed to the bidders individually. A tab sheet with the bid results will be posted to the website soon after the bid opening. The tab sheet will include the "contract award" information as soon as it is determined.

Confidentiality and Public Records Law

All bids or other materials submitted by the vendor in response to this Invitation to Bid will be open for inspection by any person and in accordance with the Massachusetts Public Records Law.

Quality Requirements

A "NO" response, a failure to respond, or a failure to meet any of the following Quality Requirements will result in a rejection of your bid.

Circle Yes or No for each of the following Quality Requirements.

- | | | |
|--|-----|----|
| 1. Bidder has been in business for minimum of ten years. | Yes | No |
| 2. The warranty and repair facility must utilize NFPA certified Emergency Vehicle Technicians (EVT) to perform work on the City of Cambridge fire apparatus | Yes | No |
| 3. The successful bidder has and will maintain a factory authorized service center within 50 miles of the City of Cambridge Fire Headquarters located at 491 Broadway, Cambridge, MA | Yes | No |
| 4. Bidder can provide, upon request, proof of financial solvency. | Yes | No |
| 5. The bidder has the following qualifications: | | |
| A. Minimum of eight years of continuous ownership and management. | Yes | No |
| B. Bidder has access to sheet metal fabrication and assembly. | Yes | No |
| C. In house paint facility large enough to accommodate Fire apparatus | Yes | No |
| D. Certified pump mechanics. | Yes | No |
| E. Certified welders. | Yes | No |
| F. International air terminal within thirty mile for Receipt of air shipments of service parts. | Yes | No |
| G. Available engineer with a minimum of 20 years experience in automotive fire apparatus and aerial design. | Yes | No |
| H. PRO-LINK 9000 or equivalent diesel engine reader and analytical Device with ATEC Option for transmissions on Premises- owned by the service center. | Yes | No |

Name of Bidder: _____

Bid Submissions

Failure to submit documents requested may result in the determination that your bid is non- responsive unless the City deems such failure to be a minor informality.

1. Bidder shall furnish evidence satisfactory to the City of its ability to construct the apparatus specified and shall state the location of the factory where the apparatus is to be built.

State

2. Bidder shall state minimum turn around time for repairs and parts.

- _____
3. Bidder shall submit a set of contractor's specifications consisting of a detailed description of the apparatus and equipment proposed, indicated size, type, model and make of all component parts and equipment.

4. Bidder shall provide the location of the authorized service center within 50 miles of the City of Cambridge Fire Department Headquarters located at 491 Broadway, Cambridge MA.

Address	City	State	Zip code
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5. Bidder shall submit copies of certificates referenced under quality requirements 5D and 5E.

6. **Bidder shall respond to the Cambridge Fire Apparatus specifications attached and shall "answer Bidder Complies yes or no" for each paragraph and submit all the pages with your bid.**

Price Proposal

Qty of One (1) Custom Built Heavy Duty Rescue \$ _____

Qty One (1) Custom Built 1250 GPM Foam Pumper \$ _____

Total Lump Sum of \$ _____

Total Lump Sum in words: _____

Delivery charge must be included in proposal price.

All prices are to remain firm.

Signature of Bidder: _____

Instructions for acknowledging the attached Cambridge Fire Department Specifications.

Please refer to the attached Cambridge Fire Department Specifications and check Bidder Complies yes or no for each paragraph, sign each page of the specifications and submit with your bid.

Name of Bidder: _____

**Americans with Disabilities Act (42 U.S.C. 12131)
Section 504 of the Rehabilitation Act of 1973
Tax Compliance/Anti-Collusion Statement
Debarment Statement**

The Americans with Disabilities Act (the "Act") applies to all employers of fifteen or more employees. All vendors that are subject to the Act must comply with its provisions. In further compliance with the Act, all Contractors who enter into contracts with the City are prohibited from discrimination against the City's employees, regardless of the size of the Contractor.

The Act protects against discrimination on the basis of "disability", which is defined as a physical or mental impairment that substantially limits at least one "major life activity"; discrimination against a person having a history or record of such impairment; and discrimination against an individual regarded - even if inaccurately - as having such an impairment. The Act also expressly prohibits discrimination that is based on an individual's relationship or association with a disabled person.

The Contractor shall not discriminate against any qualified employee or job applicant with a disability and will make the activities, programs and services covered by any contract awarded through this procurement readily accessible to and usable by individuals with disabilities. To be qualified for a job, or to avail oneself of the Contractor's services, the individual with the disability must meet the essential eligibility requirements for receipt of the Contractor's services or participation in the Contractor's programs or activities with or without: 1) reasonable modifications to the Contractor's rules, policies and practices; 2) removal of architectural, communication, or transportation barriers; or, 3) provisions of auxiliary aids and services.

By submitting its contract, the Contractor certifies to the City of Cambridge that it understands and will comply with all applicable provisions of the Act, including compliance with applicable provisions of Section 504 of the Rehabilitation Act of 1973, if the Contractor is receiving federal funds.

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

As required by M.G.L. c. 62C, §49A, the undersigned certifies under the penalties of perjury that the Contractor has complied with all laws of the commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

The undersigned certifies that it is not currently subject to any State or Federal debarment order.

Date: _____

(Print Name of person signing bid)

(Signature & Title)

This form must be submitted with your bid

Name of Bidder: _____

CORI COMPLIANCE FORM

Persons and businesses supplying goods and/or services to the City of Cambridge ("Vendors"), who are required by law to perform CORI checks, are further required by Section 2.112.060 of the Cambridge Municipal Code to employ fair policies, practices and standards relating to the screening and identification of persons with criminal backgrounds through the CORI system. Such Vendors, when entering into contracts with the City of Cambridge, must affirm that their policies, practices and standards regarding CORI information are consistent with the policies, practices and standards employed by the City of Cambridge as set forth in the City of Cambridge CORI Policy ("CORI Policy") attached hereto.

CERTIFICATION

The undersigned certifies under penalties of perjury that the Vendor employs CORI related policies, practices and standards that are consistent with the provisions of the attached CORI Policy. **All Vendors must check one of the three lines below.**

1. _____ CORI checks are not performed on any Applicants.
2. _____ CORI checks are performed on some or all Applicants. The Vendor, by affixing a signature below, affirms under penalties of perjury that its CORI policies, practices and standards are consistent with the policies, practices and standards set forth in the attached CORI Policy.
3. _____ CORI checks are performed on some or all Applicants. The Vendor's CORI policies, practices and standards are not consistent with the attached CORI Policy. Please explain on a separate sheet of paper.

(Typed or printed name of person signing quotation, bid or Proposal)

Signature

(Name of Business)

NOTE:

The City Manager, in his sole discretion may grant a waiver to any Vendor on a contract by contract basis.

Instructions for Completing CORI Compliance Form:

A Vendor should not check Line 1 unless it performs NO CORI checks on ANY applicant. A Vendor who checks Line 2 certifies that the Vendor's CORI policy conforms to the policies, practices and standards set forth in the City's CORI Policy. A Vendor with a CORI policy that does NOT conform to the City's CORI Policy must check Line 3 and explain the reasons for its nonconformance in writing. Vendors, who check Line 3, will not be permitted to enter into contracts with the City, absent a waiver by the City Manager.

This form must be submitted with your bid

Name of Bidder: _____

Cambridge Fire Department Apparatus Specification

Bidder Complies	
Yes	No

Cambridge Fire Department

491 Broadway
Cambridge, Massachusetts 02138

SPECIFICATIONS FOR ONE (1) CUSTOM BUILT HEAVY DUTY RESCUE & ONE (1) CUSTOM BUILT 1250 GPM FOAM PUMPER

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 shall result in immediate rejection of the bid.**

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

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

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

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

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

Cambridge Fire Department Apparatus Specification

	Bidder Complies	
	Yes	No
<p>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 CITY'S PURCHASING DEPARTMENT HAS THE RIGHT TO REJECT ANY AND ALL BIDS THAT DO NOT MEET THESE SPECIFICATIONS AND OTHER BID REQUIREMENTS.</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 must indicate in the "yes/no" column if their bid complies on each item (paragraph) specified.</p> <p>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.</p> <p>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</p>		

Cambridge Fire Department Apparatus Specification

	Bidder Complies	
	Yes	No
<p>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.</p> <p>Proposals that are found to have deviations without listing them or bids taking total exceptions to these advertised specifications will be rejected. (no exceptions)</p> <p>Bids not including all exceptions is a material breach and shall result in the bid being immediately rejected. (no exceptions)</p> <p><u>GENERAL DESIGN AND CONSTRUCTION</u></p> <p>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.</p> <p>All bidders shall provide a list of the company, manufacturing location, and engineering source for each individual major component, including but not limited to the welded cab assembly, the pumphouse module assembly, the chassis assembly, body and electrical system. Apparatus using any subcontracted cab, chassis, pump module, electrical system or body will not be acceptable.</p> <p>The apparatus shall be designed with due consideration to distribution of load between the front and rear axles. Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Association.</p> <p>The bidder shall make accurate statements as to the apparatus weight and dimensions.</p> <p><u>QUALITY AND WORKMANSHIP</u></p> <p>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 required to have an American welding Society certified welding inspector in plant during working hours to monitor weld quality.</p> <p>The manufacturer shall also 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</p>		

Cambridge Fire Department Apparatus Specification

	Bidder Complies	
	Yes	No
<p>for design, manufacture, installation and service. A copy of the certificate of compliance shall be included with the bid.</p> <p>To demonstrate the quality of the product and service, each bidder shall provide a list of at least five (5) fire departments/municipalities in the region that have bought a second time from the representing dealer. An exception to this requirement shall not be acceptable.</p> <p><u>DELIVERY</u></p> <p>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></p> <p>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 drivers 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></p> <p>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></p> <p>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> <p>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.</p> <p>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.</p>		

Cambridge Fire Department Apparatus Specification

	Bidder Complies	
	Yes	No
<p>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.</p> <p>D) The apparatus, fully loaded, shall be capable of obtaining a speed of 50 mph on a level concrete highway with the engine not exceeding the governed rpm (full load).</p> <p><u>FAILURE TO MEET TEST</u></p> <p>In the event the apparatus fails to meet the test requirements of these specifications on the first trial, second trials may be made at the option of the bidder within 30 days of the date of the first trial. Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection. failure to comply with changes to conform to any clause of the specifications, within 30 days after notice is given to the bidder of such changes, shall also be cause for rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the purchaser or its use by the purchaser during the above-specified period with the permission of the bidder shall not constitute acceptance.</p> <p><u>SERVICE AND WARRANTY SUPPORT (DEALERSHIP)</u></p> <p>TO INSURE FULL SERVICE AFTER DELIVERY, THE SELLING BIDDER/DEALERSHIP MUST BE CAPABLE OF PROVIDING SERVICE WHEN REQUIRED.</p> <p>The bidder/dealership shall show that the company is in position to render prompt service and to furnish replacement parts.</p> <p>Each bidder/dealership must be able to display that they are actively in the fire apparatus service business by operating a factory authorized service center and parts repository capable of satisfying the warranty service requirements and parts requirements of the vehicle(s) being purchased.</p> <p>The bidder/dealership must state the location of this authorized service center. This service center must have a staff of factory-trained mechanics, well versed in all aspects of service for all major components of the apparatus. The service center must be within one hundred (100) miles of the Cambridge Fire Department.</p> <p>The service center shall have the following minimum qualifications:</p> <ol style="list-style-type: none"> 1. Minimum 10 years of continuous ownership and management 2. Total in-house body shop capability 3. Minimum 80' down draft paint booth with environmental approval 4. Pump mechanics certified by the pump manufacturer 5. Automotive electricians trained by the apparatus factory 6. PRO-LINK 9000 analytical device with current software 7. Lap top shop computer with current multiplex analytical software and wireless modem for direct truck to factory communication 		

Cambridge Fire Department Apparatus Specification

	Bidder Complies	
	Yes	No
<p>8. Full time body repair and automotive paint staff</p> <p>9. Certified Master ASE and EVT Technicians</p> <p>10. Warranty center for International Harvester®, Ford®, Caterpillar®, Cummins®, Allison® Transmission, Hendrickson®, Meritor®, Waterous® and Hale® Pumps</p> <p>11. Computerized parts listing</p> <p>12. Factory Trained aerial and hydraulic repair specialists</p> <p>13. 24 Hour Road & Towing service vehicle</p> <p>14. Daily Parts Delivery to the customer location</p> <p>15 DOT & Massachusetts Inspection Station</p> <p>16 Hunter® Laser Truck Alignment System</p> <p>17. Robinair® Air Conditioning Analyzer</p> <p>18. Massachusetts Certified Air Conditioning Technician</p> <p>Current Certifications shall be furnished at time of bid (NO EXCEPTIONS).</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 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>		

Cambridge Fire Department Apparatus Specification

	Bidder Complies	
	Yes	No
<p>Certification of slip resistance of all stepping, standing and walking surfaces shall be supplied with delivery of the apparatus.</p> <p>A plate that is highly visible to the driver while seated shall be provided. This plate shall show the overall height, length, and gross vehicle weight rating.</p> <p>The manufacturer shall have programs in place for training, proficiency testing and performance for any staff involved with certifications.</p> <p>An official of the company shall designate, in writing, who is qualified to witness and certify test results.</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 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>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>BREATHING AIR TEST</u></p> <p>If the unit has breathing air, the apparatus manufacturer shall draw an air sample from the air system and certify that the air quality meets the requirements of NFPA 1989, <i>Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection</i>.</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>		

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	Bidder Complies	
	Yes	No
<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 EXCEPTIONS).</p> <p><u>INSPECTION TRIP(S)</u> There shall be two (2) factory inspection trip(s) for three (3) members of the Cambridge Fire Department customer representative(s). The inspection trip(s) shall be scheduled at times mutually agreed upon between the manufacturer's representative and the customer. .</p> <p>The apparatus pre-construction conference and final inspection shall be completed simultaneously so as to minimize travel expense.</p> <p><u>TRAINING</u> A qualified training engineer shall be provided by the bidder. The training engineer shall instruct the Fire Department personnel in the operation and maintenance of the HDR chassis, and other appurtenances four (4) days, FOAM Pumper chassis pump and foam operation for a period of not less than four (4) days.</p> <p><u>CONTRACT</u> The contract for the specified apparatus shall be directly with the City of Cambridge and the manufacturer. Contracts with dealers or representatives of the manufacturer will not be executed.</p> <p><u>NEW AND UNUSED</u> All components shall be new and unused (with the exception of use incidental to the construction, testing, transport and delivery of the apparatus). Any old or used components shall constitute grounds for automatic rejection of the entire apparatus.</p> <p>Bidders must identify by manufacturer and model number purchased components utilized in the apparatus proposed in the bid submission. In order to make valid comparisons between bids, components must be accurately identified. Therefore any bid or technical proposal which does not so identify the components being offered will not be considered.</p> <p>Any potential to utilize progress payment discounts must be defined clearly in the (“bidder’s) proposal.</p> <p><u>CONSTRUCTION REVIEW AND WEEKLY PROGRESS REPORTS</u> The successful bidder shall also provide weekly photographic progress reports and inspection services, provided by an independent third party for both apparatus.</p> <ol style="list-style-type: none"> 1) Comprehensive review of the bid documents with the factory order to ensure accuracy. 2) Weekly progress reports including photographs of the apparatus or the major components as they are being constructed. The reports shall commence at the beginning of the 		

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	Bidder Complies	
	Yes	No
<p>manufacturing process and shall continue until just prior to the final inspection. The reports shall show the progress of the apparatus through the course of each week. Special attention shall be given to show the unique features and aspects of the apparatus as construction progresses.</p> <p>3) In addition, after the final inspection has been completed by the customer or third party, the third party inspector shall review all items noted in the inspection for completion prior to the apparatus leaving the manufacturing facility for delivery to the local service area for pre-delivery service.</p> <p><u>AFTERMARKET SUPPORT WEBSITE</u></p> <p>A Customer Service website shall provide authorized dealers access to comprehensive information pertaining to the maintenance and service of their customer's apparatus. This tool shall provide the authorized dealer the ability to service and support their customers to the best of their ability with factory support at their fingertips.</p> <p>This website shall also be accessible to the end user through the guest login. Limited access is available and vehicle specific parts information accessible by entering a specific VIN number. All end users should see their local authorized dealer for additional support and service.</p> <p>The website shall provide the following to the designated individuals:</p> <ul style="list-style-type: none"> - Authorized dealer only - ability to access truck detail information on the major components of the vehicle, warranty information, available vehicle photographs, vehicle drawings, sales options, applicable vehicle software downloads, etc. - Authorized dealer and customer - parts look-up capability, with the aid of digital photographs, part drawings, and assembly drawings. - Authorized dealer only - ability to electronically submit warranty claims directly to the factory for reimbursement. - Authorized dealer only - accessibility to multiple dealer reports that allow the dealership to maintain communication with the customer on the status of orders, claims, and phone contacts. - Authorized dealer and customer - access to all currently published Operation and Maintenance and Service publications. - Authorized dealer only - access to manufacturer Service Bulletins and Work Instructions containing information on current service topics and recommendations provided. - Authorized dealer and customer - access to upcoming training classes offered by the manufacturer. 		

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	Yes	No
<p>- Authorized dealer only - access to interactive electronic learning modules (Operators Guides) covering the operation of major vehicle components.</p> <p>- Authorized dealer only - access to customer service articles, corporate news, quarterly newsletters, and key contacts.</p> <p><u>BID BOND</u> All bidders shall provide a bid bond as security for the bid in the form of a 15% bid bond to accompany their bid for the entire project (both apparatus). This bid bond shall be issued by a Surety Company who is listed on the U.S. Treasury Departments list of acceptable sureties as published in Department Circular 570. The bid bond shall be issued by an authorized representative of the Surety Company and shall be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond shall include language, which assures that the bidder/principal shall give a bond or bonds as may be specified in the bidding or contract documents, with good and sufficient surety for the faithful performance of the contract, including the Basic One (1) Year Limited Warranty, and for the prompt payment of labor and material furnished in the prosecution of the contract.</p> <p>Proposals received from bidders who do not manufacture the chassis shall provide a warranty that shall be issued jointly and severally by, and signed by, both the bidder and the chassis manufacturer.</p> <p>If the successful bidder does not manufacture the chassis, the bidder shall supply a warranty bond, in addition to their performance bond, along with their signed contract. This warranty bond shall guarantee all terms and conditions of the Basic One (1) Year Limited Warranty and names both the bidder and chassis manufacturer as co-principals. This warranty bond shall be issued for the contract amount and shall remain in force for a term which is consistent with the term of the Basic One (1) Year Limited Warranty.</p> <p>Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle shall apply only to the Basic One (1) Year Limited Warranty for such vehicle. Any surety bond related to the sale of a vehicle shall not apply to any other warranties that are included within this bid (OEM or otherwise) or to the warranties (if any) of any third party of any part, component, attachment or accessory that is incorporated into or attached to the vehicle. In the event of any contradiction or inconsistency between this provision and any other document or assertion, this provision shall prevail.</p> <p><u>PERFORMANCE BOND, 1 YEAR</u> The successful bidder shall furnish a Performance and Payment bond (Bond) equal to 100 percent of the total contract amount within 30 days of the notice of award. Such Bond shall be in a form acceptable to the Owner and issued by a surety company included within the Department</p>		

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	Bidder Complies	
	Yes	No
<p>of Treasury's Listing of Approved Sureties (Department Circular 570) with a minimum A.M. Best Financial Strength Rating of A and Size Category of XV. In the event of a bond issued by a surety of a lesser Size Category, a minimum Financial Strength rating of A+ is required.</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 Basic One (1) Year Limited Warranty period included within this proposal. Owner agrees that the penal amount of this bond shall be simultaneously amended to 100% percent of the total contract amount upon satisfactory acceptance and delivery of the vehicle(s) included herein. Notwithstanding anything contained within this contract to the contrary, the surety's liability for any warranties of any type shall not exceed one (1) year from the date of such satisfactory acceptance and delivery, or the actual Basic One (1) Year Limited Warranty period, whichever is shorter.</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 approval drawing.</p> <p><u>DRAWING, CAB TOP VIEW HDR</u></p> <p>On the sales drawing a top view of the cab seating and EMS cabinets shall be provided. The top view shall be a reference only of the seating and EMS cabinets in the order.</p>		

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	Bidder Complies	
	Yes	No
<p><u>HEAVY DUTY RESCUE WARRANTIES</u> The warranty on the apparatus shall begin upon transfer of title, certification of origin to the City of Cambridge.</p> <p><u>ONE (1) YEAR MATERIAL AND WORKMANSHIP</u> Each new piece of apparatus shall be provided with a minimum one (1) year basic apparatus material and workmanship limited warranty. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.</p> <p>The Cambridge Fire Department will perform warranty repairs at warranty rates with prior approval from the manufacturer.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>FIFTY (50) YEAR STRUCTURAL INTEGRITY</u> 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 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>STEERING GEAR WARRANTY</u> 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>REAR AXLE FIVE (5) YEAR MATERIAL AND WORKMANSHIP WARRANTY</u> Independent rear suspension shall be provided with a five (5) year material and workmanship limited warranty. The manufacturer's warranty shall provide that the independent rear suspension 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.</p>		

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	Bidder Complies	
	Yes	No
<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>ENGINE WARRANTY</u> 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>TRANSMISSION WARRANTY</u> 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> 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>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. 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> The electronic modules and display(s) 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. A copy of the warranty certificate shall be submitted with the bid package (No Exception).</p> <p><u>FIFTEEN (15) YEAR STRUCTURAL INTEGRITY</u> Each new piece of apparatus shall be provided with a fifteen (15) 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. A copy of the warranty certificate shall be submitted with the bid package (No Exception).</p>		

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	Bidder Complies	
	Yes	No
<p><u>ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY</u></p> <p>An AMDOR roll-up door limited warranty shall be provided. The roll-up door shall be warranted against manufacturing defects for a period of ten (10) years. A five (5) year limited warranty shall be provided on painted roll up doors.</p> <p>A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>FIVE (5) YEAR GENERATOR WARRANTY</u></p> <p>There shall be a 5 year limited warranty provided for Onan hydraulic and Protec generators.</p> <p><u>TEN (10) YEAR PAINT AND CORROSION NON PRO-RATED</u></p> <p>Each new piece of apparatus shall be provided with a ten (10) year paint and corrosion limited warranty on the apparatus cab. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>TWELVE (12) YEAR PAINT AND CORROSION NON PRO-RATED</u></p> <p>Each new piece of apparatus shall be provided with a twelve (12) 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> <p><u>HEAVY DUTY RESCUE CERTIFICATIONS</u></p> <p>The certifications listed below shall be furnished with the bid.</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>		

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	Bidder Complies	
	Yes	No
<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 available prior to the time of delivery.</p> <p><u>POWER STEERING CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a certification stating the power steering system as installed meets the requirements of the component supplier. The certification shall be provided at the time of bid.</p> <p><u>CAB INTEGRITY CERTIFICATION</u></p> <p>The fire apparatus manufacturer shall provide a cab integrity certification with this proposal. The certification shall state that the cab has been tested and certified by an independent third-party test facility. Testing events shall be documented with photographs, real-time and high-speed video, vehicle accelerometers, cart accelerometers, and a laser speed trap. The certification must state 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 <ul style="list-style-type: none"> ○ The cab shall be subjected to a roof crush force of 22,050 lbs. This value meets the ECE 29 criteria and is equivalent to the front axle rating up to a maximum of 10 metric tons. • Additional Roof Crush <ul style="list-style-type: none"> ○ The same cab shall be subjected to a roof crush force of 120,000 lbs. This value exceeds the ECE 29 criteria by nearly 5.4 times. • Side Impact <ul style="list-style-type: none"> ○ The same cab shall be subjected to dynamic preload where a 13,275 lb. moving barrier slams into the side of the cab at 5.5 mph at a force of 13,000 ft.-lbs. This test is part of the SAE J2422 test procedure and more closely represents the forces a cab shall see in a rollover incident. • Frontal Impact <ul style="list-style-type: none"> ○ The same cab shall withstand a frontal impact of 32,600 ft-lbs of force using a moving barrier in accordance with SAE J2420. <p>The same cab shall withstand all tests without any measurable intrusion into the survival space of the occupant area.</p>		

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	Bidder Complies	
	Yes	No
<p><u>CAB DOOR DURABILITY CERTIFICATION</u></p> <p>Robust cab doors help protect occupants. Cab doors shall survive a 200,000 cycle door slam test where the slamming force exceeds 20 G's of deceleration. The bidder shall certify that the sample doors similar to those provided on the apparatus have been tested and have met these criteria without structural damage, latch malfunction, or significant component wear.</p> <p><u>WINDSHIELD WIPER DURABILITY CERTIFICATION</u></p> <p>Visibility during inclement weather is essential to safe apparatus performance. Windshield wipers shall survive a 3 million cycle durability test in accordance with section 6.2 of SAE J198 <i>Windshield Wiper Systems - Trucks, Buses and Multipurpose Vehicles</i>. The successful bidder shall certify prior to delivery that the wiper system design has been tested and that the wiper system has met these criteria.</p> <p><u>ELECTRIC WINDOW DURABILITY CERTIFICATION</u></p> <p>Cab window roll-up systems can cause maintenance problems if not designed for long service life. The window regulator design shall complete 30,000 complete up-down cycles and still function normally when finished. The bidder shall certify that sample doors and windows similar to those provided on the apparatus have been tested and have met these criteria without malfunction or significant component wear.</p> <p><u>SEAT BELT ANCHOR STRENGTH</u></p> <p>Seat belt attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat belt anchor design shall withstand 3000 lb. of pull on both the lap and shoulder belt in accordance with FMVSS 571.210 Seat Belt Assembly Anchorages. The successful bidder shall certify that each anchor design was pull tested to the required force and met the appropriate criteria.</p> <p><u>SEAT MOUNTING STRENGTH</u></p> <p>Seat attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat mounting design shall be tested to withstand 20 G's of force in accordance with FMVSS 571.207 Seating Systems. The successful bidder shall certify that each seat mount and cab structure design was pull tested to the required force and met the appropriate criteria.</p> <p><u>CAB DEFROSTER CERTIFICATION</u></p> <p>Visibility during inclement weather is essential to safe apparatus performance. The defroster system shall clear the required windshield zones in accordance with SAE J381 <i>Windshield Defrosting Systems Test Procedure and Performance Requirements - Trucks, Buses, and Multipurpose Vehicles</i>. The bidder shall certify that the defrost system design has been tested in a cold chamber and passes the SAE J381 criteria.</p>		

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	Bidder Complies	
	Yes	No
<p><u>CAB HEATER CERTIFICATION</u></p> <p>Good cab heat performance and regulation provides a more effective working environment for personnel, whether in-transit, or at a scene. The cab heaters shall warm the cab 75 F from a cold-soak, within 30 minutes when tested using the coolant supply methods found in SAE J381. The bidder shall certify that a substantially similar heater has been tested and has met these criteria.</p> <p><u>AMP DRAW REPORT</u></p> <p>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.</p> <p>The manufacturer of the apparatus shall provide the following:</p> <ul style="list-style-type: none"> • Documentation of the electrical system performance tests. • A written load analysis, which shall include the following: <ul style="list-style-type: none"> ○ The nameplate rating of the alternator. ○ The alternator rating under the conditions specified per: <ul style="list-style-type: none"> ▪ Applicable NFPA 1901 or 1906 (Current Edition). ○ The minimum continuous load of each component that is specified per: <ul style="list-style-type: none"> ▪ Applicable NFPA 1901 or 1906 (Current Edition). ○ Additional loads that, when added to the minimum continuous load, determine the total connected load. ○ Each individual intermittent load. <p>All of the above listed items shall be provided by the bidder per the applicable NFPA 1901 or 1906 (Current Edition).</p>		

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	Bidder Complies	
	Yes	No
<p><u>CHASSIS</u> Chassis provided shall be a new, tilt-type, cab-forward, custom fire apparatus. To ensure years of reliable service, capacity for the intended load to be sustained, and the type of service required, the chassis shall be designed and manufactured for heavy-duty service, utilizing heavy duty 13.00" frame rails, crossmembers, and cab construction as described elsewhere in this specification.</p> <p><u>MAXIMUM OVERALL HEIGHT</u> The maximum overall height of the apparatus shall be 10' 3".</p> <p><u>WHEELBASE</u> The wheelbase of the vehicle shall be no greater than 231.50 inches.</p> <p><u>GVW RATING</u> The gross vehicle weight rating shall be a minimum of 62,800 pounds.</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. 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>FRAME REINFORCEMENT</u> In addition, a full-length mainframe internal "C" liner shall be provided. The liner shall be an internal "C" design that steps to a smaller internal "C" design over the rear axle. It shall be heat-treated steel measuring 12.50" x 3.00" x .25" through the front "C" portion of the liner, stepping to 9.38" x 3.00" x .25" through the rear "C" portion of the liner. Each liner shall have a section modulus of 13.58 cubic inches, yield strength of 110,000 psi, and rbm of 857,462 in-lb. Total rbm at wheelbase center shall be 4,391,869 in-lb.</p> <p>The frame liner shall be mounted inside of the chassis frame rail and extend the full length of the frame.</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>		

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	Bidder Complies	
	Yes	No
Upper and lower control arms shall be used on each side of the axle. Upper control arm castings shall be made of 100,000 psi yield strength 8630 steel and the lower control arm casting shall be made of 55,000 psi yield ductile iron.		
The center cross members and side plates shall be constructed out of 80,000 psi yield strength steel.		
Each control arm shall be mounted to the center section using elastomer bushings. These rubber bushings shall rotate on low friction plain bearings and be lubricated for life. Each bushing shall also have a flange end to absorb longitudinal impact loads, reducing noise and vibrations.		
There shall be nine (9) grease fittings supplied, one (1) on each control arm pivot and one (1) on the steering gear extension.		
The upper control arm shall be shorter than the lower arm so that wheel end geometry provides positive camber when deflected below rated load and negative camber above rated load.		
Camber at load shall be 0 degrees for optimum tire life.		
The ball joint bearing shall be of low friction design and be maintenance free.		
Toe links that are adjustable for alignment of the wheel to the center of the chassis shall be provided.		
The wheel ends must have little to no bump steer when the chassis encounters a hole or obstacle.		
The steering linkage shall provide proper steering angles for the inside and outside wheel, based on the vehicle wheelbase.		
The axle shall have a third party certified turning angle of 45 degrees. Front discharge, front suction, or aluminum wheels shall not infringe on this cramp angle.		
<u>FRONT SUSPENSION</u>		
Front independent suspension shall be provided with a minimum ground rating of 22,800 lb.		
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.		
Each wheel shall have torsion bar type spring. In addition, each front wheel end shall also have energy absorbing jounce bumpers to prevent bottoming of the suspension.		

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	Bidder Complies	
	Yes	No
<p>The suspension design shall be such that there is at least 10.00" of total wheel travel and a minimum of 3.75" before suspension bottoms.</p> <p>The torsion bar anchor lock system allows for simple lean adjustments, without the use of shims. One can adjust for a lean within 15 minutes per side. Anchor adjustment design is such that it allows for ride height adjustment on each side.</p> <p>The independent suspension shall be put through a durability test that has simulated a minimum of 140,000 miles of inner city driving.</p> <p><u>FRONT SHOCK ABSORBERS</u> KONI heavy-duty telescoping shock absorbers shall be provided on the front suspension.</p> <p><u>FRONT OIL SEALS</u> Oil seals with viewing window shall be provided on the front axle.</p> <p><u>FRONT TIRES</u> Front tires shall be Goodyear® 425/65R22.50 radials, 20 ply G296 MSA tread, rated for 22,800 lb maximum axle load and 68 mph maximum speed.</p> <p>The tires shall be mounted on Accuride® 22.50" x 13.00" steel disc type wheels with a ten (10) stud, 11.25" bolt circle.</p> <p><u>TURNING RADIUS REPORT</u> Supplied with the bid shall be a turning radius analysis of the vehicle being proposed. This analysis shall provide the inside turning radius, the outside turning radius, the curb to curb turning radius, and the wall to wall turning radius.</p> <p><u>REAR AXLE</u> The rear axle shall be a tandem axle assembly, of the independent suspension design, with the ability to support a mechanical rear axle steering system. Tandem rear axles shall have a ground rating of 40,000 lb.</p> <p>The rear axles shall be designed for specific use of the independent suspension.</p> <p>The rear independent suspension driving axles shall be equipped with a carrier reduction of 1.69 to 1.00 with a planetary wheel end reduction of 3.55 to 1.00. Driving torque shall be transmitted from the center differential to the planetary wheel drive by means of a half shaft.</p> <p>Oil fills and level checks shall be required at the center differential and the planet wheel end locations.</p>		

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	Bidder Complies	
	Yes	No
<p>Driver controlled inter and intra axle differential locks shall be provided. The locks shall be designed for use on low friction coefficient surfaces. Locks shall be manually controlled by the driver.</p> <p><u>REAR AXLE STEERING</u></p> <p>The tandem rear axle assembly shall include a mechanical rear steering system. The mechanical rear steering system shall be applied to both rear axles.</p> <p>The steering geometry shall be designed to minimize tire scrub of the rear tandem axle tires while reducing the overall turning diameter of the apparatus.</p> <p>The mechanical rear steering system shall not use electronic controls and shall not have a means to be disengaged. Coordinated steering is the only steering mode supported by the mechanical steering system.</p> <p>Rear steering system is actuated by a mechanical means of connecting the front master/slave steering gear system to a rear axle master/slave steering gear system.</p> <p><u>TOP SPEED OF VEHICLE</u></p> <p>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></p> <p>The rear suspension shall be a independent type with a minimum ground rating of 40,000 lbs.</p> <p>The independent suspension shall be configured with upper and lower control arms with a spring seat for a coil spring mounted to the lower control arm. The spring tower shall be integrated into the suspension frame mount. Each control arm has elastomeric bushings at the inner pivot locations with a ball joint bearing at the outer pivot location. All suspension pivot joints shall be of a maintenance free design.</p> <p>The rear independent suspension shall be provided with steering toe links providing tow adjustments and maintaining wheel control throughout the range of wheel travel.</p> <p>The independent suspension shall be designed to provide maximum ride quality when traveling at highway speeds over improved roads or a moderate speeds over secondary road surfaces with minimal transfer of shock and vibration to the apparatus.</p> <p>Each independent suspension shall utilize a coil type of spring. The design shall allow for removal of the spring without the use of any spring compression.</p> <p>The rear suspension shall provide a minimum wheel travel of 10.00", 6.00" jounce and 4.00" of rebound.</p>		

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	Bidder Complies	
	Yes	No
<p><u>REAR OIL SEALS</u> Oil seals shall be provided on the rear axle.</p> <p><u>REAR TIRES</u> Rear tires shall be four (4) Goodyear® super single 425/65R22.5 radials, 20 ply G296 WHA, rated for 45,600 lb maximum axle load and 68 mph maximum speed.</p> <p>The tires shall be mounted on 22.50" x 13.00" steel disc type wheels with a ten (10) stud, 11.25" bolt circle.</p> <p><u>TIRE BALANCE</u> All tires shall be dynamically balanced with wheel weights.</p> <p><u>TIRE PRESSURE MANAGEMENT</u> There shall be a VECSAFE LED tire alert pressure management system provided that shall monitor each tire's pressure. A chrome plated brass 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 20 and 120 psi. The sensor shall activate an integral battery operated LED when the pressure of that tire drops 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 blinking.</p> <p><u>FRONT HUB COVERS</u> Stainless steel hub covers shall be provided on the front axle. An oil level viewing window shall be provided.</p> <p><u>HUB COVERS (REAR)</u> Stainless steel, high hat, hub covers shall be provided on the rear axle hubs.</p> <p><u>MUD FLAPS</u> Mud flaps shall be installed behind the front and rear wheels of the apparatus.</p> <p><u>MUD FLAPS</u> Mud flaps shall be installed ahead of the rear wheels on the apparatus.</p> <p><u>SPARE TIRE</u> A 425/65R22.50, 18 ply spare tire to match the vehicle's front tires shall be provided, mounted on a steel disc wheel. All wheel surfaces shall be painted red.</p>		

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	Bidder Complies	
	Yes	No
<p><u>SPARE TIRE</u> A 425/65R22.50, 20 ply spare tire to match the vehicle's rear tires shall be provided, mounted on a steel disc wheel. All wheel surfaces shall be provided with powder coat paint red.</p> <p><u>WHEEL CHOCKS</u> There shall be two (2) pairs 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 two (2) pairs 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 on the left and right side of the rescue body behind the rear axle.</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 (rear tandem wheels). A digitally controlled system that utilizes microprocessor technology shall control the anti-lock braking system. Each wheel shall be monitored by the system. When any particular wheel begins to lockup, a signal 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>BRAKES</u> The service brake system shall be full air type.</p> <p>The front brakes shall be Knorr/Bendix disc type with a 17.00" ventilated rotor for improved stopping distance.</p> <p>The brake system shall be certified, third party inspected, for improved stopping distance.</p> <p>The rear brakes shall be Bendix Model ES1657D 16.50" x 7.00" cam operated with automatic slack adjusters.</p> <p><u>AIR COMPRESSOR, BRAKE SYSTEM</u> 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> The brake system shall include:</p>		

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	Yes	No
<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 6,653 cubic inches - Two (2) air pressure gauges with a red warning light and an audible alarm, that activates when air pressure falls below 60 psi - Spring set parking brake system - Parking brake operated by a push-pull style control valve - A parking "brake on" indicator light on instrument panel - Park brake relay/inversion and anti-compounding valve, in conjunction with a double check valve system, shall be provided with an automatic spring brake application at 40 psi - A pressure protection valve shall be provided to prevent all air operated accessories from drawing air from the air system when the system pressure drops below 80 psi (550 kPa). <p>The air tank shall be primed and painted to meet a minimum 750 hour salt spray test.</p> <p>To reduce the effects of corrosion, the air tank shall be mounted with stainless steel brackets. (no exception).</p> <p><u>BRAKE SYSTEM AIR DRYER</u></p> <p>The air dryer shall be WABCO System Saver 1200 with spin-on coalescing filter cartridge and 100 watt heater.</p> <p><u>BRAKE LINES</u></p> <p>Wire braided stainless steel reinforced rubber brake lines shall be provided for the chassis air brake system, up to the individual line coupler fittings, located in the chassis frame forward of the front axle.</p> <p>The coupler fittings shall be the separation point for all air lines going to the front of the chassis and into the cab.</p> <p>The air lines going into the cab shall be nylon, wrapped in loom.</p> <p>The area where the nylon air lines run shall be well protected inside the frame rails.</p> <p>The brake lines shall not be painted.</p>		

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	Yes	No
<p><u>AIR INLET</u> 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 in the driver side lower step well of cab. A check valve shall be provided to prevent reverse flow of air. The inlet shall discharge into the "wet" tank of the brake system. A mating female coupling shall also be provided with the loose equipment.</p> <p><u>ALL WHEEL LOCK-UP</u> An all wheel lock-up system shall be installed which applies air to the front brakes and uses the spring brake at the rear. The all wheel lock shall also activate when the winch PTO is engaged.</p> <p><u>COVER, OVER PARKING BRAKE KNOB</u> There shall be a stainless steel hinged cover provided over the on the instrument panel to the left of the (officer's) seat parking brake knob to prevent accidental activation of the brake. The cover shall be labeled "Emergency Parking Brake".</p> <p><u>PARK BRAKE CONTROL (ADDITIONAL)</u> A second park brake control valve shall be installed on the officer side of the instrument panel. This valve shall only activate the brakes if manually pulled out; low air pressure shall not activate this valve.</p> <p><u>ENGINE</u> The chassis shall be powered by an electronically controlled engine as described below: Make: Detroit Diesel Model: DD13 Power: 450 hp at 1800 rpm Torque: 1550 lb-ft at 1200 rpm Governed Speed: 2080 rpm Emissions Level: EPA 2013 Fuel: Diesel Cylinders: Six (6) Displacement: 781 cubic inches (12.8L) Starter: Delco 39MT</p>		

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	Yes	No
<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 aftertreatment. The system shall illuminate a malfunction indicator light on the dash console if a problem is detected.</p> <p><u>LOCATION OF FILTERS</u></p> <p>For ease of serviceability, the following filters shall be mounted together, on a single bracket, along the left side frame rail:</p> <p>The following filters shall be located in one (1) central location on the engine:</p> <ul style="list-style-type: none"> • Engine Oil Filter • Fuel Pre-Filter • Fuel Final Filter • Coolant Filter <p>The filters shall be accessible while standing on the ground with the cab tilted.</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>		

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	Yes	No
<p>The ABS system shall automatically disengage the auxiliary braking device when required.</p> <p><u>HYDRAULIC FAN</u> To reduce fan noise, provide on-demand cooling, and maximize cab space, the cooling shall be provided by a remote mounted hydraulic driven fan.</p> <p>The fan speed shall be able to be controlled independent of the engine speed for higher cooling rates at low engine speeds when needed.</p> <p>The hydraulic pump shall be driven from the engine's accessory drive to free up PTO's for other applications.</p> <p>The hydraulic fan and cooling system shall be similar in design as those systems used in severe duty application such as construction, agriculture, forestry, mining, and rail industries.</p> <p><u>BY-PASS FUEL FILTER</u> A Detroit Diesel Fuel Pro-482 filtering system shall be provided. The fuel filtering system shall be remote mounted on the chassis.</p> <p>The system shall have the following features:</p> <ul style="list-style-type: none"> - Self priming port - Clear cover - Single filter system - Fuel heater - Drain valve - Aluminum cylinder (act as fuel cooler) <p><u>FUEL SHUTOFF</u> A shutoff valve shall be installed in the fuel line, on both sides of the filter.</p> <p><u>HEATER SHUTOFF</u> The cab and crew cab heaters shall be provided with a shut-off valve installed in the supply line. This valve shall be in an accessible location.</p> <p>Shut-off valve shall be labeled for easy recognition.</p> <p><u>ENGINE AIR INTAKE</u> To facilitate deeper fording capabilities while protecting the engine, the air intake with ember separator shall be mounted on the right side of the apparatus. It shall be located above the cab</p>		

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	Yes	No
<p>wheelwell yet below the window line so as not to limit sight lines and cause blistering inside the cab. The ember separator is designed to prevent road dirt and recirculating hot air from entering the engine.</p> <p>The ember separator shall be easily accessible without tilting the cab.</p> <p>The air intake filter shall be located above the front axle directly above the frame rail so as not to require blistering of the cab interior and to provide easy access while standing on the ground for inspection and maintenance.</p> <p><u>EXHAUST SYSTEM</u></p> <p>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.</p> <p><u>EXHAUST MODIFICATION</u></p> <p>The exhaust pipe shall be 90 degrees to the body.</p> <p>The diffuser shall be reduced to 5.00" in the center to accommodate the fire department's air recovery system. The 5.00" extension pipe coming out of the end of the diffuser shall be flush with the body rub rail. There shall be a minimum of 4.00" clearance between the top of the 5.00" extension and the bottom of the body.</p> <p>There shall be a minimum of 2.50" from the exhaust pipe to the under side of the body heat shield. The last 7.00" of the exhaust shall be free of hangers and/or clamps.</p> <p><u>RADIATOR</u></p> <p>The radiator and the complete cooling system shall meet or exceed the engine manufacturer cooling system standards.</p> <p>The radiator core shall have a minimum frontal area of 1755 square inches. Steel supply and return tanks shall be mounted to the core headers and steel side channels to complete the radiator assembly. The radiator shall be compatible with commercial antifreeze solutions.</p> <p>The radiator shall be mounted in a location directly behind the cab and at the top of the body. This position shall allow for maximum room in the cab, improved visibility through lower windshields, and unobstructed access to repair or replace the radiator should the need occur.</p>		

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	Yes	No
<p>The radiator shall include an integral deaeration tank, with a remote mounted overflow tank. For visual coolant level inspection, the radiator shall have a built-in sight glass. The radiator shall be equipped with a 15 psi pressure relief cap.</p> <p>A drain port shall be located at the lowest point of the cooling system and/or the bottom of the radiator to permit complete flushing of the coolant from the system.</p> <p>A heavy-duty fan shall draw in fresh, cool air through the radiator. Shields or baffles shall be provided to prevent recirculation of hot air to the inlet side of the radiator.</p> <p><u>COOLANT LINES</u></p> <p>Gates® 4-ply polyester reinforced 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 65-gallon fuel tank shall be provided and mounted at the rear of the chassis. The tank shall be constructed of unpainted stainless steel. It shall be equipped with swash partitions and a vent. To reduce the effects of corrosion, the fuel tank shall be mounted with stainless steel straps. (No exception).</p> <p>A .75" drain plug shall be provided in a low point of the tank for drainage.</p> <p>A fill inlet shall be located on the left hand side of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Ultra Low Sulfur - Diesel Fuel Only".</p> <p>A .50" diameter vent shall be provided running from top of tank to just below fuel fill inlet.</p> <p>The tank shall meet all FHWA 393.67 requirements, including a fill capacity of 95 percent of tank volume.</p> <p>All fuel lines shall be provided as recommended by the engine manufacturer.</p> <p><u>DIESEL EXHAUST FLUID TANK</u></p> <p>A 4.5 gallon diesel exhaust fluid (DEF) tank shall be provided and mounted in the driver's side body forward of the rear axle. The tank shall be constructed of plastic.</p> <p>A .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". A fill cap holder shall be mounted on the inside of the door.</p> <p>The tank shall meet the engine manufacturers 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> An air to fuel cooler shall be installed in the engine fuel return line.</p> <p>The fuel filler door shall include a holder for the fuel fill cap.</p> <p><u>FUEL DOOR LABEL</u> There shall be a label provided on the stainless steel fuel door, to read "Ultra Low Sulfur Diesel Fuel Only".</p> <p><u>TRANSMISSION</u> 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> 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>		

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<p><u>TRANSMISSION COOLER</u> A Modine plate and fin transmission oil cooler shall be provided using engine coolant to control the transmission oil temperature.</p> <p><u>SYNTHETIC FLUID ONLY TAG</u> A tag shall be located at the transmission fill point labeled "Synthetic Fluid Only".</p> <p><u>TRANSMISSION DIPSTICK CAP</u> The transmission dipstick cap shall be engraved with "ALLISON TES-295 APPROVED SYNTHETIC TRANS FLUID ONLY".</p> <p><u>TRANSMISSION PROGRAMMING</u> The transmission shall be programmed to automatically shift the transmission to neutral when the parking brake is set to simplify operation and increase operational safety.</p> <p><u>TRANSMISSION FLUID</u> The transmission shall be provided with TranSynd, or other Allison approved TES-295 heavy duty synthetic transmission fluid.</p> <p><u>DRIVELINE</u> Drivelines shall be a heavy-duty metal tube and be equipped with Spicer® 1810 universal joints. The shafts shall be dynamically balanced before installation. A splined slip joint shall be provided in each driveshaft. The slip joint shall be coated with Glidecoat® or equivalent.</p> <p><u>STEERING</u> 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.</p> <p><u>STEERING WHEEL</u> The steering wheel shall be 18.00" in diameter, have tilting and telescoping capabilities, and a 4-spoke design.</p> <p><u>LOGO AND CUSTOMER DESIGNATION ON DASH</u> The dash panel shall have an emblem containing the fire apparatus manufacturer's logo and customer name. The emblem shall have three (3) rows of text for the customer's department</p>		

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<p>name. There shall be a maximum of eight (8) characters in the first row, 11 characters in the second row and 11 characters in the third row.</p> <p>The first row of text shall be: Cambridge</p> <p>The second row of text shall be: Fire</p> <p>The third row of text shall be: Department</p> <p><u>CHASSIS LUBRICATION DRUM PUMP KIT CREDIT</u></p> <p>The Vogel drum pump kit and extra grease shall not be supplied with the system.</p> <p><u>AUTOMATIC CHASSIS LUBRICATION</u></p> <p>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.</p> <p>The lubrication system reservoir, which requires a 15.00" wide x 14.50" high x 6.25" deep mounting area, shall be located on the front bulkhead wall in P-5 to the rear of the circuit breaker panel on the apparatus.</p> <ul style="list-style-type: none"> - Control Arms - Slack Adjusters - Brake Cam Screws - Tie Rods - Drag Link - Rear Steer Components <p><u>HITCH RECEIVER</u></p> <p>A hitch receiver shall be provided at the front of the vehicle, center position under the bumper extension. The hitch shall be a receiver for a 2.00" trailer ball insert and a portable winch with a maximum weight rating of 10,000 lb.</p> <p><u>ELECTRIC POWER FOR WINCH</u></p> <p>Electric power provisions shall be furnished for the portable winch from the chassis battery system.</p>		

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<p>There shall be a total quantity of four (4) receptacle plugs provided and located on each side and the front and rear.</p> <p>The front and rear receptacles plugs shall each include a black cover.</p> <p>Each side receptacles shall include a red cover.</p> <p><u>WINCH</u></p> <p>A Warn, multi-mount, 9,000 lb portable 12V electric winch shall be provided.</p> <p>The winch shall mount to the vehicle receiver hitch and be held in place with a locking hardened pin.</p> <p>The winch shall be provided with 125 feet of .313" galvanized cable with a replaceable clevis hook.</p> <p>A minimum of a 30' remote control shall be provided.</p> <p>A label shall be placed on or near the receiver that states the maximum winch load rating and the maximum rope load rating that the receiver can support.</p> <p><u>FRONT WINCH</u></p> <p>A Warn Olympus 25, long drum, 25,000 lb electric winch shall nest below the top aluminum treadplate surface of the front bumper. A door shall be provided for maintenance and access to the winch.</p> <p>Direction control lever and remote control plug shall be provided. The cover shall be provided with a pneumatic stay arm hold open device.</p> <p>Winch shall be mounted on a surface that shall not flex when the winch is in use, since it could bind working parts of the winch.</p> <p>Winch shall be braced by a mount design, as recommended by the winch manufacturer.</p> <p>Winch shall have 100 feet of Warn synthetic rope of sufficient strength to accommodate the winch capacity, with hook, pre spooled on drum.</p> <p>12/24 volt converter</p> <p>24 volt DC electric motor shall have a thermal overload protection switch.</p> <p>Speed and amperage draw of winch shall be variable depending on winch load.</p> <p>Winch shall have a minimum of a 30 foot remote control cable.</p>		

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<p>A polished aluminum hawse fairlead shall be supplied of sufficient strength to accommodate the winch capacity.</p> <p>A label shall be placed on or near the mount that states the maximum winch load rating and the maximum rope load rating that the mount can support.</p> <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 26.00" from the face of the cab. The bumper shall be 95.28" wide with 45 degree corners and side plates. 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>LIFT AND TOW MOUNTS</u></p> <p>Mounted to the frame extension shall be lift and tow mounts. The lift and tow mounts shall be designed and positioned to adapt to certain tow truck lift systems.</p> <p>The lift and tow mounts with eyes shall be painted the same color as the frame.</p> <p><u>TOW HOOKS</u></p> <p>No tow hooks are to be provided. This truck shall be equipped with a lift and tow package with integral tow eyes.</p> <p><u>TOOL BOX</u></p> <p>A tool compartment shall be provided on the left side of the bumper extension.</p> <p><u>COVER, HOSE TRAY</u></p> <p>A bright aluminum treadplate cover shall be provided over the one (1) hose tray.</p> <p>The cover shall be attached with a stainless steel hinge and located one (1) above the left (driver's) side tool box.</p> <p>One (1) "D" ring latch shall secure the cover in the closed position and a pneumatic stay arm shall hold the cover in the open position.</p>		

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<p><u>STAINLESS STEEL SCUFFPLATE</u> A polished stainless steel scuffplate shall be provided on the top edge of the painted bumper. The scuffplate shall be bent 90 degrees and protect the top corner.</p> <p><u>LICENSE PLATE BRACKET</u> A non-illuminated license plate bracket shall be mounted on the front bumper. The bracket shall be formed from bright stainless steel.</p> <p><u>HINGED CENTER SECTION</u> The center section of the bumper shall be hinged at the bottom. Two (2) pawl latches shall hold the section in the closed position.</p> <p><u>WINCH COVER</u> A bright aluminum treadplate cover shall be provided over the bumper mounted winch. The cover shall be attached with a stainless steel hinge. One (1) "D" ring latch shall secure the cover in the closed position and a pneumatic stay arm on each side shall hold the cover in the open position.</p> <p><u>XRT VALVE ENCLOSURE</u> A aluminum enclosure shall be provided on top of the bumper extension to protect the XRT valve. The enclosure shall be fabricated from bright aluminum treadplate. A hinged door with pawl latch shall be included for access to the valve.</p> <p><u>ACCESS PANEL</u> A lift-out panel shall be provided in the center of the equipment tray for access to the area below. Two (2) flush lift and turn latches shall secure the panel.</p> <p><u>SIGHT RODS</u> There shall be two (2) Bores, Model 848-211, lighted polished stainless steel sight rods mounted to the outside corners of the front bumper extension. The lights at the end of each rod shall be activated when the running lights are activated. The lights shall also flash with the respective directional light.</p> <p><u>CAB</u> The cab shall be designed specifically for the fire service and shall be manufactured by the chassis and body builder. The cab shall be built by the apparatus manufacturer in a facility located on the manufacturer's premises (no exception).</p>		

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	Bidder Complies	
	Yes	No
<p>The cab shall be a cab-forward design that positions the driver and officer ahead of the engine tunnel, providing the greatest amount of room for the front occupants. (no exception).</p> <p>For reasons of structural integrity and enhanced occupant protection, the cab shall be of heavy duty design, constructed to the following minimal standards.</p> <p>The cab shall have 12 main vertical structural members located in the A-pillar (front cab corner post), B-pillar (side center posts), C-pillar (rear corner posts) and rear wall areas. The A-pillar shall be constructed of .25" heavy wall extrusions joined by a solid A356-T6 aluminum joint casting. The B-pillar and C-pillar shall also be constructed from .25" heavy wall extrusions. The rear wall shall be constructed of 4.00" x 2.00" aluminum extrusions. All main vertical structural members shall run from the floor to 5.50" x 3.50" x .1875" thick roof extrusions to provide a cage-like structure with the A-pillar and roof extrusions being welded into a .50" thick corner casting at each of the front corners of the roof assembly.</p> <p>The front of the cab shall be constructed of a .25" thick firewall, covered with a .125" front skin (for a total thickness of .38"), and reinforced with a 95.00" wide x 13.00" deep x .50" thick cross-cab support located just below the windshield. The cross-cab support shall run the full width of the cab and weld to each A-pillar, the .25" thick firewall, and the front skin.</p> <p>The cab floors shall be constructed of .1875" thick aluminum plate and reinforced at the firewall with an additional .25" thick cross-floor support providing a total thickness of .44" of structural material at the front floor area. The front floor area shall also be supported with 4.00" x 8.00" x 1.00" thick tubing that also provides the mounting point for the cab lift. This tubing shall run from the front of the cab to the .38" thick engine tunnel, creating the structure to support the forces created when lifting the cab.</p> <p>The cab shall be 96.00" wide (outside door skin to outside door skin) to maintain maximum maneuverability. Wider cabs shall not be acceptable.</p> <p>The overall height (from the cab roof to the ground) shall be approximately 99.00". The overall height listed shall be calculated based on a truck configuration with a 41.00" frame height. The cab skirt height shall be approximately 23.00" ahead of the front wheels and 21.00" behind the front wheels.</p> <p>An 11.00" raised roof shall be provided. The raised portion shall start at the most forward point of the b-pillar and continue rearward to the back of the cab.</p> <p>The crew cab shall be of the totally enclosed design with access doors constructed in the same manner as the driver and passenger doors.</p>		

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	Bidder Complies	
	Yes	No
<p>The cab shall be a full tilt cab style. The engine shall be easily accessible and capable of being removed with the cab tilted.</p> <p>The cab shall have a three (3)-point cab mount system with rubber isolators.</p> <p><u>CAB ROOF DRIP RAIL</u> For enhanced protection from inclement weather, a drip rail shall be furnished on the sides of the cab. The drip rail shall be constructed of bright polished extruded aluminum, and be bonded to the sides of the cab. The drip rail shall extend the full length of the cab roof.</p> <p><u>INTERIOR CAB INSULATION</u> The cab shall include 1.50" insulation in the ceiling and side walls, and 2.00" insulation in the rear wall to maximize acoustic absorption and thermal insulation.</p> <p><u>FENDER LINERS</u> Full circular inner fender liners in the wheel wells shall be provided.</p> <p><u>WINDSHIELD</u> A curved safety glass windshield shall be provided. The windshield shall be bonded in place to prevent leaks and to increase safety within the cab (reference NHTSA report number DOT HS 806 693). For the greatest visibility, the windshield shall be a minimum of 34.75" tall, be of one (1) piece design, and wrap approximately 8.00" around each end of the A-pillars. The bottom of the windshield shall be no higher than 61.00" from the ground.</p> <p>All cab glass shall be tinted.</p> <p><u>WINDSHIELD WIPERS</u> Windshield wipers with washer shall be provided that meet FMVSS and SAE requirements.</p> <p>The windshield wipers shall sweep past the center of the windshield so as to provide maximum cover in inclement weather. The wipers shall clean a minimum of 85 percent of the forward facing area of the windshield.</p> <p>The washer reservoir shall be able to be filled while standing on the ground and without raising the cab.</p> <p><u>ENGINE TUNNEL</u> Engine hood side walls are structural elements of the cab and shall be constructed of .38" aluminum. The top shall be constructed of .19" aluminum and shall be tapered at the top for increased cab space.</p> <p>The engine tunnel shall be no higher than 70.00" off the ground (calculated with a 41.00" frame height) and no higher than 32.00" off the crew cab floor (no exception).</p>		

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	Bidder Complies	
	Yes	No
<p>The forward portion of the cab shall have a flat floor ahead of the engine tunnel area that shall be transverse from the driver's door to the officer's door. This portion of the floor shall be no greater than 36.00" from the ground.</p> <p>The engine hood shall be insulated for protection from heat and sound. The noise insulation keeps the dBA level below the limits stated in the current NFPA series 1900 pamphlet.</p> <p><u>CAB REAR WALL EXTERIOR COVERING</u></p> <p>The exterior surface of the rear wall of the cab shall be overlaid with bright aluminum treadplate except for areas that are not typically visible when the cab is lowered.</p> <p><u>CAB LIFT</u></p> <p>A hydraulic cab lift system shall be provided, consisting of an electric-powered hydraulic pump, fluid reservoir, dual lift cylinders, remote cab lift controls and all necessary hoses and valves. The hydraulic pump shall have a backup manual override, for use in the event of an electrical failure.</p> <p>The cab lift controls shall be located on the pump panel or front area of the body in a convenient location. The controls shall include a permanently mounted raise/lower switch.</p> <p>The cab shall be capable of tilting 35 degrees and 80 degrees with crane assist to accommodate engine maintenance and removal.</p> <p>The rear of the cab shall be locked down by a two (2)-point, automatic, hydraulic, double hook mechanism that fully engages after the cab has been lowered (self-locking). The dual 2.25 " diameter hydraulic cylinders shall be equipped with a velocity fuse that protects the cab from accidentally descending when the cab is in the tilt position.</p> <p>For increased safety, a redundant mechanical stay arm shall be provided on the same side of the apparatus as the cab lift controls, between the chassis and cab frame when cab is in the raised position.</p> <p><u>Cab Lift Interlock</u></p> <p>The cab lift safety system shall be interlocked to the parking brake. The cab tilt mechanism shall be active only when the parking brake is set and the ignition switch is in the on position. If the parking brake is released, the cab tilt mechanism shall be disabled.</p> <p><u>GRILLE</u></p> <p>A bright finished aluminum mesh grille screen, inserted behind a bright finished grille surround, shall be provided on the front center of the cab.</p>		

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<p><u>SCUFFPLATE</u> A brushed stainless steel scuffplate shall be provided on each side of the engine tunnel on each side. The fluid access door shall be made of the same material.</p> <p><u>DOOR JAMB SCUFFPLATES</u> All cab door jambs shall be furnished with a polished stainless steel scuffplate, mounted on the striker side of the jamb.</p> <p><u>SCUFFPLATE</u> A brushed stainless steel scuffplate shall be mounted on the driver and officer side of engine tunnel. Scuffplate shall extend from top of engine tunnel down to the cab floor.</p> <p><u>SIDE OF CAB MOLDING</u> Chrome molding shall be provided on both sides of cab.</p> <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>SIDE VIEW MIRROR</u> An 8.00" diameter convex mirror shall be provided over the officer's side front corner of the cab. The mirror shall provide the driver with a view of the passenger side of the vehicle.</p> <p>The mirror housing, tubing, clamps and hardware shall be constructed of corrosion resistant stainless steel.</p> <p><u>DOORS</u> To enhance entry and egress to the cab, the forward cab doors shall be a minimum of 37.50" wide x 62.37" high. The crew cab doors shall be located on the sides of the cab and shall be constructed in the same manner as the forward cab doors. The crew cab doors shall measure a minimum of 34.75" wide x 72.00" high.</p> <p>The forward cab and crew cab doors shall be constructed of extruded aluminum with a nominal material thickness of .125". The exterior door skins shall be constructed from .090" aluminum.</p> <p>The forward cab door windows shall include a drop area at the front to enhance visibility.</p> <p>A customized, vertical, pull-down type door handle shall be provided on the exterior of each cab door. The exterior handle shall be designed specifically for the fire service to prevent accidental activation, and shall provide 4.00" wide x 2.00" deep hand clearance for ease of use with heavy gloved hands. Each door shall also be provided with an interior flush, open style paddle handle that shall be readily operable from fore and aft positions, and be designed to prevent accidental</p>		

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	Bidder Complies	
	Yes	No
<p>activation. The interior handles shall provide 4.00" wide x 1.25" deep hand clearance for ease of use with heavy gloved hands.</p> <p>The cab doors shall be provided with both interior (rotary knob) and exterior (keyed) locks exceeding FMVSS standards. The locks shall be capable of activating when the doors are open or closed. The doors shall remain locked if locks are activated when the doors are opened, then closed.</p> <p>A full length, heavy duty, stainless steel, piano-type hinge with a .38" pin and 11 gauge leaf shall be provided on all cab doors. There shall be double automotive-type rubber seals around the perimeter of the door framing and door edges to ensure a weather-tight fit.</p> <p>A chrome handrail shall be provided on the inside each front cab door, for ease of entry.</p> <p>The cab steps at each cab door location shall be located below the cab doors and shall be exposed to the exterior of the cab.</p> <p><u>DOOR PANELS</u></p> <p>There shall be a full height polished stainless steel door panel installed on the inside of all cab doors. The cab door panels shall be removable without disconnecting door and window mechanisms.</p> <p><u>BLANK FACE PLATE</u></p> <p>Blank face plate/s shall be provided, in place of standard storage pockets, in all available locations on the lower instrument panel console.</p> <p><u>ELECTRIC OPERATED CAB DOOR WINDOWS</u></p> <p>All four (4) cab doors shall be equipped with electric operated windows with one (1) flush mounted automotive style switch on each door. The driver's side door shall have four (4) switches, one (1) to control each door window.</p> <p>Each switch shall allow intermittent or auto down operation for ease of use. Auto down operation shall be actuated by holding the window down switch for approximately half a second.</p> <p>The window switches shall be connected directly to the battery power. This allows the windows to be raised and lowered when the battery switch is in the off position.</p> <p><u>ELECTRIC CAB DOOR LOCKS</u></p> <p>The front driver, officer and crew cab doors shall have a door lock master switch. The master switches shall control all cab door locks.</p> <p>There shall be one (1) concealed switch located in an easily accessible chassis specific location that shall unlock all the doors.</p>		

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	Yes	No
<p>The lock system shall include two (2) key FOBs that allow for keyless entry into the vehicle. The key FOB system shall use code hopping technology for high security and be FCC part 15 compliant.</p> <p><u>KEY PAD FOR ELECTRIC DOOR LOCKS</u></p> <p>For improved convenience, the cab door locks shall include a keypad entry system to provide complete keyless entry to the cab. There shall be two (2) keypads provided, located one (1) each side of the cab behind the front cab doors. The keypads shall include visual and audio feedback to confirm activation and acknowledge correct entry code. For enhanced night time use, the keypads shall be lighted. For increased security, the system shall allow over 3,000 possible code combinations.</p> <p><u>CAB STEPS</u></p> <p>The forward cab and crew cab access steps shall be a full size two (2)-step design to provide the largest possible stepping surfaces for safe ingress and egress. (no exception). The bottom steps shall be designed with a grip pattern punched into bright aluminum treadplate material to provide support, slip resistance, and drainage. The bottom steps shall be a bolt-in design to minimize repair costs should they need to be replaced. The front cab steps shall be a minimum of 30.00" wide. The distance from the ground to the first cab step shall be approximately 20.00". The crew cab steps shall be 26.50" wide. The distance from the ground to the first crew cab step shall be approximately 22.00". All bottom steps shall have a depth of approximately 11.00". The distance from the bottom steps to the floor shall be approximately 16.00" in height and be limited to two (2) steps. (no exception). The leading edge of the top step shall be approximately 10.00" inboard from the leading edge of the bottom step to provide a user-friendly angled (stair stepped) step. A slip-resistant handrail shall be provided adjacent to each cab door opening to assist during cab ingress and egress.</p> <p><u>CAB AND CREW CAB STEP LIGHTS</u></p> <p>There shall be four (4) white 12 volt DC 9.00" LED light strips provided. The lights shall be installed recessed for protection into the top of the step extrusion:</p> <ul style="list-style-type: none"> • One (1) strip shall be installed in the driver's door step well. • One (1) strip shall be installed in the passenger's door step well. • One (1) strip shall be installed in the passenger's side crew cab door step well. • One (1) strip shall be installed in the driver's side crew cab door step well. <p>The lights shall be activated when the battery switch is on and the adjacent door is opened.</p>		

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	Bidder Complies	
	Yes	No
<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>HANDRAILS BELOW CAB WINDSHIELD</u></p> <p>A 10.00" long x 1.25" diameter handrail shall be mounted below the front cab windshield, one (1) on each side. The handrails shall be extruded aluminum with a ribbed design to provide a positive gripping surface.</p> <p><u>CREW CAB WINDOWS</u></p> <p>One (1) fixed window with tinted glass shall be provided on each side of the cab, to the rear of the front cab door. The windows shall be sized to enhance light penetration into the cab interior and visibility to the exterior. The windows shall be approximately 29.00" wide x 32.00" high. The top of the window shall align with the top of the glass in the rear doors. The bottom of the glass shall align with the bottom of the crew cab door window.</p> <p><u>WINDOW TINT</u></p> <p>Crew cab windows shall be provided with increased tint to reduce light transmission. The following windows are included:</p> <ul style="list-style-type: none"> - Crew cab side windows:25% light transmission - Crew cab door, roll-up windows:14% light transmission - Crew cab door, top fixed windows:14% light transmission - Rear opera windows (if applicable):14% light transmission <p><u>CAB ROOF COVERING</u></p> <p>Horizontal cab roof surfaces shall be covered with bright aluminum treadplate. Edges and fastening screws shall be properly caulked to prevent water from leaking under aluminum. Front and side warning lights shall not be mounted on top of treadplate. The treadplate shall extend and terminate next to the warning lights.</p> <p><u>STORAGE COMPARTMENTS</u></p> <p>Provided on each side of the crew cab, under the floor and accessible from the step area, shall be a storage compartment.</p> <p>The driver side compartment dimensions shall be approximately 26.00" wide x 15.00" high x 10.25" deep with a clear door opening of 22.75" wide x 10.00" high.</p>		

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	Yes	No
<p>The passenger side compartment dimensions shall be approximately 26.00" wide x 15.00" high x 16.00" deep with a clear door opening of 22.75" wide x 10.00" high. There shall be a 8.00" x 8.00" 45 degree notch in the left rear corner of this compartment for engine exhaust clearance.</p> <p>The doors shall be located in the stepwell area of the crew cab steps and shall be made of treadplate with the compartment interior painted to match the cab interior.</p> <p><u>MOUNTING PLATE</u></p> <p>Equipment installation provisions shall be installed in the cab.</p> <p>A .188" aluminum pegboard plate shall extend from behind the driver and officer seats to the rear of the tunnel.. The pegboard shall have .203" diameter holes, punched 1.00" on center in a pegboard pattern. The plate shall consist of the following three (3) sections:</p> <ul style="list-style-type: none"> • Flat area behind the driver and officer seats to the front of the engine tunnel. • Angled section on the front of the engine tunnel. This section shall be removable. • Engine tunnel. <p>The plate shall end before any compartments mounted to the engine tunnel along the rear wall. The plate shall be full width side to side of the engine tunnel. The plate shall be spaced off the engine tunnel 1.00" to allow for wire routing below the plate.</p> <p>The mounting surface shall be painted to match the cab interior.</p> <p><u>STORAGE TRAY</u></p> <p>A storage tray shall be provided on the top of the engine tunnel, in front of the EMS compartment.</p> <p>The tray shall be 26.50" wide x 2.00" high x 44.00" deep. The top of the tray shall have rolled edges to give the vertical walls more stability.</p> <p>The tray shall be constructed of smooth aluminum and painted to match the cab interior.</p> <p>Tray not intended for storage of loose equipment. Items stored on tray shall be permanently attached to meet NFPA requirements.</p> <p><u>CAB INTERIOR</u></p> <p>The cab interior shall be constructed of primarily metal (painted aluminum) to withstand the severe duty cycles of the fire service.</p> <p>The officer side dash and center console shall be a flat top design with an upper beveled edge to provide easy maintenance and shall be constructed out of painted aluminum.</p>		

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	Yes	No
<p>The switch panel area located to the right of the driver shall be constructed of painted aluminum with the switch panel being brushed stainless steel.</p> <p>The engine tunnel shall be painted aluminum.</p> <p>The entire interior rear wall shall be covered with polished stainless steel scuffplate.</p> <p>Only the instrument cluster shall be surrounded with a high impact ABS plastic contoured to the same shape of the instrument cluster.</p> <p>The headliner shall be installed in both forward and rear cab sections. Headliner material shall be Imperial 1200 vinyl coated polyester. 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>All wiring shall be placed in metal raceways. Routing through holes in tubing shall not be accepted due to chaffing that installation shall cause.</p> <p><u>CAB HEADLINER UPHOLSTERY</u></p> <p>The cab headliner upholstery shall be black.</p> <p><u>INTERIOR PAINT (CAB)</u></p> <p>The cab interior metal surfaces shall be painted black, vinyl texture paint.</p> <p>The top of the center console, officer dash, and driver instrument cluster housing shall be a flat dark charcoal gray color to reduce windshield glare.</p> <p><u>CAB FLOOR</u></p> <p>The cab and crew cab flooring shall be constructed with bright aluminum treadplate. The vertical surfaces at the top of the step wells and the vertical area where the center floor rises shall be covered with aluminum treadplate. The front cab floor shall stop short of the wire raceway. The cover for the raceway shall be made of treadplate and wrap down the vertical surface for a one (1)-piece design cover.</p> <p><u>CAB DEFROSTER</u></p> <p>To provide maximum defrost and heating performance, a 54,961 BTU heater-defroster unit with 558 SCFM of air flow shall be provided inside the cab. The defroster unit shall be strategically located under the forward portion of the center console. For easy access, a removable metal cover shall be installed over the defroster unit. The defroster shall include an integral aluminum frame air filter, high performance dual scroll blowers, and ducts designed to provide maximum defrosting capabilities for the 1-piece windshield. The defroster ventilation shall be built into the design of the cab dash instrument panel and shall be easily removable for maintenance. The defroster shall be capable of clearing 98 percent of the windshield and side glass when tested under conditions where the cab has been cold soaked at 0 degrees Fahrenheit for 10 hours, and a</p>		

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<p>2 ounce per square inch layer of frost/ice has been able to build up on the exterior windshield. The defroster system shall meet or exceed SAE J382 requirements.</p> <p><u>CAB/CREW CAB HEATER</u></p> <p>Two (2) 36,702 BTU auxiliary heaters with 276 SCFM (each unit) of air flow shall be provided inside the crew cab, one (1) in each outboard rear facing seat riser for easy service access. The heaters shall include high performance dual scroll blowers, one (1) for each unit. Outlets for the heaters shall be located below each rear facing seat riser and below the fronts of the driver and passenger seats, for efficient airflow. An extruded aluminum plenum shall be incorporated in the cab structure that shall transfer heat to the forward cab seating positions.</p> <p>The heater/defroster and crew cab heaters shall be controlled by an integral electronic control panel. The heater control panel shall allow the driver to control heat flow to the front and rear independently. The control panel shall include variable adjustment for temperature and fan control, and be conveniently located in the center console in clear view of the driver. The control panel shall include highly visible, progressive LED indicators for both fan speed and temperature.</p> <p><u>AIR CONDITIONING</u></p> <p>Due to the large space inside the cab, a high-performance, customized air conditioning system shall be furnished. A 19.10 cubic inch compressor shall be installed on the engine.</p> <p>The air conditioning system shall be capable of cooling the average cab temperature from 100 degrees Fahrenheit to 64 degrees Fahrenheit in the forward section of the cab, and 69 degrees Fahrenheit in the rear section of the cab, at 50 percent relative humidity within 30 minutes. The cooling performance test shall be run only after the cab has been heat soaked at 100 degrees Fahrenheit for a minimum of 4 hours.</p> <p>A roof-mounted condenser with a 63,000 BTU output that meets and exceeds 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>The evaporator unit shall be installed in the rear portion of the cab ceiling over the engine tunnel. The evaporator shall include two (2) high performance cores and plenums with multiple outlets, one (1) plenum directed to the front and one (1) plenum directed to the rear of the cab.</p> <p>The evaporator unit shall have a 49,000 BTU (4.08 tons) rating that meets and exceeds 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"> • Four (4) shall be directed towards the drivers location 		

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	Yes	No
<ul style="list-style-type: none"> • Four (4) shall be directed towards the officers location • Nine (9) shall be directed towards crew cab area <p>The air conditioner refrigerant shall be R-134A and shall be installed by a certified technician.</p> <p>The air conditioner shall be controlled by dual zone integral electronic control panels for the heater, defroster and air conditioner. The cab control panel shall be located in the center console. For ease of operation, the control panels shall include variable adjustment for temperature and fan control.</p> <p><u>INTERIOR CAB INSULATION</u></p> <p>The cab walls, ceiling and engine tunnel shall be insulated in all strategic locations to maximize acoustic absorption and thermal insulation. The cab shall be insulated with 2.00" insulation in the rear wall, 3.00" insulation in the side walls, and 1.50" insulation in the ceiling. Headliners shall be constructed from a 0.20" high density polyethylene corrugated material. Each headliner shall be wrapped with a 0.25" thick foil faced poly damp low emissivity foam insulation barrier for acoustic and thermal control.</p> <p>Designed for maximum sound absorption and thermal insulation, the rear cab wall shall be insulated with a 1.50" thick open cell acoustical foam. The thermal protection of the foam shall provide and R-value of four (4) per 1.00" thickness.</p> <p><u>SPECIAL DRAIN TUBES</u></p> <p>Two (2) condensate drain tubes shall be provided for the air conditioning evaporator. The drip pan shall have two (2) drain tubes plumbed separately to allow for the condensate to exit the drip pan.</p> <p><u>WINDOW DEFROST FANS</u></p> <p>Two (2) window defrost fans shall be mounted on the ceiling of the cab, one (1) on each side of the cab.</p> <p><u>GRAB HANDLES</u></p> <p>A handrail approximately 24.00" long and contoured to follow the shape of the cab windshield post shall be mounted to the forward portion of the driver and officer door openings.</p> <p>A grab handle shall be mounted by the driver and passenger side crew cab doors to assist in entering the cab. The grab handle shall be securely mounted to the hinge side of the door frame.</p> <p><u>ENGINE COMPARTMENT LIGHTS</u></p> <p>There shall be two (2) Whelen, Model 3SC0CDCR, 12 volt DC, 3.00" white LED light(s) with Whelen, Model 3FLANGEC, chrome flange kit(s) installed under the cab to be used as engine compartment illumination.</p>		

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<p>These light(s) shall be activated automatically when the cab is raised.</p> <p><u>ACCESS TO ENGINE DIPSTICKS</u></p> <p>To encourage preventive maintenance, the engine oil and transmission fluid dipsticks, shall be accessible through a door on the engine tunnel, inside the crew cab. The door shall be on the driver's side of the engine tunnel and shall be easily accessible while standing on the ground (no exception).</p> <p>The engine oil dipstick shall allow for checking only. The transmission dipstick shall allow for both checking and filling. An additional tube shall be provided for filling the engine oil.</p> <p>The door shall have a rubber seal for thermal and acoustic insulation. One (1) flush latch shall be provided on the access door.</p> <p>For ease of handling in a fire station bay, the engine dipstick shall be no longer than 3' in length and the transmission dipstick shall be no longer than 6' in length (no exception)</p> <p><u>MAP BOX</u></p> <p>There shall be a map box with five (5) bins, a storage tray, cup holders and pockets provided on top of the forward center seat riser. The overall size of the compartment shall be 36.00" long x 17.50" wide x 6.50" high. The map box shall be divided into five (5) bins, each being 12.50" wide x 2.00" high x 12.00" deep. Each bins shall be open from the top and angled to the passenger side. To the rear of the map slots shall be a full width tray being approximately 35.75" long x 4.75" wide x 6.50" high. On each side of the map slots, next to the driver and officer, shall be a flat surface that houses a cup holder and pocket storage. The cup holders shall be located to the front of the map box with the storage pockets to the rear. The pockets shall be as large as possible for the length and width, while being 3.00" deep. The map box shall be constructed of .125" aluminum and shall be painted to match the cab interior.</p>		

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	Yes	No
<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 eight (8) crew cab seating positions. • 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 three (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 three (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>		

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	Bidder Complies	
	Yes	No
<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. <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>SEATING CAPACITY</u></p> <p>The seating capacity in the cab shall be five (5).</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> <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. 		

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	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> A suspension seat safety system shall be included. When activated in the event of a side roll, this system shall pretension the seat belt, then retract the seat to its lowest travel position. <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>To provide proper shoulder, elbow, and hip room, the driver seat shall be positioned such that the center line of the lower cushion is no less than 15.00" from the door pan and the edge of the cushion is approximately 4.00" away from the door pan providing more room to reach the seat belt buckle and encourage seat belt use (no exception).</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). 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 7.50 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> <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, this system shall pretension the seat belt and then retract the seat to its lowest travel position. 		

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	Bidder Complies	
	Yes	No
<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>The officer seat shall have 24.00" of leg room as measured from the front of the seat cushion to the modesty panel below the officer dash. Furthermore, to provide proper shoulder, elbow, and hip room, the officer seat shall be positioned such that the center line of the lower cushion is no less than 13.75" from the door pan and the edge of the cushion is approximately 4.00" away from the door pan providing more room to reach the seat belt buckle and encourage seat belt use (no exception).</p> <p><u>RADIO COMPARTMENT</u></p> <p>The radio amplifier shall be located in the center console on shelf above battery conditioner (if equipped).</p> <p><u>EMS COMPARTMENT</u></p> <p>A rear facing EMS compartment shall be provided in the crew cab at the driver side outboard position.</p> <p>The overall dimensions of the compartment shall be 33.00" wide x 48.00" high x 30.00" deep. The compartment shall be separated into two (2) sections.</p> <p>The upper section of the compartment shall have a clear door opening of approximately 31.00" wide x 30.00" high. The interior door shall be web netting. The netting is to be made with 1.00" wide nylon material with 2.00" openings. Side release buckles shall be used to fasten all sides of the opening.</p> <p>Below the upper section of the compartment shall be a drawer. The clear door opening of the drawer shall be 16.00" wide x 10.00" high. The depth of the drawer shall be 11.00". The back of the drawer, towards the driver seat, shall be open.</p> <p>The compartment shall be constructed of smooth aluminum and painted to match the cab interior.</p> <p><u>Compartment Light</u></p> <p>The upper section of the compartment shall have two (2) white Amdor, LED strip lights installed, one (1) each side of the compartment opening. The lights shall be controlled by a switch on the exterior of the compartment.</p>		

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	Yes	No
<p><u>SHELVING</u></p> <p>There shall be two (2) shelves provided. Each shelf shall be constructed of 0.090" aluminum with a 1.25" up-turned lip. Shelving shall be infinitely adjustable by means of a threaded tightener sliding in a track.</p> <p>The location shall be centered with-in the EMS compartment.</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> <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> <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 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. <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>To provide proper shoulder, elbow, and hip room, the crew area seat shall be positioned such that the center line of the lower cushion is no less than 13.75" from the door pan (no exception).</p> <p><u>FORWARD FACING DRIVER SIDE OUTBOARD SEAT</u></p> <p>There shall be one (1) forward facing, foldup seat provided at the driver side outboard position in the crew cab. To maximize accessibility to the crew cab, the seat shall be a minimum of 15.00" from the front of the cushion to the face of the seat back and the seat back shall be provided with</p>		

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	Bidder Complies	
	Yes	No
<p>0 degree fixed recline angle. 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> <p>The seat back shall be an SCBA back style and be recessed into the rear wall. 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 rebolting it in the desired location.</p> <p>The seat shall include the following features incorporated into the side roll protection system:</p> <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 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>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>To provide proper shoulder, elbow, and hip room, the crew area seat shall be positioned such that the center line of the lower cushion is no less than 13.75" from the door pan (no exception).</p> <p><u>EMS COMPARTMENT</u></p> <p>A forward facing EMS compartment shall be provided in the crew cab on top of the engine tunnel.</p> <p>The compartment shall be 26.50" wide x 34.00" high x 12.00" deep. The interior door shall be web netting. The netting is to be made with 1.00" wide nylon material with 2.00" openings. Side release buckles shall be used to fasten all sides of the opening. The clear door opening shall be approximately 24.50" wide x 32.00" high.</p> <p>The compartment shall be constructed of smooth aluminum and painted to match the cab interior.</p>		

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	Bidder Complies	
	Yes	No
<p><u>Compartment Light</u></p> <p>There shall be two (2) white Amdor, LED strip lights installed, one (1) each side of the compartment opening. The lights shall be controlled by a switch on the exterior of the compartment.</p> <p><u>FORWARD FACING PASSENGER SIDE OUTBOARD SEAT</u></p> <p>There shall be one (1) forward facing, foldup seat provided at the passenger side outboard position in the crew cab. To maximize accessibility to the crew cab, the seat shall be a minimum of 15.00" from the front of the cushion to the face of the seat back and the seat back shall be provided with 0 degree fixed recline angle. 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> <p>The seat back shall be an SCBA back style and be recessed into the rear wall. 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> <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 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>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>To provide proper shoulder, elbow, and hip room, the crew area seat shall be positioned such that the center line of the lower cushion is no less than 13.75" from the door pan (no exception).</p> <p><u>SEAT UPHOLSTERY</u></p> <p>All seat upholstery shall be black Imperial 1200 material.</p> <p><u>AIR BOTTLE HOLDERS</u></p> <p>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</p>		

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	Bidder Complies	
	Yes	No
<p>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 four (4) SCBA brackets.</p> <p><u>ARM REST(S)</u> The officer seat shall have a folding arm rest installed on inboard side only.</p> <p><u>ARM REST(S)</u> The driver seat shall have a folding arm rest installed on inboard side only.</p> <p><u>SHOULDER HARNESS HEIGHT ADJUSTMENT</u> All seating positions furnished with three (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>A total of five (5) seating positions shall have the adjustable shoulder harness.</p> <p><u>SEAT BELTS</u> All seating positions in the cab and crew cab shall have orange seat belts.</p> <p><u>SEAT BELT MONITORING SYSTEM</u> A seat belt monitoring system (SBMS) shall be provided. The SBMS shall be capable of monitoring up to ten (10) seat positions indicating the status of each seat position with a green or red LED indicator 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 <p><u>Audible Alarm</u> The SBMS shall include an audible alarm that shall be activated when a red illumination condition exists and the parking brake is released, or a red illumination condition exists and the transmission is not in park.</p>		

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	Bidder Complies	
	Yes	No
<p><u>HELMET HOLDER</u></p> <p>There shall be six (6) Zico, Model UHH-1, helmet holder bracket(s) provided in the cab. The brackets shall provide quick access and secure storage of the helmet(s). The bracket location(s) shall be determined at time of final inspection.</p> <p><u>CAB DOME LIGHTS</u></p> <p>There shall be four (4) Weldon 808* series, dual LED dome lights with black bezels provided. Two (2) lights shall be mounted above the inside shoulder of the driver and officer and two (2) lights shall be installed and located, one (1) on each side of the crew cab.</p> <p>The color of the LED's shall be red and white.</p> <p>The white LED's shall be controlled by the door switches and the lens switch.</p> <p>The color LED's shall be controlled by the lens switch.</p> <p><u>ADDITIONAL DOME LIGHTS</u></p> <p>There shall be four (4) Weldon 8080/8081 series, dual LED dome lights with black bezel(s) mounted in the cab and/or crew cab located in the crew cab.</p> <p>The color of the LED's shall be red and white.</p> <ul style="list-style-type: none"> • The white LED(s) shall be controlled by the door switches and the lens switch. • The color LED(s) shall be controlled by the door switches. <p>The light(s) may be load managed when the parking brake is applied.</p> <p><u>MAP LIGHT</u></p> <p>There shall be one (1) Sunnex®, Model HS741-20-RL-IP65, halogen map light(s) provided in the cab and located on the dash to the right of the officer's seat. Each map light shall have a square base with an on/off switch. The map light(s) shall have a 20.00" long flexible neck that exits the top of the chassis mount.</p> <p>Each light shall be provided with a red lens that easily slides over the clear lamp for night vision.</p> <p>The light switch(es) shall be connected directly to the ignition switched power.</p>		

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	Bidder Complies	
	Yes	No
<p><u>CAB INSTRUMENTATION</u></p> <p>The cab instrument panel shall consist of gauges, an LCD display, telltale indicator lights, alarms, control switches, and a diagnostic panel. The function of 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 directly forward of the driver. Gauge and switch panels shall be designed to be removable for ease of service and low cost of ownership.</p> <p><u>GAUGES</u></p> <p>The gauge panel shall include the following ten (10) ivory gauges with chrome bezels to monitor vehicle performance:</p> <ul style="list-style-type: none"> - Voltmeter gauge (Volts) <ul style="list-style-type: none"> Low volts (11.8 VDC) <ul style="list-style-type: none"> Amber indicator on gauge assembly with alarm High volts (15 VDC) <ul style="list-style-type: none"> Amber indicator on gauge assembly with alarm Very low volts (11.3 VDC) <ul style="list-style-type: none"> Amber indicator on gauge assembly with alarm Very high volts (16 VDC) <ul style="list-style-type: none"> Amber indicator on gauge assembly with alarm - Tachometer (RPM) - Speedometer (Primary (outside) MPH, Secondary (inside) Km/H) - Fuel level gauge (Empty - Full in fractions) <ul style="list-style-type: none"> Low fuel (1/8 full) <ul style="list-style-type: none"> Amber indicator on gauge assembly with alarm Very low fuel (1/32) fuel <ul style="list-style-type: none"> Amber indicator on gauge assembly with alarm 		

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	Bidder Complies	
	Yes	No
<p>- Engine oil pressure gauge (PSI)</p> <p style="padding-left: 40px;">Low oil pressure to activate engine warning lights and alarms</p> <p style="padding-left: 40px;">Red indicator on gauge assembly with alarm</p> <p>- Front air pressure gauge (PSI)</p> <p style="padding-left: 40px;">Low air pressure to activate warning lights and alarm</p> <p style="padding-left: 40px;">Red indicator on gauge assembly with alarm</p> <p>- Rear air pressure gauge (PSI)</p> <p style="padding-left: 40px;">Low air pressure to activate warning lights and alarm</p> <p style="padding-left: 40px;">Red indicator on gauge assembly with alarm</p> <p>- Transmission oil temperature gauge (Fahrenheit)</p> <p style="padding-left: 40px;">High transmission oil temperature activates warning lights and alarm</p> <p style="padding-left: 40px;">Amber indicator on gauge assembly with alarm</p> <p>- Engine coolant temperature gauge (Fahrenheit)</p> <p style="padding-left: 40px;">High engine temperature activates an engine warning light and alarm</p> <p style="padding-left: 40px;">Red indicator on gauge assembly with alarm</p> <p>- Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions)</p> <p style="padding-left: 40px;">Low fluid (1/8 full)</p> <p style="padding-left: 40px;">Amber indicator on gauge assembly with alarm</p> <p>All gauges and gauge indicators shall perform prove out at initial power-up to ensure proper performance.</p> <p><u>INDICATOR LAMPS</u></p> <p>To promote safety, the following telltale indicator lamps shall be integral to the gauge assembly and are located above and below the center gauges. 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>		

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	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> - Low coolant - Trac cntl (traction control) (where applicable) - Check engine - Check trans (check transmission) - Aux brake overheat (Auxiliary brake overheat) - Air rest (air restriction) - Caution (triangle symbol) - Water in fuel - DPF (engine diesel particulate filter regeneration) - Trailer ABS (where applicable) - Wait to start (where applicable) - HET (engine high exhaust temperature) (where applicable) - ABS (antilock brake system) - MIL (engine emissions system malfunction indicator lamp) (where applicable) - SRS (supplemental restraint system) fault (where applicable) -- DEF (low diesel exhaust fluid level) <p>The following red telltale lamps shall be present:</p> <ul style="list-style-type: none"> - Warning (stop sign symbol) - Seat belt - Parking brake - Stop engine - Rack down <p>The following green telltale lamps shall be provided:</p> <ul style="list-style-type: none"> - Left turn 		

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	Bidder Complies	
	Yes	No
<p>- Right turn</p> <p>- Battery on</p> <p>The following blue telltale lamp shall be provided:</p> <p>-High beam</p> <p><u>ALARMS</u></p> <p>Audible steady tone warning alarm: A steady audible tone alarm shall be provided whenever a warning message is present.</p> <p>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.</p> <p>Alarm silence: 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.</p> <p><u>INDICATOR LAMP AND ALARM PROVE-OUT</u></p> <p>Telltale indicators and alarms shall perform prove-out at initial power-up to ensure proper performance.</p> <p><u>CONTROL SWITCHES</u></p> <p>For ease of use, the following controls shall be provided immediately adjacent to the cab instrument panel within easy reach of the driver.</p> <p>Emergency master switch: A molded plastic push button switch with integral indicator lamp shall be provided. Pressing the switch shall activate emergency response lights and siren control. A green lamp on the switch provides indication that the emergency master mode is active. Pressing the switch again disables the emergency master mode.</p> <p>Headlight / Parking light switch: A three (3)-position maintained rocker switch shall be provided. The first switch position shall deactivate all parking lights and the headlights. The second switch position shall activate the parking lights. The third switch position shall activate the headlights.</p> <p>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</p>		

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	Bidder Complies	
	Yes	No
<p>the backlighting intensity. The third switch position increases the panel backlighting intensity to a maximum level as the switch is held.</p> <p>The following standard controls shall be integral to the gauge assembly and are located below the right hand gauges. All switches have backlit labels for low light applications.</p> <p>High idle engagement switch: A two (2)-position momentary rocker switch with integral indicator lamp shall be provided. The first switch position is the default switch position. The second switch position 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.</p> <p>"Ok To Engage High Idle" indicator lamp: A green indicator light shall be provided next to the high idle activation switch to indicate that the interlocks have been met to allow high idle engagement.</p> <p>The following standard controls shall be provided adjacent to the cab gauge assembly within easy reach of the driver. All switches shall have backlit labels for low light applications.</p> <p>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. A green indicator lamp shall be activated with vehicle ignition.</p> <p>Engine start switch: A two (2)-position momentary rocker switch shall be provided. The first switch position is the default switch position. The second switch position shall activate the vehicle's engine. The switch actuator is designed to prevent accidental activation.</p> <p>4-way hazard switch: A two (2)-position maintained rocker switch shall be provided. The first switch position shall deactivate the 4-way hazard switch function. The second switch position shall activate the 4-way hazard function. The switch actuator shall be red and includes the international 4-way hazard symbol.</p> <p>Heater, defroster, and optional air conditioning control panel: A control panel with membrane switches shall be provided to control heater/defroster temperature and heater, defroster, and air conditioning fan speeds. A green LED status bar shall indicate the relative temperature and fan speed settings.</p>		

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	Bidder Complies	
	Yes	No
<p>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.</p> <p>Parking brake control: An air actuated push/pull park brake control valve shall be provided.</p> <p>Chassis horn control: Activation of the chassis horn control shall be provided through the center of the steering wheel.</p> <p><u>CUSTOM SWITCH PANELS</u></p> <p>The design of cab instrumentation shall allow for emergency lighting and other switches to be placed within easy reach of the operator thus improving safety. There shall be positions for up to four (4) switch panels in the overhead console on the driver's side, up to four (4) switch panels in the engine tunnel console facing the driver, up to four (4) switch panels in the overhead console on the officer's side and up to two (2) switch panels in the engine tunnel console facing the officer. All switches shall have backlit labels for low light applications.</p> <p><u>DIAGNOSTIC PANEL</u></p> <p>A diagnostic panel shall be accessible while standing on the ground and 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.</p> <p>The diagnostic panel shall include the following:</p> <ul style="list-style-type: none"> - Engine diagnostic port - Transmission diagnostic port - ABS diagnostic port - SRS diagnostic port (where applicable) - Command Zone USB diagnostic port - Engine diagnostic switch (blink codes flashed on check engine telltale indicator) - ABS diagnostic switch (blink codes flashed on ABS telltale indicator) - Diesel particulate filter regeneration switch (where applicable) - Diesel particulate filter regeneration inhibit switch (where applicable) 		

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	Bidder Complies	
	Yes	No
<p><u>CAB LCD DISPLAY</u></p> <p>A digital four (4)-row by 20-character dot matrix display shall be integral to the gauge panel. The display shall be capable of showing simple graphical images as well as text. The display shall be split into three (3) sections. Each section shall have a dedicated function. The upper left section shall display the outside ambient temperature.</p> <p>The upper right section shall display, along with other configuration specific information:</p> <ul style="list-style-type: none"> - Odometer - Trip mileage - PTO hours - Fuel consumption - Engine hours <p>The bottom section shall display INFO, CAUTION, and WARNING messages. Text messages shall automatically activate to describe the cause of an audible caution or warning alarm. The LCD shall be capable of displaying multiple text messages should more than one caution or warning condition exist.</p> <p><u>AIR RESTRICTION INDICATOR</u></p> <p>A high air restriction warning indicator light LCD message with amber warning indicator and audible alarm shall be provided.</p> <p>- Officer Speedometer, A Class I digital display speedometer shall be provided on the officer side overhead position.</p> <p><u>"DO NOT MOVE APPARATUS" INDICATOR</u></p> <p>There shall be one (1) Whelen, Model 5SR00FRR, flashing red LED indicator light located in the driving compartment illuminated automatically per the current NFPA requirements. The light shall be labeled "Do Not Move Apparatus If Light Is On".</p> <p>There shall be one (1) additional Whelen, Model 5SR00FRR, flashing LED indicator light installed in the crew cab headliner.</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>DO NOT MOVE TRUCK MESSAGES</u></p> <p>Messages shall be displayed on the gauge panel LCD located forward of the steering wheel directly in front of the driver whenever the Do Not Move Truck light is active. The messages</p>		

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	Bidder Complies	
	Yes	No
<p>shall designate the item or items not in the stowed for vehicle travel position (parking brake disengaged).</p> <p>The following messages shall be displayed (where applicable):</p> <ul style="list-style-type: none"> • Do Not Move Truck • 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 • DS Ladder Rack Down (Driver Side Ladder Rack Down) • PS Ladder Rack Down (Passenger Side Ladder Rack Down) • Deck Gun Not Stowed • Lt Tower Not Stowed (Light Tower Not Stowed) • Hatch Door Open • Fold Tank Not Stowed (Fold-A-Tank Not Stowed) • Aerial Not Stowed (Aerial Device Not Stowed) • Stabilizer Not Stowed • Steps Not Stowed • Handrail Not Stowed <p>Any other device that is opened, extended, or deployed that creates a hazard or is likely to cause major damage to the apparatus if the apparatus is moved shall be displayed as a caution message after the parking brake is disengaged.</p> <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. The switch panel(s) shall be located in the overhead position above the windshield on the driver side overhead to allow for easy access.</p> <p>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</p>		

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	Yes	No
<p>(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>WIPER CONTROL</u></p> <p>For simple operation and easy reach, the windshield wiper control shall be an integral part of the directional light lever located on the steering column. The wiper control shall include high and low wiper speed settings, a one (1) speed intermittent wiper control with six (6) second interval and windshield washer switch. The control shall have a return to park provision, which allows the wipers to return to the stored position when the wipers are not in use.</p> <p>The wipers shall cease operation when the parking brake is set.</p> <p><u>OVERRIDE SWITCH</u></p> <p>A switch shall be provided to override the parking brake interlock for the windshield wiper controls. The switch shall allow the windshield wipers to operate with the parking brake set.</p> <p>The switch shall be located adjacent to the wiper switch.</p> <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 one (1) in the EMS compartment at the top towards the right side bulkhead and one (1) to the left of the officer's seat on the instrument panel. • Termination shall be with 15 amp, power point plug with rubber cover • Wires shall be sized to 125 percent of the protection <p>The circuit(s) may be load managed when the parking brake is set.</p> <p><u>SPARE CIRCUIT</u></p> <p>There shall be one (1) 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 		

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<ul style="list-style-type: none"> • Wires shall be protected to 20 amps at 12 volts DC • Power and ground shall terminate one (1) on the front bulkhead adjacent to the 120 volt plug on the hatch walkway. • Termination shall be with water resistant male and female plugs • Wires shall be sized to 125% of the protection <p>This circuit(s) 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 battery power • The negative wire shall be connected to ground • Wires shall be protected to 30 amps at 12 volts DC • Power and ground shall terminate one (1) near the HVAC controls, one (1) to the rear of the engine tunnel, two (2) in the EMS compartment on the rear wall approximately 4.0" from the top • Termination shall be with heat shrinkable butt splicing • Wires shall be sized to 125% of the protection <p>This circuit(s) may be load managed when the parking brake is set.</p> <p><u>SPARE CIRCUIT</u></p> <p>There shall be one (1) pair of wires, including a positive and a negative, installed on the apparatus.</p> <p>The above wires shall have the following features:</p> <p>The positive wire shall be connected directly to the battery power.</p> <p>The negative wire shall be connected to ground.</p> <p>Wires shall be protected to 40 amps at 12 volts DC.</p> <p>Power and ground shall terminate in compartment D-4 adjacent to the circuit breaker panel at the rear facia.</p> <p>Termination shall be with six (6) position terminal strip.</p> <p>Wires shall be sized to 125% of the protection.</p>		

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	Yes	No
<p>This circuit(s) may be load managed when the parking brake is set.</p> <p><u>DIGITAL CLOCK</u> A Class I digital clock shall be provided in the officer's side overhead switch panel. The clock shall be provided with a 12 or 24 hour mode.</p> <p><u>LABEL, EMERGENCY LIGHT SWITCHES</u> The emergency light switch labels shall have the "NFPA" text omitted. Each switch shall be labeled for its normal function (example: Roof Light, Front Warning, etc.).</p> <p><u>INFORMATION CENTER</u> An information center employing a 7.00" diagonal color LCD display shall be encased in an ABS plastic housing.</p> <p>The information center shall have the following specifications:</p> <ul style="list-style-type: none"> • Operate in temperatures from -40 to 185 degrees Fahrenheit • An Optical Gel shall be placed between the LCD and protective lens • Five weather resistant user interface switches • Black enclosure with gray decal • Sunlight Readable • Linux operating system • Minimum of 400nits rated display • Display can be changed to an available foreign language <p><u>OPERATION</u> The information center shall be designed for easy operation for everyday use.</p> <p>The page button shall cycle from one screen to the next screen in a rotating fashion.</p> <p>A video button shall allow a NTSC signal into the information center to be displayed on the LCD. Pressing any button while viewing a video feed shall return the information center to the vehicle information screens.</p> <p>A menu button shall provide access to maintenance, setup and diagnostic screens.</p> <p>All other button labels shall be specific to the information being viewed.</p> <p><u>GENERAL SCREEN DESIGN</u> 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.</p> <p>If a caution or warning situation arises the following shall occur:</p>		

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<ul style="list-style-type: none"> • An amber background/text color shall indicate a caution condition • A red background/text color shall indicate a warning condition • Exterior Ambient Temperature • Time (12 or 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. <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(s) ▪ Ladder Rack (if applicable) 		

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<ul style="list-style-type: none"> ▪ Deck Gun (if applicable) ▪ Light Tower (if applicable) ▪ Hatch Door (if applicable) ▪ Stabilizers (if applicable) ▪ Steps (if applicable) • 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> <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 		

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<ul style="list-style-type: none"> • 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> <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) 		

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<ul style="list-style-type: none"> • Master Optical Warning Device Switch - On/Off • Time - 24 Hour Time • Date - Year/Month/Day <p><u>RADIO ANTENNA MOUNT</u></p> <p>There shall be four (4) standard antenna-mounting base(s), Model MATM, with 17 feet of coax cable and weatherproof cap provided for a two (2)-way radio installation. The standard mount shall be located on the cab roof, just to the rear of the officer seat and the additional mount(s) shall be located spaced evenly to the rear of the forward facing lightbar. The cable(s) shall be routed two (2) to the top portion of the EMS compartment and two (2) to the instrument panel to the rear of the HVAC controls.</p> <p><u>ELECTRICAL POWER CONTROL SYSTEM</u></p> <p>The primary power distribution shall be located forward of the officer's seating position and be easily accessible while standing on the ground 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 easily accessible.</p> <p>Distribution centers located throughout the vehicle shall contain battery powered studs for supplying 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. 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.</p>		

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<p>The system shall utilize a Real Time Operating System (RTOS) fully compliant with OSEK/VDX™ specifications providing a lower cost of ownership.</p> <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 self test at activation and 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 the vehicle's configuration</p> <p>Factory and field reprogrammable to accommodate changes to the vehicle's operating parameters</p> <p>Complete operating and troubleshooting manuals</p> <p>USB connection to the main control module for advanced troubleshooting</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 (Totally protected against dust and also 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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<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. 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> <p>The alarm shall activate if the system falls below 11.8 volts DC for more than two (2) minutes.</p>		

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<p><u>DEDICATED RADIO EQUIPMENT CONNECTION POINTS</u></p> <p>There shall be three (3) studs provided in the primary power distribution center located in front of the officer for 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 60-amp ignition switched power</p> <p>12-volt 60-amp direct battery power</p> <p>There shall also be a 12-volt 100-amp ground stud located in or adjacent to the power distribution center.</p> <p><u>ENHANCED SOFTWARE</u></p> <p>The solid-state control system shall include the following software enhancements:</p> <p>All perimeter lights and scene lights (where applicable) shall be deactivated when the parking brake is released.</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>Cab and crew cab perimeter 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><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 testing reports from testing conducted on an entire apparatus and shall certify that the vehicle meets SAE J551/2 and SAE J1113/25 Region 1, Class C EMR for 10KHz-1GHz to 100</p>		

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<p>Volts/Meter requirements. Component and partial (incomplete) vehicle testing is not adequate as overall vehicle design can impact test results and thus is not acceptable by itself.</p> <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>BATTERY SYSTEM</u> Six (6) Optima, Model: D31M, or 900CCA batteries shall be provided.</p> <p>The features of these batteries shall include the following:</p> <p>12 volt.</p> <p>SAE posts.</p> <p><u>BATTERY SYSTEM</u> 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> 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> Batteries shall be stored in a well-ventilated location under the cab, between the chassis frame rails, ahead of the front wheels. The battery compartments shall be constructed of 3/16" steel plate and be designed to accommodate a maximum of six (6) group 31 batteries in each compartment. The battery hold-downs shall be of a non-corrosive material. All bolts and nuts shall be stainless steel.</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>		

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<p><u>JUMPER STUDS</u></p> <p>One (1) set of battery jumper studs with plastic color-coded covers shall be remotely located at the front left side corner of the cab for easy jumper cable access.</p> <p><u>BATTERY CHARGER/ AIR COMPRESSOR</u></p> <p>There shall be one (1) Kussmaul Pump Plus 1200, Model # 52-21-1100, single output battery charger/air compressor provided. There shall be a Model 091-189-12, status charge center indicating the state of charge included.</p> <p>The automatic charger shall maintain one (1) set of batteries with a maximum output current of 40 amps.</p> <p>The 12 volt DC air compressor shall be installed to maintain the air system pressure when the vehicle is not in use.</p> <p>The battery charger shall be wired directly to the shoreline inlet.</p> <p>Battery charger/compressor shall be located in the front left body compartment.</p> <p>The battery charger indicator shall be displayed through the window behind the driver seat. The display shall be mounted on a bracket so that it is visible from outside the apparatus in the front lower corner of the window.</p> <p><u>SHORELINE</u></p> <p>There shall be one (1) shoreline inlet provided to operate the 120-volt circuits on the truck without the use of the generator.</p> <p>The shoreline receptacle (s) shall be provided with a NEMA 5-20, 120 volt, 20 amp, straight blade plug and gray cast cover.</p> <p>The shoreline shall be connected to battery charger and outlets in the D-4, P-4 and EMS compartments..</p> <p>A mating connector body shall also be supplied with the loose equipment.</p> <p>The shoreline receptacle shall be located in the driver side lower step well of cab.</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>		

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<p><u>GRAY SEALER REQUIRED</u></p> <p>Gray dielectric sealer shall be placed on all open electrical connections.</p> <p><u>ELECTRIC BRAKE CONTROL WITH TRAILER WIRING</u></p> <p>There shall be a Tekonsha Voyager, model 9030, electric trailer module provided in the cab for hauling a trailer. The control shall be capable of connecting up to a two (2) or four (4) wheel trailer.</p> <p>There shall also be a Berg seven (7) pin connector and plug provided at the rear of the apparatus for connection to the trailer. The connector shall be wired to conform to the SAE standards. The plug shall be shipped with loose equipment.</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>For improved reliability and ease of use, the load manager system shall be an integral part of the vehicle's solid state control system requiring no additional components to perform load management tasks. Load management systems which require additional components shall not be allowed.</p> <p>The system shall include the following features:</p> <ul style="list-style-type: none"> • System voltage monitoring. • A shed load shall remain inactive for a minimum of five minutes to prevent the load from cycling on and off. • Sixteen available electronic load shedding levels. • Priority levels can be set for individual outputs. • High Idle to not be controlled by the load manager. <ul style="list-style-type: none"> ○ If enabled: <ul style="list-style-type: none"> ▪ "Load Man Hi-Idle On" shall display on the information center. ▪ Hi-Idle shall not activate until 30 seconds after engine start up. • Individual switch "on" indicator to flash when the particular load has been shed. • The information center indicates system voltage. <p>The information center, where applicable, includes a "Load Manager" screen indicating the following:</p> <ul style="list-style-type: none"> • Load managed items list, with priority levels and item condition. 		

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<ul style="list-style-type: none"> • Individual load managed item condition: <ul style="list-style-type: none"> ○ ON = not shed ○ SHED = shed <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>For improved reliability and ease of use, the load sequencing system shall be an integral part of the vehicle's solid state control system requiring no additional components to perform load sequencing tasks. Load sequencing systems which require additional components shall not be allowed.</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> <ul style="list-style-type: none"> • Cab Heater and Air Conditioning • Crew Cab Heater (if applicable) • Crew Cab Air Conditioning (if applicable) • Exhaust Fans (if applicable) • Third Evaporator (if applicable) <p><u>HEADLIGHTS</u></p> <p>There shall be four (4) JW Speaker®, rectangular LED lights mounted in the front quad style, chrome housing on each side of the cab grille:</p> <ul style="list-style-type: none"> • The outside light on each side shall contain a Model 8800-12V - DOT/ECE LB LED, low beam module. • The inside light on each side shall contain a Model 8800 -12V - DOT/ECE HB LED, high beam module. 		

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	Bidder Complies	
	Yes	No
<p><u>DIRECTIONAL LIGHTS</u></p> <p>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.</p> <p>The color of the lenses shall be the same color as the LED's.</p> <p><u>BACK-UP ALARM</u></p> <p>A PRECO, Model 1040, solid-state electronic audible back-up alarm that actuates when the truck is shifted into reverse shall be provided. The device shall sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum ten (10) dBA above surrounding environmental noise levels.</p> <p><u>ELECTRICAL WIRING DIAGRAMS</u></p> <p>Two (2) electrical wiring diagrams, prepared for the model of chassis and body, shall be provided.</p> <p><u>MANUAL, FIRE APPARATUS PARTS</u></p> <p>Two (2) custom parts manuals for the complete fire apparatus shall be provided in hard copy with the completed unit.</p> <p>Two (2) compact discs (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</p>		

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	Bidder Complies	
	Yes	No
<p>photographs and line drawings of select items. The website also features electronic search tools to assist in locating parts quickly.</p> <p><u>MANUALS, CHASSIS SERVICE</u></p> <p>Two (2) chassis service manuals containing parts and service information on major components shall be provided with the completed unit.</p> <p>Two (2) compact discs (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 - 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>Two (2) chassis operation manuals shall be provided.</p> <p>Two (2) compact discs (CD) shall also be provided that shall include all of the information from the above manual.</p>		

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	Bidder Complies	
	Yes	No
<p><u>HEAVY DUTY RESCUE BODY CONSTRUCTION</u></p> <p>The body shall be built as a separate module prior to being mounted onto the substructure. The rescue body shall be fabricated of corrosion resistant, low carbon austenitic, brushed and painted 12 gauge (0.105") (3 mm) 304L and/or 201LN stainless steel. Due to superior corrosion resistance of 300 and 200 stainless grades, other grades of austenitic stainless steel, or any grade of ferritic or martensitic stainless shall not be acceptable. The body shall be properly welded into a unitized construction. Proper reinforcing and supports shall be utilized throughout the entire construction process to ensure strength and rigidity.</p> <p>The body shall be supported by 2.00" (51 mm) x 2.00" (51 mm) x 7 gauge (0.187") (5 mm) wall stainless steel tubing. The cross sill tubes shall be spaced approximately 15.00" (381 mm) on center and shall be interconnected to the body from front to rear.</p> <p>A 0.63" (16 mm) x 2.50" (64 mm) stainless steel bar shall be used as a stringer and shall be welded to the cross sills. The stringer shall be used to mount the body to the chassis frame rails.</p> <p>ROOF CONSTRUCTION</p> <p>The roof shall be constructed of 2.00" (51 mm) x 2.00" (51 mm) x 12 gauge (0.105") (2.8 mm) wall stainless steel tubing approximately 12.00" (305 mm) on center. The roof support tubes shall be tied together with 2.00" (51 mm) x 2.00" (51 mm) x 12 gauge (0.105") (2.8 mm) wall stainless steel tube stringers. The stringers shall be used to tie the body side sheets to the roof structure.</p> <p>BODY AND COMPARTMENT SUPPORT</p> <p>The substructure for the body shall not be integral with the body but be a separate assembly.</p> <p>The bottom of each lower compartment floor shall be supported by an under slung steel angle grid that shall be bolted to the chassis frame rails with grade 8 bolts in order to transfer major stress to the chassis frame and not through the body. The under slung support shall be constructed of 0.50" (13 mm) x 2.50" (64 mm) x 2.50" (64 mm) steel angle vertical supports. Horizontal members shall be 0.38" (10 mm) x 2.00" (51 mm) x 3.00" (76 mm) and 0.38" (10 mm) x 2.50" (64 mm) x 3.50" (89 mm) steel angle.</p> <p>The complete substructure shall be washed, primed and finish painted before being bolted to the chassis frame. A rubber coating shall be applied over the painted under slung support structure for an additional corrosion barrier.</p> <p>A 3.00" (76 mm) x 0.75" (19 mm) rubber liner shall be placed on top of the chassis frame rails. The liner shall be used to prevent metal to metal contact where the body stringer rests on the chassis frame rails.</p>		

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	Bidder Complies	
	Yes	No
<p>The compartment floors shall be bolted to the under slung substructure and the body shall be secured to the chassis frame by a minimum of four (4) tie-down assemblies. Each tie-down assembly shall consist of two (2) 2.00" (51 mm) x 6.25" (159 mm) x 0.75" (19 mm) steel plates and two (2) 14.00" (356 mm) long, 0.50" (13 mm) diameter steel rods. The tie-downs shall be easily accessible so that the body may be removed.</p> <p><u>BODY LENGTH</u> The length of the body shall be 282.00" (7,163 mm).</p> <p><u>BODY WIDTH</u> The width of the body shall be 100.00" (2,540 mm).</p> <p><u>Compartment Depth</u></p> <p><u>Standard Depth</u> All standard depth side body compartments shall measure 28.00" (711 mm) deep from the outside of the body to the rear compartment wall. The usable depth inside each side body compartment shall be 26.00" (660 mm) deep.</p> <p><u>Transverse</u> All transverse side body compartments shall have a usable depth of 26.00" (660 mm) at the floor level. These compartments shall extend over the frame rails through to the other side of the body.</p> <p><u>BODY HEIGHT</u> The height of the body shall be 90.00" without any roof mounted options.</p> <p><u>ROOF CONFIGURATION</u> A framed off section shall be provided at the front of the body roof for the roof mounted radiator.</p> <p><u>Hatch Compartments</u> One (1) hatch compartment shall be provided on each side of the radiator. The hatch compartment on the left side shall be 25.00" (635 mm) wide x 37.50" (953 mm) long x 16.50" (419 mm) deep. The hatch compartment on the right side shall be 9.00" (229 mm) wide x 58.00" (1473 mm) long x 16.50" (419 mm) deep.</p> <p>Hatch compartments shall be provided on each side of the body roof rearward of the radiator area.</p> <p>There shall be two (2) hatch compartments on the right side of the roof. Each compartment shall have a 102.00" (2591 mm) long door opening.</p>		

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	Bidder Complies	
	Yes	No
<p>There shall be a total of three (3) hatch compartments on the left side of the roof. The two (2) forward compartments shall have 72.00" (1829 mm) long door openings. The rearmost hatch compartment on the left side of the roof shall have a 63.00" (1600 mm) long door opening.</p> <p>All hatch compartments shall be 30.00" (762 mm) wide x 16.50" (419 mm) deep.</p> <p>All compartment doors shall hinge on the outboard side and shall be held open with gas cylinder struts.</p> <p>The outside walls of the compartments shall be a double wall design to prevent equipment from denting the outside painted surface.</p> <p>A 1.00" (25 mm) diameter drain shall be provided in each compartment floor and shall be routed to drain below the body.</p> <p>A 4.00" (102 mm) diameter light shall be mounted to the underside of each hatch door. The light shall be recessed, rubber mounted, shall have a diffuser lens and shall have a shock protected bulb. The light shall be wired to an automatic door switch and to the "open door" indicator light inside the cab.</p> <p><u>Recessed Walkway</u></p> <p>A recessed walkway shall be centered on the roof between the hatch compartments. The walkway shall not be less than 30.00" (762 mm) wide x 16.50" (419 mm) deep and shall run the length of the body up to the framed off section for the radiator.</p> <p>The walkway shall be constructed of 12 gauge (0.105", 3 mm) 304L stainless steel and supported by 2.00" (51 mm) x 2.00" (51 mm) x 16 gauge (0.059", 2 mm) wall stainless steel tubing spaced approximately 12.00" (305 mm) on center.</p> <p>The walking surface of the walkway shall be aluminum treadplate that shall be bonded to the stainless steel sub-floor. All seams shall be caulked for a water tight seal.</p> <p>A chrome plated hooded step light shall be provided every 4.00' (1219 mm) in the walkway. The walkway lights shall be the same make and model as the rear step lights and shall be controlled in the same manner as the rear step lights.</p> <p><u>ADJUSTABLE HATCH COMPARTMENT DIVIDER</u></p> <p>A longitudinal adjustable hatch divider made of .12" aluminum shall be provided. The divider shall be fastened to aluminum tracks on front and rear of the hatch interior to allow side-to-side adjustment.</p> <p>A total of four (4) shall be provided one (1) in the three (3) 72" wide and one (1) in the rear 120" wide hatch compartments.</p>		

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	Bidder Complies	
	Yes	No
<p><u>ROLL-UP DOOR, SIDE COMPARTMENTS</u></p> <p>There shall be ten (10) compartment doors installed on the side compartments, double faced, aluminum construction, painted one (1) color to match the lower portion of the body and manufactured by AMDOR™ brand roll-up doors.</p> <p>Door(s) shall be constructed using 1.00" (25 mm) extruded double wall aluminum slats which shall feature a flat smooth interior surface to provide maximum protection against equipment hang-up. The slats shall be connected with a structural driven ball and socket hinge designed to provide maximum curtain diaphragm strength. Mounting and adjusting the curtain shall be done with a clip system that connects the curtain to the balancer drum allowing for easy tension adjustment without tools. The slats shall be mounted in reusable slat shoes with positive snap-lock securement.</p> <p>Each slat shall incorporate weather tight recessed dual durometer seals. One (1) fin shall be designed to locate the seal within the extrusion. The second fin shall serve as a wiping seal which shall also allow for compression to prevent water ingress.</p> <p>The doors shall be mounted in a one (1)-piece aluminum side frame with recessed side seals to minimize seal damage during equipment deployment. All seals including side frames, top gutters and bottom panel are to be manufactured utilizing non-marring materials.</p> <p>Bottom panel flange of roll-up door shall be equipped with two (2) cut-outs to allow for easier access with gloved hands.</p> <p>A polished stainless steel lift bar with locking key latches to be provided for each roll-up door. The keys to be Model 751 to match all compartment and cab doors. The lift bar shall be located at the bottom of door with striker latches installed at the base of the side frames. Side frame mounted door strikers shall include support beneath the stainless steel lift bar to prevent door curtain bounce, improve bottom seal life expectancy and to avoid false door ajar signals.</p> <p>All injection molded roll-up door wear components shall be constructed of Type 6 nylon.</p> <p>Each roll-up door shall have a 3.00" (76 mm) diameter balancer/tensioner drum to assist in lifting the door. A garage door style shall not acceptable.</p> <p>The header for the roll-up door assembly shall not exceed 4.00" (102 mm).</p> <p>A heavy-duty magnetic switch shall be used for control of open compartment door warning lights.</p> <p><u>EXTERIOR COMPARTMENTS</u></p> <p>The exterior compartment layout, dimensions and requirements shall be minimum specifications. The compartments shall be constructed of 12-gauge (.105"), corrosion resistant, low carbon</p>		

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	Bidder Complies	
	Yes	No
<p>austenitic, brushed and painted 304L including all interior panels, floor and sides. Due to superior corrosion resistance of 300 stainless grades, other grades of austenitic stainless steels, or any grade of ferritic or martensitic stainless, shall not be acceptable. The assemblies shall be held inside fixtures while being welded.</p> <p>Compartment flooring shall be of the sweep out design with the floor higher than the compartment door frame. All compartments shall be supported on top, rear and bottom. The rear wall of each exterior compartment shall be welded to the cross sills.</p> <p><u>WHEEL WELLS</u></p> <p>The rear fenders shall be an integral part of the body sides and compartments. The inside of the fender shall be fitted with a full circular inner fender liner. All screws and bolts, which protrude into a compartment, shall have acorn nuts attached.</p> <p><u>LEFT FORWARD COMPARTMENTS</u></p> <p><u>First Compartment</u></p> <p>The first compartment shall be located directly behind the cab. The compartment dimensions shall be 61.13" (1,553 mm) wide x 66.88" (1,699 mm) high. The compartment door frame opening shall be 56.00" (1,422 mm) wide x 64.00" (1,626 mm) high. The compartment clear door opening shall be 53.50" (1,359 mm) wide x 58.00" (1,473 mm) high.</p> <p><u>Second Compartment</u></p> <p>The second compartment shall be located behind the first compartment and directly ahead of the rear wheels. The compartment dimensions shall be 42.88" (1,089 mm) wide x 66.88" (1,699 mm) high. The compartment shall be transverse, extending through to the other side of the body. The area over the frame rails shall be 42.88" (1,089 mm) wide x 49.25" (1,251 mm) high. The compartment door frame opening shall be 40.00" (1,016 mm) wide x 64.00" (1,626 mm) high. The compartment clear door opening shall be 37.50" (953 mm) wide x 58.00" (1,473 mm) high.</p> <p><u>Compartment Loading</u></p> <p>The first compartment shall be capable of holding 800 lb (363 kg). The second compartment shall be capable of holding 1,100 lb (499 kg). The area over the frame rails in the second compartment shall be capable of holding an additional 1,000 lb (454 kg).</p> <p><u>LEFT OVER WHEEL COMPARTMENTS</u></p> <p><u>Forward Compartment</u></p> <p>Located above the forward rear wheels shall be a compartment.</p> <p>The compartment dimensions shall be 54.38" (1381 mm) wide x 38.13" (969 mm) high. The compartment shall be transverse, extending through to the other side of the body. The area over</p>		

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	Bidder Complies	
	Yes	No
<p>the frame rails shall be 54.38" (1381 mm) wide x 38.13" (969 mm) high. The compartment door frame opening shall be 51.50" (1308 mm) wide x 35.25" (895 mm) high. The compartment clear door opening shall be 49.00" (1245 mm) wide x 30.25" (768 mm) high.</p> <p><u>Rear Compartment</u> Located above the rearward rear wheels shall be a compartment.</p> <p>The compartment dimensions shall be 57.00" (1448 mm) wide x 38.13" (969 mm) high. The compartment shall be transverse, extending through to the other side of the body. The area over the frame rails shall be 57.00" (1448 mm) wide x 38.13" (969 mm) high. The compartment door frame opening shall be 51.50" (1308 mm) wide x 35.25" (895 mm) high. The compartment clear door opening shall be 49.00" (1245 mm) wide x 30.25" (768 mm) high.</p> <p><u>Compartment Loading</u> Each compartment shall be capable of holding 1,200 lb (545 kg). The area over the frame rails in each compartment shall be capable of holding an additional 1,000 lb (454 kg).</p> <p><u>LEFT REAR SIDE COMPARTMENT</u> Located behind the rear wheels shall be the left rear side compartment. The compartment dimensions shall be 62.13" (1578 mm) wide x 66.88" (1699 mm) high. The compartment door frame opening shall be 60.00" (1524 mm) wide x 64.00" (1626 mm) high. The compartment clear door opening shall be 57.50" (1461 mm) wide x 58.00" (1473 mm) high.</p> <p><u>Compartment Loading</u> The compartment shall be capable of holding 1,400 lb (635 kg).</p> <p><u>RIGHT FORWARD COMPARTMENTS</u></p> <p><u>First Compartment</u> The first compartment shall be located directly behind the cab. The compartment dimensions shall be 61.13" (1,553 mm) wide x 54.57" (1,386 mm) high. The compartment door frame opening shall be 56.00" (1,422 mm) wide x 64.00" (1,626 mm) high. The compartment clear door opening shall be 53.50" (1,359 mm) wide x 58.00" (1,473 mm) high.</p> <p><u>Second Compartment</u> The second compartment shall be located behind the first compartment and directly ahead of the rear wheels. The compartment dimensions shall be 42.88" (1,089 mm) wide x 66.88" (1,699 mm) high. The compartment shall be transverse, extending through to the other side of the body. The area over the frame rails shall be 42.88" (1,089 mm) wide x 49.25" (1,251 mm) high. The compartment door frame opening shall be 40.00" (1,016 mm) wide x 64.00" (1,626 mm) high. The compartment clear door opening shall be 37.50" (953 mm) wide x 58.00" (1,473 mm) high.</p>		

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	Bidder Complies	
	Yes	No
<p><u>Compartment Loading</u> The first compartment shall be capable of holding 800 lb (363 kg). The second compartment shall be capable of holding 1,100 lb (499 kg). The area over the frame rails in the second compartment shall be capable of holding an additional 1,000 lb (454 kg).</p> <p><u>RIGHT OVER WHEEL COMPARTMENTS</u></p> <p><u>Forward Compartment</u> Located above the forward rear wheels shall be a compartment.</p> <p>The compartment dimensions shall be 54.38" (1381 mm) wide x 38.13" (969 mm) high. The compartment shall be transverse, extending through to the other side of the body. The area over the frame rails shall be 54.38" (1381 mm) wide x 38.13" (969 mm) high. The compartment door frame opening shall be 51.50" (1308 mm) wide x 35.25" (895 mm) high. The compartment clear door opening shall be 49.00" (1245 mm) wide x 30.25" (768 mm) high.</p> <p><u>Rear Compartment</u> Located above the rearward rear wheels shall be a compartment.</p> <p>The compartment dimensions shall be 57.00" (1448 mm) wide x 38.13" (969 mm) high. The compartment shall be transverse, extending through to the other side of the body. The area over the frame rails shall be 57.00" (1448 mm) wide x 38.13" (969 mm) high. The compartment door frame opening shall be 51.50" (1308 mm) wide x 35.25" (895 mm) high. The compartment clear door opening shall be 49.00" (1245 mm) wide x 30.25" (768 mm) high.</p> <p><u>Compartment Loading</u> Each compartment shall be capable of holding 1,200 lb (545 kg).</p> <p><u>RIGHT REAR SIDE COMPARTMENT</u> Located behind the rear wheels shall be the right rear side compartment. The compartment dimensions shall be 62.13" (1578 mm) wide x 66.88" (1699 mm) high. The compartment door frame opening shall be 60.00" (1524 mm) wide x 64.00" (1626 mm) high. The compartment clear door opening shall be 57.50" (1461 mm) wide x 58.00" (1473 mm) high.</p> <p><u>Compartment Loading</u> The compartment shall be capable of holding 1,400 lb (635 kg).</p> <p><u>REAR COMPARTMENT</u> <u>Roll-up Door</u> The rear compartment shall have a roll-up door.</p>		

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	Bidder Complies	
	Yes	No
<p>The door shall be double faced, aluminum construction, satin aluminum and manufactured by AMDOR™ brand roll-up doors.</p> <p>The door shall be constructed using 1.00" extruded double wall aluminum slats which shall feature a flat smooth interior surface to provide maximum protection against equipment hang-up. The slats shall be connected with a structural driven ball and socket hinge designed to provide maximum curtain diaphragm strength. Mounting and adjusting the curtain shall be done with a clip system that connects the curtain to the balancer drum allowing for easy tension adjustment without tools. The slats shall be mounted in reusable slat shoes with positive snap-lock securement.</p> <p>Each slat shall incorporate weather tight recessed dual durometer seals. One (1) fin shall be designed to locate the seal within the extrusion. The second shall serve as a wiping seal which shall also allow for compression to prevent water ingress.</p> <p>The door shall be mounted in a one (1)-piece aluminum side frame with recessed side seals to minimize seal damage during equipment deployment. All seals including side frames, top gutters and bottom panel are to be manufactured utilizing non-marring materials.</p> <p>Bottom panel flange of roll-up door shall be equipped with two (2) cut-outs to allow for easier access with gloved hands.</p> <p>A polished stainless steel lift bar with locking key latches to be provided for each roll-up door. The keys to be Model 751 to match all compartment and cab doors. The lift bar shall be located at the bottom of door with striker latches installed at the base of the side frames. Side frame mounted door strikers shall include support beneath the stainless steel lift bar to prevent door curtain bounce, improve bottom seal life expectancy and to avoid false door ajar signals.</p> <p>All injection molded roll-up door wear components shall be constructed of Type 6 nylon.</p> <p>The door shall have a 3.00" diameter balancer/tensioner drum to assist in lifting the door. A garage door style shall not acceptable.</p> <p>The header for the roll-up 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>Compartment Size</u></p> <p>The rear compartment shall be 40.00" (1016 mm) wide x 67.00" (1702 mm) high x 26.00" (660 mm) deep at the floor level. The area over the frame rails shall be 63.63" (1616 mm) deep. The</p>		

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	Bidder Complies	
	Yes	No
<p>compartment door frame opening shall be 40.00" (1016 mm) wide x 64.00" (1626 mm) high. The clear door opening shall be 37.50" (953 mm) wide x 58.00" (1473 mm) high.</p> <p><u>Compartment Loading</u></p> <p>The compartment shall be capable of holding 1,000 lb (454 kg). The area over the frame rails shall be capable of holding an additional 2,000 lb (908 kg).</p> <p><u>DOOR GUARD</u></p> <p>There shall be eleven (11) compartment doors that shall include a guard/drip pan designed to protect the roll-up door from damage when in the retracted position and contain any water spray. The guard shall be fabricated from stainless steel and installed underneath each roll-up compartment door.</p> <p><u>COMPARTMENT LIGHTING</u></p> <p>There shall be eleven (11) compartments with Amdor, Model AY-9220, white 12 volt DC LED compartment light strips. The lights shall be mounted with mechanical fasteners.</p> <p>There shall be two (2) strip lights installed vertically in each compartment opening per the latest NFPA requirements.</p> <p>The lights shall be activated when the battery switch is on and the respective compartment door is opened.</p> <p><u>COMPARTMENT LIGHTING</u></p> <p>Metal clamps shall be used to retain the strip lighting in all body compartments.</p> <p><u>COMPARTMENT LIGHTING</u></p> <p>There shall be seven (7) hatch compartments that include Amdor, Model AY-9220-48, 48.00" white 12 volt DC LED compartment light strips. The hatch compartments shall be in each hatch compartment. The lights shall be mounted with mechanical fasteners.</p> <p>The lights shall be activated when the battery switch is on and the door is opened.</p> <p><u>HITCH RECEIVERS</u></p> <p>A total of three (3) hitch receivers shall be provided on the apparatus. The hitch receivers shall be constructed of heavy steel tubing and reinforced to the apparatus framework.</p> <p><u>Rear Receiver</u></p> <p>There shall be one (1) hitch receiver installed under the body at the rear. The hitch receiver shall have a Class IV rating of 10,000 lb towing and 1000 lb tongue weight when used with a weight distributing hitch assembly. Included with the rear receiver shall be a heavy-duty slide-in tube and ball assembly held in place with a retaining pin.</p>		

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	Bidder Complies	
	Yes	No
<p><u>Trailer Wiring</u> The trailer connection for the rear hitch receiver shall be a seven (7)-way flat blade recreational vehicle connector for trailer wiring compatible with electric brake systems, and a second connector with inverted ground meeting SAE J560 standards providing an auxiliary connection for warning devices.</p> <p><u>Side Receivers</u> There shall be one (1) hitch receiver installed under the body behind the rear wheels on each side of the body. The side hitch receivers shall each be capable of retaining a portable winch with a rating of no more than 9,500 lb.</p> <p><u>LADDER ZICO MODEL RL-2-6</u> A Zico model RL-2-6 Quic-Ladder shall be provided at the rear of the body on the on the right (officer's) side side.</p> <p>The ladder handrails shall be constructed out of 1.25" heavy-walled aluminum tubing that is covered with a black, heat-resistant, powder coated finish. The ladder handrails shall not extend above the body roof line.</p> <p>Each step shall have a flat non-skid surface that is 3" deep x 15.5" wide. A swing-out and down extension section at the bottom of the ladder shall be provided.</p> <p><u>REAR STEP</u> An 8.00" step constructed of bright aluminum treadplate shall be installed at the rear of the body above the rear compartment. The step shall extend out from the recessed walkway area to allow a surface to step on from the ladder mounted on the side of the body.</p> <p><u>TOOL BOX</u> Tool box(es) construction of .50" thick, UPF plastic with a cut out carrying handle on each end shall be provided.</p> <p>The tool box(es) shall be held in place to prevent movement while the vehicle is in motion. There shall be a plastic edge provided at the front of the storage location providing a sliding surface for box removal.</p> <p>The exterior box dimensions shall be 12.75" wide X 23" deep X 10" high.</p> <p>There shall be six (6) provided. The tool box(es) shall be located in D-1 three (3) on the floor and three (3) second adjustable height tray.</p> <p><u>TOOL BOX</u> A tool box shall be furnished.</p>		

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	Bidder Complies	
	Yes	No
<p>The outside size shall be 23.00" long x 11.00" wide x 10.00" deep.</p> <p>The tool box shall be black in color.</p> <p>Construction shall be of .50" polypropylene plastic with joints and seams nitrogen welded. A cut out carrying handle shall be provided on each end.</p> <p>There shall be three (3) provided. It shall be located three (3) on the tray in D-4.</p> <p><u>ADJUSTABLE HATCH COMPARTMENT DIVIDER</u></p> <p>An adjustable hatch divider made of .12" aluminum shall be provided. The divider shall be fastened to aluminum tracks on both sides of the hatch interior to allow front to back adjustment.</p> <p>A total of four (4) shall be provided one (1) in D-1, D-3, P-2, and P-3.</p> <p><u>COMPARTMENT DIVIDER (HORIZONTAL)</u></p> <p>A .12" aluminum horizontal compartment divider shall be provided in one (1) in D-4 above the toolbox and Little Giant Ladder.</p> <p>A total of one (1) divider(s) shall be provided.</p> <p><u>COMPARTMENT DIVIDER</u></p> <p>A .12" thick aluminum vertical compartment divider shall be provided in one (1) in D-4 between the Little Giant and the toolbox and trays, one (1) in D-5 30" from the rear wall between the CB Panel and shelves, one (1) in D-1 14" from the rear bulkhead. The divider shall be secured in place with #10 self tapping screws.</p> <p>A total of three (3) divider(s) shall be provided.</p> <p><u>ADJUSTABLE VERTICAL DIVIDER</u></p> <p>An adjustable vertical compartment divider shall be provided. The divider shall be constructed of 0.12" aluminum. The divider shall be fastened to aluminum tracks on the top and bottom to allow side to side adjustment.</p> <p>A total of four (4) divider(s) shall be provided two (2) in P-3 between the front bulkhead and the slide-out tray approximately 14" apart, two (2) in P-2 approximately 14.25" high.</p> <p><u>FLOOR EXTENSION</u></p> <p>There shall be a floor extension from the transversed area over the frame to the compartment door. The extension shall have a 1.50" vertical lip and a return bend. The extension shall be support by angles off the side partitions of the compartment.</p> <p>A total of three (3) shall be provided and located one (1) in D-4, P-4, and P-5.</p>		

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	Bidder Complies	
	Yes	No
<p><u>AIR BAG RACK</u></p> <p>A rack for seven (7) air bag(s) shall be installed in a horizontal orientation within the in P-2 above the air bag controllers.</p> <p>The clear rack slot dimensions shall be one (1) 29" W X 40" D X 4" H, one (1) 20" W X 36" D X 4" H, one (1) 22" W X 30" D X 3" H, one (1) 16" W X 30" D X 3" H, one (1) 38" W X 40" D X 4" H, one (1) 38" W X 40" D X 5" H, one (1) one (1) 11" W X 12" H X 20" D.</p> <p>The rack shall be fabricated of 0.125" aluminum, and shall be finished to match the compartment interior. Access to each air bag shall be provided through a semi-circle cutout in the leading edge of each slot. Nylon straps with hook and loop closures shall be provided to hold the air bags in the rack.</p> <p><u>STORAGE TROUGH</u></p> <p>A trough assembly shall be provided for storing equipment in compartment in the upper left (driver's) side of R-1.</p> <p>The trough(s) shall be fabricated of .125" aluminum with the exterior finished to match the compartment interior. The interior of the trough(s) shall not be finished. The storage trough clear dimensions shall be 14" wide X 10" high approximately 120" long.</p> <p>There shall be a retaining strap with hook and loop fastener on both the driver side and the passenger side provided to hold the equipment in place.</p> <p>There shall be one (1) storage trough(s) provided.</p> <p><u>STORAGE TROUGH</u></p> <p>A trough assembly shall be provided for storing equipment in compartment in R-1 on the left bulkhead wall underneath the upper trough to store the Elevator Hook.</p> <p>The trough(s) shall be fabricated of .125" aluminum with the exterior finished to match the compartment interior. The interior of the trough(s) shall not be finished. The storage trough clear dimensions shall be 4.0" wide X 4.0" high X 8' long.</p> <p>There shall be a single retaining strap with hook and loop fastener provided to hold the equipment in place.</p> <p>There shall be one (1) storage trough(s) provided.</p> <p><u>STORAGE TROUGH</u></p> <p>A trough assembly shall be provided for storing equipment in compartment in R-1 to the right of the pike Pole and Hook storage.</p>		

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	Bidder Complies	
	Yes	No
<p>The trough(s) shall be fabricated of .125" aluminum with the exterior finished to match the compartment interior. The interior of the trough(s) shall not be finished. The storage trough clear dimensions shall be 27" wide X 10" high.</p> <p>There shall be no restraint provided to hold the equipment in place.</p> <p>There shall be one (1) storage trough(s) provided.</p> <p><u>ADJUSTABLE SHELF, SPECIAL SIZE</u></p> <p>An adjustable shelf with a capacity of 500 lb (227 kg) shall be provided. The shelf construction shall consist of 0.188" (5 mm) aluminum with 2.00" (51 mm) high sides along the entire perimeter of the shelf. The shelf shall be finished to match the compartment interior.</p> <p>The shelf shall be a special size as specified by the customer with a maximum depth of no more than 24.00" (610 mm) deep.</p> <p>The dimensions of the shelf shall be approximately 30" wide X 24" deep.</p> <p>The shelf shall be infinitely adjustable by means of threaded fasteners that slide in an aluminum track.</p> <p>A total of two (2) shall be provided..</p> <p>The shelf(ves) shall be located two (2) in D-5 between the vertical partition and the CB Panel.</p> <p><u>TOOL BOARD W/TRAY</u></p> <p>An aluminum tool board shall be provided.</p> <p>It shall be a minimum of .188" thick with .203" diameter holes in a pegboard pattern with 1.00" centers between holes. Toolboard shall be designed as high as possible to fit in the allotted space.</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 slide out tray sized to fit in a specified compartment with a minimum tool load of 500 lb. Tray shall have a 2" lip up around the perimeter. Tray shall be fabricated from .125" smooth aluminum.</p> <p>Slides (a minimum of two per tray) shall be undermount - roller bearing type rated at 500lbs per pair with a 100% safety factor.</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 also be able to operated smoothly without bumps or sticky spots after a 40 hour vibrations test (reference MIL-STD 810E section 514.4</p>		

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	Bidder Complies	
	Yes	No
<p>basic transportation vibration category 1) while fully loaded. Proof of compliance shall be provided upon request.</p> <p>The board and tray shall have positive lock in the stowed and extended position.</p> <p>There shall be one (1) provided, one (1) in D-1 between the rear bulkhead and the vertical partition.</p> <p><u>TOOL DRAWER CABINET</u></p> <p>A tool drawer cabinet with two (2) slide-out drawers shall be provided. Both the cabinet and the drawers shall be constructed of 0.125" aluminum. The exterior of the cabinet shall be finished to match the compartment it is mounted in.</p> <p>The cabinet shall be 23.75" deep x 17.63" high and shall be as wide as possible to fit into the specified mounting location.</p> <p>Each slide-out drawer shall be 23.00" deep x 6.56" high and shall be as wide as possible. The interior of the drawer shall be provided with a natural aluminum finish. Each drawer shall be capable of holding 250 lb.</p> <p>There shall be a chromed metal grab handle provided on the drawer face. Automatic locks shall be provided for both the "in" and "out" positions. The lock trip mechanism shall be located at the front of the drawer for ease of use with a gloved hand.</p> <p>A total of one (1) tool drawer cabinet(s) shall be provided in the lower section of D-5.</p> <p><u>TOOL DRAWER DIVIDER</u></p> <p>A .12" aluminum divider shall be provided inside a tool drawer. The divider shall be mounted on shelf tracks to allow for adjustment from side to side.</p> <p>A total of six (6) shall be provided three (3) spaced evenly in each drawer in the lower section of compartment D-5.</p> <p><u>SLIDE-OUT, ADJUSTABLE TRAY, STANDARD DEPTH</u></p> <p>A slide-out, adjustable height tray shall be provided. The tray shall be constructed of 0.19" (5 mm) thick aluminum formed to provide a 2.00" (51 mm) high sides around the entire perimeter of the tray.</p> <p>The tray shall be as deep as possible for a standard depth compartment and shall be built to fit the width of the area where the tray is installed.</p>		

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	Bidder Complies	
	Yes	No
<p>The 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 compartment.</p> <p>An automatic lock shall be provided for both the in and out tray positions. The lock trip mechanism shall be located at the front of the tray and shall be easily operated with a gloved hand.</p> <p>The capacity rating of the tray shall be 500 lb (227 kg) in the extended position.</p> <p>A total of five (5) tray(s) shall be provided two (2) in D-1, one (1) in P-1, two (2) in P-5.</p> <p><u>ONE (1)-WAY UTILITY TRAY, 1/2 TRANSVERSE</u></p> <p>A one (1)-way slide-out utility type tray shall be provided. The bottom of the tray shall constructed of 0.188" (5 mm) thick aluminum while special aluminum extrusions shall be utilized for the tray sides, ends, and tracks. The corners shall be welded to form a rigid unit.</p> <p>The tray shall be 3.00" (76 mm) high x half depth of the transverse compartment. The tray shall be built to fit the width of the area where the tray is installed.</p> <p>The tray shall slide out two-thirds of its length in one (1) direction only.</p> <p>Automatic locks shall be provided for both the in and out tray positions.</p> <p>The tray shall be supported with a minimum of four (4) ball bearing rollers.</p> <p>The total capacity rating of the tray shall be 500 lb (227 kg) minimum in the extended position.</p> <p>The tray shall be adjustable up and down within the compartment.</p> <p>A total of one (1) tray(s) shall be provided one (1) in D-3.</p> <p><u>SHELF DIVIDER</u></p> <p>A 10.00" high .12" aluminum vertical divider shall be provided on a tray or shelf. The divider shall be mounted on shelf tracks to allow for adjustment from side to side.</p> <p>A total of three (3) shall be provided on the slide-out tray in D-3.</p> <p><u>ONE (1)-WAY UTILITY TRAY, 3/4 TRANSVERSE</u></p> <p>A one (1)-way slide-out utility type tray shall be provided. The bottom of the tray shall constructed of 0.188" (5 mm) thick aluminum while special aluminum extrusions shall be utilized for the tray sides, ends, and tracks. The corners shall be welded to form a rigid unit.</p> <p>The tray shall be 3.00" (76 mm) high x three quarters of the depth of the transverse compartment. The tray shall be built to fit the width of the area where the tray is installed.</p>		

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	Bidder Complies	
	Yes	No
<p>The tray shall slide out two-thirds of its length in one (1) direction only.</p> <p>Automatic locks shall be provided for both the in and out tray positions.</p> <p>The tray shall be supported with a minimum of six (6) ball bearing rollers.</p> <p>The total capacity rating of the tray shall be 500 lb (227 kg) minimum in the extended position.</p> <p>The tray shall be adjustable up and down within the compartment.</p> <p>A total of two (2) tray(s) shall be provided two (2) in P-4.</p> <p><u>SLIDE-OUT/TILT-DOWN TRAY, STANDARD DEPTH</u></p> <p>A slide-out, tilt-down tray shall be provided. The bottom of the tray shall constructed of 0.188" (5 mm) thick aluminum while special aluminum extrusions shall be utilized for the tray sides, ends, and tracks. The corners shall be welded to form a rigid unit.</p> <p>The interior of the tray shall be 3.00" (76 mm) high and as deep as possible for a standard depth compartment. The tray shall be built to fit the width of the area where the tray is installed.</p> <p>A spring loaded lock shall be provided on each side at the front of the tray. Activating the locks shall allow the tray to slide out approximately two-thirds of its length from the stowed position and tip 30 degrees down from horizontal. The tray shall be equipped with ball bearing rollers for smooth operation.</p> <p>Rubber padded stops shall be provided for the tray in both the stowed and extended positions.</p> <p>The capacity rating of the tray shall be a minimum of 200 lb (91 kg) in the extended position.</p> <p>The vertical position of the tray within the compartment shall be adjustable.</p> <p>There shall be one (1) tray(s) provided one (1) in D-4 above the tool box and Little Giant Ladder.</p> <p><u>PIKE POLE STORAGE</u></p> <p>There shall be plastic storage tubes provided for four (4) pike poles in the rear compartment.</p> <p>The size and brand of the pike poles stored shall be as the Cambridge Fire Department may direct during the pre-construction conferance.</p> <p>The pike poles shall be stored allowing them to be removed without the removal of adjacent equipment.</p> <p>To identify the length of each pike pole, there shall be a stainless steel faceplate with identification tags provided.</p>		

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	Bidder Complies	
	Yes	No
<p>The pike poles shall be located in the left (driver's) side trough.</p> <p><u>REAR BUMPER</u> A rear bumper shall be provided that is an integral part of the rear body substructure.</p> <p>The bumper shall be approximately 13.00" deep x 90.00" wide.</p> <p>The bumper shall have an aluminum treadplate deck with a 45 degree angle on the outside corners. The horizontal standing area shall have Morton Tread-Grip inserts welded between the treadplated areas.</p> <p><u>REAR WALL, BODY MATERIAL</u> The rear wall shall be smooth and the same material as the body.</p> <p><u>TOW EYES</u> Two (2) rear painted tow eyes shall be located at the rear of the apparatus and shall be mounted directly to the chassis frame rails. The inner and outer edges of the tow eyes shall have a radius.</p> <p><u>SHELF DIVIDER</u> A .12" aluminum vertical divider shall be provided on a tray or shelf. The divider shall be mounted on shelf tracks to allow for adjustment from side to side.</p> <p>A total of three (3) shall be provided one (1) P-5, and two (2) in D-3 on the floor mounted tray.</p> <p><u>SLIDE-OUT FLOOR MOUNTED TRAY</u> There shall be two (2) floor mounted slide-out tray(s) provided one (1) in D-4, D-1. A rating on this tray shall not be provided due to the elimination of sides. The tray(s) shall be constructed of .25" thick aluminum plate. The tray shall be flat with no sides or flanges.</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>		

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	Bidder Complies	
	Yes	No
<p><u>STANDARD DEPTH SLIDE-OUT FLOOR MOUNTED TRAY</u></p> <p>There shall be four (4) floor mounted slide-out tray(s) with 2.00" sides provided one (1) in D-3, P-1, P-4, and P-5. Each tray shall be rated for up to 500 lb in the extended position. The tray(s) shall be constructed of 0.19" aluminum with welded corners. The finish shall be painted to match compartment interior.</p> <p>Each tray shall be mounted on two (2) under mount, roller bearing type slides. Each slide shall be rated at 250 lb with a factor of safety of two (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 slide shall require no more than a 50 lb 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>ONE WAY UTILITY SLIDE-OUT FLOOR MOUNTED TRAY</u></p> <p>There shall be one (1) floor mounted utility slide-out tray(s) provided one (1) in P-3 between the rear bulkhead and the vertical partitions. Each tray shall be rated for up to 500lb in the extended position. The tray(s) shall be constructed of .19" thick aluminum for the tray bottom and special aluminum extrusions for the tray sides, ends and tracks. The corners shall be welded. The finish shall be painted to match compartment interior.</p> <p>The tray shall be 4.00" high x half the depth of the transverse compartment x as wide as possible for the compartment.</p> <p>The tray shall be supported with a minimum of six (6) ball bearing rollers. The tray shall slide out two thirds (2/3) of its length in one direction.</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>FLOOR MOUNTED TRAY AND SHELF ASSEMBLY</u></p> <p>A floor mounted slide-out tray and adjustable shelf assembly shall be provided in the rear compartment. The assembly shall be finished to match the compartment interior.</p>		

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	Bidder Complies	
	Yes	No
<p><u>Floor Mounted Utility Style Slide-Out Tray</u></p> <p>A utility style slide-out tray shall be mounted on the floor of the compartment above the frame rails.</p> <p>The tray shall be rated for up to 1,000 lb in the extended position. The tray shall be constructed of 0.19" thick aluminum for the tray bottom and special aluminum extrusions for the tray sides, ends and tracks. There shall be 1.00" x 2.00" tube stringers provided underneath the floor of the tray for additional tray support. The corners shall be welded.</p> <p>The tray shall have 3.00" high sides, shall be 60.00" deep and shall be as wide as possible for the designated mounting location.</p> <p>The tray shall be supported with a minimum of twelve (12) ball bearing rollers. The tray shall slide out two thirds (2/3) of its length in one (1) direction.</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>Vertical Partitions</u></p> <p>A total of two (2) fixed vertical partitions shall be provided in the tray. Each partition shall be constructed 0.19" aluminum. Each partition shall be approximately 25.00" tall and shall span the full depth of the tray. For added strength, a 1.00" flange shall be provided on the ends of each partition and gussets shall be provided on the floor. An aluminum sheet shall be provided on both the top and rear of the partitions to form a rigid structure.</p> <p>The left partition shall be positioned 14.00" from the left side of the tray and the right partition shall be positioned 10.00" from the right side of the tray.</p> <p><u>Adjustable Shelves</u></p> <p>There shall be two (2) adjustable shelves provided between the vertical partitions. Each shelf shall be constructed of 0.19" aluminum and shall have 2.00" high sides.</p> <p>Each shelf shall be infinitely adjustable by means of threaded fasteners that slide in aluminum tracks.</p> <p><u>COMPARTMENT FLOOR SCUFFPLATE</u></p> <p>Aluminum treadplate shall be provided on the floor of 11 compartments. The locations shall be, in each equipment compartment.</p> <p>The edges of the treadplate shall be completely caulked before installation to prevent corrosion.</p>		

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	Yes	No
<p><u>DRAWER ASSEMBLY</u></p> <p>A slideout drawer assembly shall be installed in D-4 between the front bulkhead and the Little Giant Ladder Trough.</p> <p>The clear dimension of the top drawer shall be 7.25" with a face plate that is 8.00" high x 21.00" deep. The clear dimension of the second drawer shall be 4.75" with a face plate that is 5.00" high x 21.00" deep. The clear dimension of the third drawer shall be 3.75" with a face plate that is 4.00" high x 21.00" deep. The clear dimension of the fourth drawer shall be 3.75" with a face plate that is 4.00" high x 21.00" deep. The clear dimension of the bottom drawer shall be 3.75" with a face plate that is 4.00" high x 21.00" deep.</p> <p>The drawers shall have a capacity of 250 pounds.</p> <p>The drawers shall be mounted in a cabinet housing constructed of light gray powder coated aluminum with anodized aluminum frames. The housing shall be 24.00" deep, and completely enclose the drawer.</p> <p>A full-length aluminum extruded rail shall be provided at the top edge of each drawer. This rail shall act as the latching mechanism as well as the handle for each drawer.</p> <p>There shall be a total of one (1) provided.</p> <p><u>RETENTION NETTING</u></p> <p>A net(s) shall be provided to retain compartment equipment from laying against the compartment door. The net(s) shall be located one (1) in P-3 and the upper section of R-1.</p> <p>Each compartment door opening shall be provided with a heavy black nylon webbing made of 1.00" nylon strap with a 2.00" box pattern. The nylon webbing shall be fastened to one (1) side of the compartment in a fixed manner. The remaining sides shall be secured with buckles to hold the web closed.</p> <p>A total of two (2) shall be provided.</p> <p><u>MATTING, COMPARTMENT FLOOR</u></p> <p>Turtle Tile compartment matting shall be provided in 32 compartments on the compartment floor. The locations are, in each equipment compartment.</p> <p>The Turtle Tile shall be gray and the leading edge of the matting shall include the beveled edge. The beveled edge shall be gray .</p> <p><u>MATTING, FLOOR OF HATCH COMPARTMENT</u></p> <p>There shall be Turtle Tile compartment matting provided on the floor of the designated hatch compartment(s).</p>		

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	Bidder Complies	
	Yes	No
<p>The color of Turtle Tile matting shall be gray.</p> <p>The Turtle Tile matting shall be provided on the floor of a total of five (5) hatch compartment(s) located in each hatch compartment.</p> <p><u>MATTING, COMPARTMENT SHELVING</u></p> <p>Turtle Tile compartment matting shall be provided in 25 shelves. The locations are, on each shel and slide-out tray.</p> <p>The color of Turtle Tile shall be gray.</p> <p><u>SCUFFPLATE</u></p> <p>The compartment floor shall be reinforced with a section of polished stainless steel scuffplates that shall have a 1.00" lip around all four (4) sides.</p> <p>The scuffplate shall be located in one (1) compartments. The scuffplates shall be secured in place and have all edges sealed with silicon caulk. The locations are,in P-1.</p> <p><u>RUB RAIL</u></p> <p>Bottom edge of the side compartments shall be trimmed with a bright aluminum extruded rub rail.</p> <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>The rub rails shall be spaced out far enough to protect the lift bars on the rollup doors.</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> <p>A rubber welting shall be provided between the body and the crown to seal the seam and restrict moisture from entering.</p> <p><u>AIR BOTTLE STORAGE (DOUBLE)</u></p> <p>A total of two (2) air bottle compartments shall be provided. The air bottle compartment(s) shall be located one (1) on the left and right side between the rear axles. Each air bottle compartment shall be of adequate size to accommodate two (2) air bottles. Flooring shall be rubber lined and furnished with a drain hole. A stainless steel, full width door with a chrome-plated latch shall be provided to contain the air bottles. A dielectric barrier shall be provided between the door hinge, hinge fasteners and the body sheet metal.</p>		

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	Bidder Complies	
	Yes	No
<p><u>AIR BOTTLE STORAGE (SINGLE)</u></p> <p>A quantity of two (2) air bottle compartments, 7.75" in diameter x 26.00" deep, shall be provided on the passenger side forward of the rear wheels and on the passenger side rearward of the rear wheels. A polished stainless steel 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 Dura-Surf friction reducing material shall be provided.</p> <p><u>AIR BOTTLE STORAGE INSERT</u></p> <p>A total of four (4) inserts shall be provided for the air bottle storage compartments.</p> <p>The inserts shall be "W" shaped and be formed from composite materials.</p> <p><u>AIR BOTTLE HOLDERS</u></p> <p>Two (2) brackets shall be provided for mounting air bottles. Each bracket shall be a Ziamatic, model KD-UN-6-30-2-SFPHS, and contain a collision restraint strap. It shall be mounted on tracks and used for adjusting the location of the bracket within the compartment. Install in R-1 on the left (driver's) side vertical divider between the side bulkhead and the divider.</p> <p>A stainless steel scuffplate shall be provided around each air bottle compartment opening. The scuffplates shall not be visible when the air bottle compartment door is closed.</p> <p><u>LADDER BRACKETS</u></p> <p>Brackets shall be provided to hold a total of two (2) ladder(s) installed on the on the left (driver's) side hatch compartments side of the recessed walkway. Each ladder shall be stored in a separate, stainless steel lower retaining trough. There shall be two (2) heavy duty nylon straps with hook and loop closure provided to hold the ladder(s) in place.</p> <p>The make, model and length of the ladder(s) shall be Duo Safety 24' 900A and 14' 775A.</p> <p><u>EXTENSION LADDER</u></p> <p>There shall be a 24', two-section, aluminum, Duo-Safety, Series 900-A extension ladder provided.</p> <p><u>ROOF LADDER</u></p> <p>There shall be a 14' aluminum, Duo-Safety, Series 775-A roof ladder provided.</p> <p>One (1) 10' aluminum, Series 585-A Duo-Safety folding ladder shall be installed in a U-shaped trough inside the ladder storage compartment.</p>		

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	Bidder Complies	
	Yes	No
<p><u>FOLDING LADDER STORAGE TROUGH</u></p> <p>A trough assembly shall be provided for storing a folding ladder. The trough shall be constructed of "C" shaped, 16 gauge, stainless steel slides. The slides shall be full length, and framed by .25" x 1.50" stainless steel bar.</p> <p>There shall be one (1) folding ladder storage trough(s) provided.</p> <p>One (1) 17' aluminum, Super Duty Type 1AA Little Giant folding ladder shall be provided. The stored dimensions shall be 55.00" high x 25.00" wide x 8.00" deep. The weight shall be 45 pounds. Capacity of 375 pounds.</p> <p>The ladder shall be located in D-4 between the vertacle partition and the rear bulkhead.</p> <p><u>FOLDING LADDER STORAGE TROUGH</u></p> <p>A trough assembly shall be provided for storing a combination ladder. The trough shall be constructed of "C" shaped, 16 gauge, stainless steel slides. The slides shall be full length, and framed by .25" x 1.50" stainless steel bar.</p> <p>There shall be one (1) combination ladder storage trough(s) provided.</p> <p><u>LADDER/EQUIPMENT STORAGE</u></p> <p>The apparatus shall be equipped with a ladder/long equipment storage rack constructed of three (3) storage troughs. The troughs shall be accessible from the rear compartment of the body. The storage trough(s) shall be arranged allowing equipment to be removed independently without the removal of adjacent equipment.</p> <p>The storage troughs shall be configured on the ceiling of R-1 above the slide-out tray. The storage trough(s) shall be mounted minimizing the forward compartment area required to accommodate the configuration.</p> <p>To prevent side compartment equipment from interfering with the removal of equipment stored in the trough(s), covers shall be provided over trough(s) which extend into the forward side compartments. The covers shall be finished to match the body compartment interior.</p> <p>The storage configuration shall be provided with no restraint to secure and prevent equipment from migrating to the rear of the apparatus while in motion.</p> <p><u>FMVSS LABEL IN CAB (ADDITIONAL)</u></p> <p>An additional FMVSS yellow label shall be provided and attached to the driver's side cab door stainless steel panel. The label shall be enlarged to an 8.50" x 11.00" size and installed as far to the inside as possible, next to the web strap of the door.</p>		

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	Bidder Complies	
	Yes	No
<p><u>REAR PULLOUT STEP</u></p> <p>A pull-out and down (camper style) step shall be installed below the tailboard step. The step surface when pulled out shall lower 5.00" and shall extend out from its nested position under the tailboard reducing the stepping distance from the ground to the top of the tailboard step.</p> <p>This step shall be 8.00" deep and designed to fit in the mounting location. The stepping surface shall be bright aluminum treadplate. Slotted side support pieces of the pull-out portion of step shall be made out of .25" steel plate.</p> <p><u>STEP, PULL-OUT/DROP DOWN</u></p> <p>Two (2) pull-out steps shall be provided. Each step shall be 26" wide x 8.00" deep and shall pull out and drop down to provide easy access.</p> <p>A pullout and down (camper style) step shall be installed below the body. The step surface, when pulled out from its nested position, shall be 9.00" below the body. The stepping surface shall be bright aluminum treadplate. Slotted side support pieces of the pullout portion of step to be made out of .25" steel plate.</p> <p>The step shall be located on the one (1) each side between D4/D5 and P4/P5 compartments.</p> <p>An 10.00" deep, full width bright aluminum treadplate step shall be provided at the rear of the body. The step shall be located above the rear roll-up door.</p> <p><u>TOW EYES</u></p> <p>Two (2) Chicago style tow eyes shall be mounted through the top of the bumper extension. The inner and outer edges of the tow eyes shall have a .25" radius.</p> <p>The tow eyes 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 eyes shall not be used for lifting of the apparatus.</p> <p>The tow eyes shall be painted red.</p> <p><u>ROPE ANCHORS</u></p> <p>There shall be three (3) pair of chrome plated steel eyebolts installed on the body to serve as rope anchor points. Each anchor shall have an inside diameter of 2.00" (51 mm) and shall be supported to provide a maximum of 9,000 lb (4,082 kg) no-yield condition with a straight line pull.</p> <p>Each pair of anchors shall be installed in the following locations:</p> <p>One (1) above R-1 and one (1) each side above D-1 and P-1.</p> <p>Stainless steel scuffplates shall be provided behind each anchor point.</p>		

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	Bidder Complies	
	Yes	No
<p><u>ELECTRICAL HARNESSING 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>FMVSS 302 - Flammability of interior materials for passenger cars, multipurpose passenger vehicles, trucks and buses</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>For increased reliability and harness integrity, harnesses shall be routed throughout the cab and chassis in a manner which allows the harnessing to be laid into its mounting location. Routing of harnessing which requires pulling of wires through tubes shall not be allowed.</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. All wiring installed between the cab and into doors shall be protected by an expandable rubber boot to protect the wiring. Exterior exposed wire connectors shall be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids. Electrical wiring and equipment shall be installed utilizing the following guidelines:</p>		

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	Bidder Complies	
	Yes	No
<ol style="list-style-type: none"> 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. 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. 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. 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. 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. 6. Any lights containing non-waterproof sockets in a weather-exposed area shall have corrosion preventative compound added to the socket terminal area. 7. All electrical terminals in exposed areas shall have DOW 1890 protective Coating applied completely over the metal portion of the terminal. 8. Rubber coated metal clamps shall be used to support wire harnessing and battery cables routed along the chassis frame rails. 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. 10. Cab and crew cab harnessing shall not be routed through enclosed metal tubing. Dedicated wire routing channels shall be used to protect harnessing therefore improving the overall integrity of the vehicle electrical system. The design of the cab shall allow for easy routing of additional wiring and easy access to existing wiring. 11. All braided wire harnesses shall have a permanent label attached for easy identification of the harness part number and fabrication date. 12. All chassis harnessing shall be connected to the cab through sealed bulkhead connectors inside the chassis frame rails (no exception). <p><u>BATTERY CABLE INSTALLATION</u></p> <p>All 12-volt battery cables and battery cable harnessing installed by the apparatus manufacturer shall conform to the following requirements:</p> <p>SAE J1127 - Battery Cable</p> <p>SAE J561 - Electrical terminals, eyelets and spade type</p>		

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	Bidder Complies	
	Yes	No
<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> <ol style="list-style-type: none"> 1. All battery cables and battery harnesses shall have a permanent label attached for easy identification of the harness part number and fabrication date. 2. Splices shall not be allowed on battery cables or battery cable harnesses. 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. 4. For ease of identification, all positive battery cable isolated studs throughout the cab and chassis shall be red in color. 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><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>CAB CLEARANCE/MARKER/ID LIGHTS</u></p> <p>There shall be five (5) Truck-Lite amber LED lights provided to indicate the presence and overall width of the vehicle in the following locations:</p> <ul style="list-style-type: none"> • Three (3) Truck-Lite, Model 35075Y, amber LED identification lights shall be installed in the center of the cab above the windshield. • Two (2) Truck-Lite, Model 10006Y kit, amber LED beehive clearance/marker lights shall be installed, one (1) on each outboard side of the cab roof, above the windshield. <p><u>REAR CLEARANCE/MARKER/ID LIGHTING</u></p> <p>There shall be three (3) Truck-Lite®, Model 35200R, LED lights used as identification lights located at the rear of the apparatus per the following:</p>		

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	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • 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 <p>There shall be two (2) Truck-Lite, Model 35200R, LED lights installed at the rear of the apparatus used as clearance lights located at the rear of the apparatus per the following:</p> <ul style="list-style-type: none"> • To indicate the overall width of the vehicle • One (1) each side of the vertical centerline • As near the top as practical • Red in color • To be visible from the rear • All at the same height <p>There shall be two (2) Truck-Lite, Model 35200R, LED lights installed on the side of the apparatus 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>FRONT CAB SIDE CLEARANCE/MARKER LIGHTS</u></p> <p>There shall be two (2) Truck-Lite®, Model 19036Y, amber LED lights installed to the outside of the chrome wrap around bezel, one (1) on each side of the cab.</p> <p>The lights shall activate as clearance/marker lights with the headlight switch and directional lights with the corresponding directional circuit.</p>		

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	Bidder Complies	
	Yes	No
<p><u>REAR FMVSS LIGHTING</u></p> <p>There shall be the following stop/tail and directional lighting provided at the rear of the truck:</p> <ul style="list-style-type: none"> • Two (2) Whelen®, Model 60BTT*, red LED stop/tail lights with color lenses • Two (2) Whelen, Model 60A00TAR, amber LED directional lights <p>The lights shall be mounted with a Whelen, Model 6EFLANGE, chrome flange.</p> <p>Two (2) Whelen Model 60C00VCR, LED backup lights with 6E or 64 flange kit shall be provided.</p> <p><u>LICENSE PLATE BRACKET</u></p> <p>One (1) license plate bracket constructed of stainless steel shall be provided at the rear of the apparatus.</p> <p>One (1) white LED light shall be provided to 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.</p> <p><u>MARKER LIGHTS</u></p> <p>There shall be one (1) pair of amber and red Britax, Model L427.203.L12, LED marker lights with rubber arm, located one (1) each side at the rear of the rescue body, the light base to be in-line with the rear bumper. 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.</p> <p>These lights shall be activated with the running lights of the vehicle and when the respective directional lights are activated.</p> <p><u>DEUTSCH CONNECTIONS</u></p> <p>All external 12V electrical light connections shall be installed with Deutsch connectors.</p> <p><u>DEUTSCH CONNECTIONS</u></p> <p>All the rear brake/tail, directional and back-up lights shall be installed with Deutsch weatherproof connectors.</p> <p><u>AUXILIARY SIDE MARKER LIGHTS</u></p> <p>A set of two (2) LED marker lights shall be installed on each side of the vehicle body one (1) each side of the fire body ahead of the rear wheels. All marker lights shall be actuated with the headlight switch.</p> <p><u>INTERMEDIATE LIGHT</u></p> <p>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.</p>		

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	Bidder Complies	
	Yes	No
<p>A stainless steel trim shall be included with this installation.</p> <p><u>CAB PERIMETER SCENE LIGHTS</u></p> <p>There shall be four (4) Amdor LumaBar H2O white LED strip lights provided, one (1) for each cab door and crew cab door.</p> <ul style="list-style-type: none"> Two (2) Amdor LumaBar H2O, Model AY-9500-020, 20.00" LED strip lights, one (1) for each cab door. Two (2) Amdor LumaBar H2O, Model AY-9500-012, 12.00" LED strip lights, one (1) for each crew cab door. <p>These lights shall be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body perimeter scene lights.</p> <p><u>BODY PERIMETER SCENE LIGHTS</u></p> <p>There shall be a total of two (2) Amdor LumaBar H2O, Model AY-9500-020, 20.00" LED weatherproof strip lights with brackets provided on the apparatus</p> <p>The lights shall be mounted in the following locations:</p> <p>Two (2) lights shall be provided under the rear step area, one (1) each side.</p> <p>The two (2) rear facing lights shall be activated per the following and shall not activate with the directional circuit:</p> <ul style="list-style-type: none"> When the parking brake is applied. With a switch located within reach of the driver. <p>Any additional side facing lights shall be activated per the following:</p> <ul style="list-style-type: none"> When the parking brake is applied. With a switch located within reach of the driver. When the corresponding directional circuit is activated. <p><u>ADDITIONAL PERIMETER LIGHTS</u></p> <p>There shall be four (4) lights Amdor, Model AY-9500-012 12.00" white LED perimeter light(s) provided two (2) on each side of the rescue body.</p> <p>These lights shall be activated the same as the body perimeter lights.</p> <p><u>STEP LIGHTS</u></p> <p>Two (2) white LED, step lights shall be provided. The step lights shall be provided at the rear body, one (1) each side of the tailboard.</p>		

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	Yes	No
<p>In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.</p> <p>The step lights shall be controlled by a switch installed at the rear of the unit in an easily accessible area.</p> <p>All other steps on the apparatus shall be illuminated per the current edition of NFPA 1901.</p> <p><u>ADDITIONAL STEP LIGHT</u></p> <p>Additional lighting shall be provided by white LED step lights. The step lights shall be installed one (1) each side in the walkway of the hatch compartments. These lights are to be added to the standard lights so that the lights are approximately 2.5 to 3.0 feet apart. The quantity of additional step lights shall be two (2) lights.</p> <p>In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.</p> <p>The additional step lights shall be activated by the same means as the standard step lights.</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(s) provided on the front visor, centered.</p> <p>The painted parts of this light assembly to be white.</p> <p>The light(s) 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. a switch located next to the circuit breaker panel. <p>These light(s) 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 PCP2, 12 volt LED combination spotlight and floodlight(s) installed in semi-recessed housing(s) Model PBA203 located one (1) on the left (driver's) side at the front of the rescue body.</p>		

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	Bidder Complies	
	Yes	No
<p>The painted parts of this light assembly to be white.</p> <p>The light(s) 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. • a switch located next to the circuit breaker panel. • no additional switch location. <p>These light(s) 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 PCP2, 12 volt LED combination spotlight and floodlight(s) installed in semi-recessed housing(s) Model PBA203 located one (1) on the right (officer's) side towards the front of the fire body.</p> <p>The painted parts of this light assembly to be white.</p> <p>The light(s) 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. • a switch located next to the circuit breaker panel. • no additional switch location. <p>These light(s) may be load managed when the parking brake is set</p> <p><u>REAR SCENE LIGHT(S)</u></p> <p>There shall be two (2) Weldon, Model 2020-1190-30, 50 watt rectangular, sealed beam scene light(s) provided at the rear of the apparatus, one (1) each side at the rear of the fire body underneath the rear turn signal cluster.</p> <p>The light(s) shall be controlled by a switch at the driver's side switch panel.</p> <p>The light(s) may be load managed when the parking brake is set.</p> <p><u>HAND HELD SPOTLIGHT</u></p> <p>There shall be four (4) Streamlight, Model Survivor 90503, LED flashlights with chargers and AC/DC chords provided and installed by the Cambridge Fire Department.</p> <p><u>HAND HELD SPOTLIGHT</u></p> <p>There shall be two (2) lights Streamlight, Model Survivor 90503, LED flashlights with chargers and AC/DC chords provided and installed by the Cambridge Fire Department.</p>		

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	Bidder Complies	
	Yes	No
The flashlights shall be connected battery direct and shall charge when the chassis batteries are charging.		

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	Bidder Complies	
	Yes	No
<p><u>AIR HORN SYSTEM</u></p> <p>Two (2) Grover air horns shall be provided and located in the front bumper, recessed on the right (officer's) side adjacent to each other. 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></p> <p>Two (2) lanyard rope pull controls shall be provided, one (1) within reach of the driver and one (1) within reach of the officer.</p> <p><u>ELECTRONIC SIREN</u></p> <p>A Federal, Model 690000, PA-300-012MSC, electronic siren shall be provided with noise cancelling microphone.</p> <p>This siren to be active when the battery switch is on and that emergency master switch is on.</p> <p>Electronic siren head shall be recessed in the driver side inside switch panel.</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></p> <p>There shall be one (1) speaker recessed in the front bumper. Each speaker shall be a Federal, model CP100-S, 100 watt, with chrome finish. Each speaker shall be connected to the siren amplifier.</p> <p>The speaker shall be mounted on top of the front bumper on the passenger's side.</p> <p>The speaker shall be set back 2.00" from standard mounting.</p> <p><u>AUXILIARY MECHANICAL SIREN</u></p> <p>A Federal Q2B® siren shall be furnished. A siren brake button shall be installed on the switch panel.</p> <p>The control solenoid shall be powered up after the emergency master switch is activated.</p> <p>The mechanical siren shall be mounted on the bumper deckplate, set back 2.00" from the front face of the bumper. It shall be mounted on the left side. The siren mounting shall include a reinforcement plate.</p>		

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	Bidder Complies	
	Yes	No
<p><u>MECHANICAL SIREN CONTROL</u></p> <p>The mechanical siren shall be actuated by a push button located on the officer's side instrument panel and by a foot switch on the driver's side.</p> <p><u>WEDGE STYLE FOOT SWITCH BRACKET</u></p> <p>There shall be one (1) wedge style bracket provided at the driver's side side on cab the floor. The bracket shall be large enough to hold one (1) foot switch. The bracket shall be angled approximately 30 degrees.</p> <p>A second siren brake switch shall be installed on the passenger side.</p> <p><u>CAB ROOF LIGHTBAR</u></p> <p>There shall be two (2) 28.25" Whelen, LED lightbars mounted on the cab roof,.</p> <p>Each lightbar shall include the following:</p> <ul style="list-style-type: none"> • One (1) forward facing red LED flashing light. • One (1) forward facing white LED flashing light. • One (1) side facing red LED flashing light. • Two (2) corner red LED flashing lights. <p>The color of the lenses shall be clear.</p> <p>There shall be a switch located in the cab on the switch panel to control the lightbars.</p> <p>The white LED flashing light shall be disabled when the parking brake is set.</p> <p><u>CAB FACE WARNING LIGHTS</u></p> <p>There shall be two (2) pairs of Whelen®, Model 60*00F*R, LED lights installed on the cab face, above the headlights, mounted in a common bezel.</p> <ul style="list-style-type: none"> • The color of the outer LED lights shall be red Super LED/red lens • The color of the inner LED lights shall be red Super LED/red lens <p>There shall be a switch located in the cab on the switch panel to control both sets of lights.</p> <p><u>SIDE ZONE LOWER LIGHTING</u></p> <p>There shall be six (6) Whelen®, Model 60*02F*R, flashing LED lights located at the following positions:</p> <ul style="list-style-type: none"> • Two (2) lights located, one (1) each side on the bumper extension <ul style="list-style-type: none"> ○ The color of these lights shall be red Super LED/red lens each side • Two (2) lights located, one (1) on each side crew cab extension 		

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	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • The color of these lights shall be red Super LED/rd lens each side • Two (2) lights located, one (1) each side above the rear wheel wells <ul style="list-style-type: none"> ○ The color of these lights shall be red Super LED/red lens each side <p>There shall be a switch located in the cab on the switch panel to control the lights.</p> <p>These lights shall be installed with three (3) pairs of flange kits.</p> <p><u>SIDE WARNING LIGHTS</u></p> <p>There shall be two (2) pairs of flush mounted Whelen, Model 90**5F*R flashing LED lights provided.</p> <p>The lights shall be located on one (1) at the front and one (1) at the rear of the fire body.</p> <p>The color of the lights shall be red Super LED/red lens .</p> <p>The lights shall be controlled by with the side warning switch.</p> <p>These lights shall be installed with a flange.</p> <p><u>REAR ZONE LOWER LIGHTING</u></p> <p>There shall be two (2) Whelen®, Model 60*02F*R, driver side blue Super LED/blue lens, passenger side red Super LED/red lens lights located at the rear of the apparatus.</p> <p>Each light shall be mounted in a housing.</p> <p>There shall be a switch located in the cab on the switch panel to control the lights.</p> <p><u>REAR AND SIDE UPPER ZONE WARNING LIGHTS</u></p> <p>There shall be four (4) Whelen, Model 90**5F*R LED flashing warning lights provided with Whelen, Model 90FLANGC chrome flanges at the rear and side of the apparatus.</p> <p>The side rear upper light on the driver's side to be red.</p> <p>The rear upper light on the driver's side to be blue.</p> <p>The rear upper light on the passenger's side to be red.</p> <p>The side rear upper light on the passenger's side to be red.</p> <p>These lights shall include a 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><u>REAR BODY WARNING LIGHTS</u></p> <p>There shall be one (1) pair of Whelen, Model 90**5F*R, flashing Super LED lights provided.</p>		

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	Bidder Complies	
	Yes	No
<p>The color of the lights shall be driver side blue Super LED/blue lens, passenger side red Super LED/red lens.</p> <p>These lights shall be located at the rear of the body above the taillights, and activated with with the rear upper warning switch</p> <p>These lights shall be installed with a flange.</p>		

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	Bidder Complies	
	Yes	No
<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> <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>		

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	Bidder Complies	
	Yes	No
<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> <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 		

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	Bidder Complies	
	Yes	No
<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> 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> <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</p>		

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	Bidder Complies	
	Yes	No
<p>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></p> <p>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> <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>ONAN PROTEC 25KW SINGLE PHASE GENERATOR W/ XRT PTO</u></p> <p>The apparatus shall be equipped with a complete electrical power system. The wiring and generator installation shall conform to the present National Electrical Code Standards of the National Fire Protection Association. The installation shall be designed for continuous operation without overheating and undue stress on components.</p> <p>The generator shall be a single phase, four (4)-wire, Onan 25kW driven by a transmission "power takeoff" attached to the side of the transmission.</p> <p>Generator performance shall meet the American National Standards Institute (ANSI) C84.1-1982 voltage requirement as utilized from the receptacle.</p> <p>Generator shall have a built in automatic voltage control.</p> <p>Generator shall have a NEMA MG21 rating.</p> <ul style="list-style-type: none"> - Continuous Duty Rating: 25,000 watts - Phase: Single - Nominal Cycles: 60 hertz 		

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	Bidder Complies	
	Yes	No
<p>- Nominal Amp Rating: 104 at 240-volts</p> <p>- Engine Speed at Engagement: Idle</p> <p>- Engine Speed Engaged: 1100/1400 rpm range</p> <p>- Generator RPM: 1800 rpm</p> <p>- Weight: 398 lbs.</p> <p>The output of the generator shall be controlled by an electronic governor. The governor shall be programmed so the generator's output is at 60 hertz.</p> <p>The main chassis transmission PTO shall power the generator. A stainless steel splash guard shall be installed to reduce the amount of road spray on this frame-mounted generator.</p> <p>The generator shall be operable in the stationary mode with a shift control located inside the cab with an indicator light to note engagement. For safety, the automatic high idle shall be activated through interlocks only after the chassis parking brake control is in the park position, the generator PTO transmission has made a complete shift and the truck transmission is in neutral.</p> <p>An electric/hydraulic valve shall supply hydraulic fluid to the clutch engagement unit provided on the chassis PTO drive.</p> <p>To properly monitor the generator performance and load demands during operation, the generator shall be equipped with a full instrument and control package. This panel shall be mounted adjacent to the load center. The following instruments shall be installed in the panel:</p> <ul style="list-style-type: none"> - One (1) Voltmeter - Two (2) Ammeters - One (1) Frequency Meter - One (1) Hour Meter - One (1) "Power On" Green Indicator Light - One (1) PTO Engagement Indicator Light - Two (2) Fuse Holders: With two (2) amp fuses for gauge protection <p>The meter and indicators shall be installed near eye level in the compartment. Instruments shall be flush mounted in an appropriate sized weatherproof electrical enclosure. All instruments used shall be accurate within +/- two (2) percent.</p>		

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	Bidder Complies	
	Yes	No
<p>The system shall be installed by highly qualified electrical technicians to assure the required level of safety and protection to the fire apparatus operators. The wiring, electrical fixtures and components shall be to the highest industry quality standards available on the domestic market. The equipment shall be the type designed for mobile installations subject to vibration, moisture and severe continuous usage.</p> <p>All electrical wiring from the load center shall be fine stranded copper S.O. Type with a 600 volt jacket. The wire shall be sized to the load and circuit breaker rating. The wire size shall be ten (10)-gauge on 30 amp circuits, 12-gauge on 20 amp circuits and 14-gauge on 15 amp circuits. The S.O. Cable shall be run in corner areas and extruded aluminum pathways built into the body for easy access. Any S.O. Cord not run in an enclosed race-way or cable tray shall have an additional abrasion resistant covering.</p> <p>The main load center shall have circuit breakers rated to load demand.</p> <p>Individual breakers shall be provided for all receptacles to isolate a tripped breaker from affecting any other online equipment.</p> <p>An output shaft used to couple a XRT hydraulic tool system to the generator shall be provided. The output shaft shall be operational whenever the generator is in use.</p> <p><u>GENERATOR LOCATION</u> The generator shall be mounted under the body between the frame rails.</p> <p><u>GENERATOR START</u> There shall be a switch provided on the cab instrument panel to engage the generator.</p> <p><u>CIRCUIT BREAKER PANEL</u> The circuit breaker panel shall be located on the front bulkhead of D-5. The circuit breaker panel shall be mounted at an approximate 45 degree angle facing the compartment door.</p> <p><u>SUB FEED CIRCUIT BREAKER BOX</u> A Cutler Hammer sub feed box shall be supplied with current limiting circuit breakers to protect the on board circuits when an auxiliary power source is used. The sub feed box shall distribute power to specific circuits in the vehicle.</p> <p>Location shall be adjacent to the main circuit breaker panel in D-4.</p> <p><u>AUTO TRANSFER SWITCH</u> 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>		

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	Bidder Complies	
	Yes	No
<p>The transfer switch shall power the same receptacles that are also powered by the shoreline in D-4 and one (1) each D-4, P-4, and in the EMS compartment.</p> <p><u>GENERATOR SPLASH GUARD</u> A stainless steel splash guard shall be installed to reduce the amount of road spray on a frame mounted PTO generator.</p> <p><u>120 VOLT LIGHTING</u> There shall be one (1) Whelen, Model PCP2AC, 120 volt LED combination spot/flood light(s) installed in a Whelen, Model PBA203, semi-recessed chrome housing(s) located one (1) on the left (driver's) side towards the rear of the rescue body .</p> <p>The painted parts of this light assembly to be white.</p> <p>The light(s) selected above shall be controlled by the AC circuit breaker as well as 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 • no additional switch location • a switch near the circuit breaker panel <p><u>120 VOLT LIGHTING</u> There shall be two (2) Whelen, Model PFP1AC, 120 volt LED floodlight(s) installed in a Whelen, Model PBA103 semi-recessed housing(s) located one (1) each side at the rear of the rescue body underneath the upper warning lights.</p> <p>The painted parts of this light assembly to be white.</p> <p>The light(s) selected above shall be controlled by the following:</p> <p>a switch at the driver's side switch panel.</p> <p>a switch at the passenger's side switch panel.</p> <p>no additional switch location.</p> <p>a switch near the circuit breaker panel.</p> <p><u>120 VOLT LIGHTING</u> There shall be one (1) Whelen, Model PCP2AC, 120 volt LED combination spot/flood light(s) installed in a Whelen, Model PBA203, semi-recessed chrome housing(s) located one (1) on the right (officer's) side towards the rear of the rescue body.</p> <p>The painted parts of this light assembly to be white.</p>		

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	Bidder Complies	
	Yes	No
<p>The light(s) selected above shall be controlled by the AC circuit breaker as well as 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 • no additional switch location • a switch near the circuit breaker panel <p><u>ELECTRIC CORD REEL</u></p> <p>Furnished with the 120 volt AC electrical system shall be a Hannay, series 1600, cord reel, Hannay part #P56AN250. 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 inches above the operators standing position.</p> <p>The reel shall rewind approximately one half slower than the standard reel.</p> <p>The exterior finish of the reel(s) shall be painted job color matching the body exterior.</p> <p>A captive roller assembly 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.</p> <p>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.</p> <p>A total of one (1) cord reel shall be provided in P-1 on the rear wall as high as possible towards the rear bulkhead.</p> <p>The cord reel should be configured with three (3) conductors.</p> <p><u>CORD</u></p> <p>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.</p> <p><u>PORTABLE JUNCTION BOX</u></p> <p>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.</p> <p>A Hubbell L5-20, 20 amp, 120 volt, twist lock connector body.</p> <p>A total of one (1) shall be provided.</p>		

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	Bidder Complies	
	Yes	No
<p><u>JUNCTION BOX HOLDER</u></p> <p>There shall be a stainless steel junction box holder installed adjacent to the cord reel. A total of one (1) shall be installed.</p> <p>The holder shall be shipped loose.</p> <p><u>POWER OUTLET STRIP</u></p> <p>There shall be one (1) Sentrex Model M6S, 15.5" long x 2.00" wide x 1.75" thick, surge protected power outlet strip provided in D-5 near the sub feed circuit breaker panel. Each strip shall include six (6) 120 volt, 15 amp 5-15 straight blade receptacles.</p> <p>The power outlet shall be powered from the shoreline inlet through a receptacle located adjacent to the strip.</p> <p><u>110 VOLT INTERIOR RECEPTACLE</u></p> <p>Receptacle shall be a NEMA 5-15, 120 volt, 15 amp, three (3) wire duplex household type connected to the shoreline located one (1) each side on the front bulkhead of D-4, P-4 as high as possible and in the EMS compartment opposite the 12 volt power point plug.</p> <p>There shall be three (3) receptacles provided.</p> <p><u>20 AMP RECEPTACLE</u></p> <p>Wired to the power supply shall be two (2) receptacles that are a 120 volt 20 amp three wire twist-lock type, Marine Grade NEMA L5-20 Hubbell Model 23CM10 with weather resisting cover located one (1) each side D-3 and P-3 on the front bulkhead approximately 3.0" from the compartment floor.</p> <p><u>120 VOLT EXTERIOR RECEPTACLE</u></p> <p>Receptacle shall be a NEMA 5-20, 120 volt, 20 amp, three (3) wire duplex household type with a weather resistant cover connector to the generator.</p> <p>There shall be one (1) receptacle provided, one (1) located at the front bulkhead of the hatch walkway.</p> <p><u>30 AMP, 240-VOLT RECEPTACLE</u></p> <p>Wired to the power supply shall be one (1) receptacle that are 240-volt, 30 amp, four (4)-wire twist-lock NEMA L14-30 type with a weather resisting cover located on the front bulkhead wall of D-5 adjacent to the circuit breaker panel on the upper section .</p> <p><u>50 AMP, 125/250-VOLT RECEPTACLE</u></p> <p>Wired to the power supply shall be one (1) receptacle. The receptacle(s) shall be Hubbell, Model HBL63CM69, 125/250-volt, 50 amp, three phase, three pole, four (4) wire grounding twist-lock. The receptacle(s) shall be located on the panel adjacent to the CB panel in the upper section .</p>		

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	Bidder Complies	
	Yes	No
<p>There shall be a Hubbell, Model HBL77CM74WO yellow, weather proof flip-up cover provided for each receptacle.</p> <p><u>TOOL AIR COMPRESSOR</u></p> <p>A compressor shall be provided for use as an air supply for air tools.</p> <p>The compressor shall be an Atlas-Copco Model LT-5-PP. The compressor shall be powered by 240 volts AC and shall deliver 16.2 CFM at 175 psi. The compressor shall have a direct drive with a cooling fan and shroud at the end of the compressor block to draw air efficiently over the cylinders.</p> <p>The compressor shall be mounted at the front of the walkway between the hatch compartments</p> <p>This unit shall have the following features:</p> <ul style="list-style-type: none"> • 5-HP Direct Drive Compressor • Coupling Guard • 1800 RPM Motor • TEFC Motor (Total Enclosed Fan Cooling) • Oil Sight Glass • Oil Drain Tube and Plug • Inlet Filter • Pressure Switch/Starter • Check valve/unloader valve (prevents starting under a loaded condition) • Regulated Pressure 0 to 175 psig • Maximum Operating Pressure of 215 psig <p>The dimensions of the compressor shall be 27.00" long x 21.00" wide x 19.90" high.</p> <p>A remote mount control box shall be provided with the compressor. The dimensions of the control box shall be 12.00" high x 12.00" wide x 6.00" deep. The control box shall be located in the left front compartment near the circuit breaker panel.</p> <p><u>Air Tank</u></p> <p>An air tank with 1454 cubic inch displacement shall be provided for storage of air from the tool air compressor. This tank shall be plumbed from the compressor. This tank shall be supplied with an automatic dump solenoid.</p> <p><u>AIR TANK MOUNTING</u></p> <p>The air tank shall be mounted inside an enclosure constructed of 0.125" (3 mm) aluminum treadplate. The enclosure shall be provided with a hinged cover constructed of the same material</p>		

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	Bidder Complies	
	Yes	No
<p>as the enclosure. The cover shall be provided with a lift and turn latch and a gas cylinder to hold it in the open position.</p> <p><u>COMPRESSOR COVER</u></p> <p>The compressor shall be totally enclosed with a cover constructed of .125" bright aluminum treadplate. The cover shall be louvered to provide adequate ventilation and have any necessary access doors for maintenance or operation of the compressor.</p> <p><u>TOOL AIR REGULATOR</u></p> <p>A tool air regulator shall be supplied with a gauge and shutoff valve. The regulator shall be hand adjustable from 0 to 175 psi. A gauge shall be on the regulated side.</p> <p>A total quantity of one (1) shall be supplied.</p> <p>Location shall be in compartment D-5 on the front bulkhead wall near the circuit breaker panel.</p> <p><u>AIR TANK, TOOL AIR</u></p> <p>A 30 gallon air tank shall be provided for storage of air from the tool air compressor. This tank shall be plumbed from the compressor.</p> <p>This tank shall be supplied with an automatic dump solenoid when power for the compressor is terminated.</p> <p>A total number of one (1) shall be provided and located in the roof recess next to the compressor..</p> <p><u>AIR REEL FOR TOOLS</u></p> <p>A reel shall be provided for air tool operation.</p> <p>The reel system shall be piped from the auxiliary on board air compressor. Plumbing to the reel shall be accomplished with as few air restrictions as possible. Each reel shall have a minimum of 150 feet of .38", inside dimension, Goodyear "Insta-Grip", heavy-duty, blue, #9273 hose installed on it.</p> <p>A Hannay brand, series 1600, hydraulic hose reel with a Hannay part #P56AN250 half speed motor shall be provided. 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 inches above the operators standing position.</p> <p>The reel shall rewind approximately one half slower than the standard reel.</p> <p>The exterior finish of the reel(s) shall be painted job color matching the body exterior.</p>		

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	Bidder Complies	
	Yes	No
<p>A captive roller assembly to be provided to aid in the payout and loading of the reel. A ball stop shall be provided on the end of the hose to prevent the hose end from being wound around the reel.</p> <p>A label shall be provided in a readily visible location adjacent to the reel. The label shall indicate whether the supply is for breathing or utility air, the operating pressure, total hose length and hose size (inside dimension).</p> <p>A total of one (1) reel shall be located in D-1 as high as possible towards the rear partition.</p> <p><u>HYDRAULIC TOOL PUMP</u></p> <p>A XRT Power Systems hydraulic tool pump shall be installed on the Onan Protec generator. The pump shall be direct coupled to an output shaft on the Onan generator and shall be operational anytime the generator is running.</p> <p>The pump shall have three (3) outlets, capable of operating up to three (3) tools simultaneously. The pump outlets shall be adjustable between 5,000 and 10,500 psi. Each outlet shall be set and controlled by a remote valve. The valves shall control the flow to each tool outlet or reel location. The valves shall be located in compartment P-1 underneath each reel.</p> <p>A three (3) gallon fluid supply tank with sight gauge shall be provided. The tank shall be mounted above the pump providing a gravity fed oil supply to the system. The temperature gauge on the tank shall be in sight of the operator when mounted.</p> <p>The tool operating pressure is 5,000 PSI psi.</p> <p><u>HYDRAULIC REEL WITH 100' OF HOSE</u></p> <p>A hydraulic hose reel with 100' of low pressure braided hydraulic hose shall be provided. The reel shall have a polished stainless steel and chrome finish.</p> <p>The reel shall be operated by a 12 volt electric motor controlled by a rewind switch. The motor shall be protected by a circuit breaker and the rewind circuit shall be protected by a fuse. The switch shall be guarded to prevent accidental operation and installed at a height not to exceed 72.00" above the operator's standing position. The switch shall be labeled for its intended use.</p> <p>A captive roller assembly to be provided to aid in the payout and loading of the reel. A ball stop assembly shall be installed on the reel to assist with loading and unloading the hose from the reel.</p> <p>Installed on the reel shall be a 100' section of Hurst low pressure dual hydraulic hose.</p> <p>The color of the hose(s) shall be:</p>		

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	Bidder Complies	
	Yes	No
Hose One (1): blue/blue		
Hose Two (2): orange/orange		
Hose Three (3): no hose required		
Hose Four (4): no hose required		
Hose Five (5): no hose required		
Hose Six (6): no hose required		
A label shall be provided in a readily visible location adjacent to the reel. The label shall indicate maximum flow pressure and total hose length.		
A total of two (2) reels shall be installed in P-1 on the rear wall as high as possible towards the front bulkhead.		
<u>DRIP PAN, HYDRAULIC REEL</u>		
An adjustable drip pan with 1.00" lips shall be provided below the hydraulic reel. This pan shall be unpainted and 100% welded to prevent the hydraulic oil from damaging the compartment.		
Located in compartment D-1 and P-1 underneath the hydraulic reels.		
A total of two (2) shall be provided.		
<u>HYDRAULIC FLUID</u>		
Eighteen (18) gallon of Monsanto phosphate ester hydraulic fluid shall be provided. Fluid shall be Fire resistant, non-corrosive, electrically non-conductive fluid, is rust preventative and maintains viscosity over a wide range of temperatures.		
A total of 18 shall be provided.		
<u>HYDRAULIC REMOTE DUMP VALVE</u>		
An XRT Power Systems hydraulic dump valve shall be provided to allow quick tool change in a remote location.		
The valve(s) shall be located on the front bumper between the winch cover and the electronic siren.		
Appropriate labels shall be provided on the control.		
A total of one (1) shall be provided.		

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	Bidder Complies	
	Yes	No
<p><u>HYDRAULIC HOSE</u></p> <p>A high pressure aramid non-conductive hose shall be plumbed from the hydraulic power unit to the reel/outlet. The hose shall meet SAE J343 for less than 50 microamps of leakage under 75,000 volts per foot, and shall also meet or exceed SAE 100R8 specifications. The hose construction shall consist of a polymeric core tube, aramid braid reinforcement, and abrasion-resistant urethane cover. All layers shall be permanently bonded. Minimum burst pressure shall be 20,000 psi (1,380 bar) with a 4:1 operational safety factor. Appropriate couplings shall be installed for quick connection of the power unit.</p> <p>A total of one (1) section(s) of hose shall be provided for the reel(s)/outlet(s) located at the front bumper XRT Valve.</p> <p>The color of the hose(s) shall be:</p> <p>hose 1 black/orange</p> <p>hose 2 n/a</p> <p>hose 3 no hose required</p> <p>hose 4 no hose required</p> <p>hose 5 no hose required</p> <p>hose 6 no hose required</p> <p>The brand, model and age of tool being used with this hose shall be Hurst @ 5,000 PSI.</p> <p><u>HYDRAULIC HOSE FROM POWER SUPPLY TO VALVE</u></p> <p>A section of high pressure braided hose shall be provided.</p> <p>The hose shall be a Parker Hannifin high pressure, non-conductive hose that meets SAE J343 for less than 50 microamps leakage under 75,000 volts per foot. The hose shall be lightweight, kink resistant, permanently bonded and shall exceed SAE 100R8 specifications.</p> <p>The hose shall be constructed of a polymeric tube core with abrasion resistant urethane cover. All layers shall be permanently bonded with a 20,000 psi minimum burst pressure with a 4:1 operational safety factor. The hose shall have 0.25" inside diameter on the outlet side and 0.37" inside diameter on the return side after the control valve. The return side shall have low pressure hose with a 4:1 operational safety factor.</p> <p>A total of three (3) section(s) of hose shall be provided.</p> <p>The colors of the hose shall be:</p>		

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	Bidder Complies	
	Yes	No
hose 1 black/black		
hose 2 orange/orange		
hose 3 green/green		
hose 4 no hose required		
hose 5 no hose required		
Hose 6 no hose required		

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	Bidder Complies	
	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"> - Four (4) bags 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 10.5.1 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"> - 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 two (2), 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. - 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 at the shoulders, two at the sides, and one at the front. - Five (5) fluorescent orange traffic cones not less than 28" (711 mm) in height, each equipped with a 6" (152 mm) retro-reflective white band no more than 4" (152 mm) from the top of the cone, and an additional 4" (102 mm) retro-reflective white band 2" (51 mm) below the 6" (152 mm) band. - Five (5) illuminated warning devices such as highway flares, unless the five fluorescent orange traffic cones have illuminating capabilities. - One automatic external defibrillator (AED). <p><u>DRY CHEMICAL EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u></p> <p>NFPA 1901, 2009 edition, section 10.5.2 requires one (1) approved dry chemical portable fire extinguisher with a minimum 80-B:C rating mounted in a bracket fastened to the apparatus.</p> <p>The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.</p>		

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	Bidder Complies	
	Yes	No
<p><u>WATER EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u></p> <p>NFPA 1901, 2009 edition, section 10.5.2 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>		

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	Bidder Complies	
	Yes	No
<p><u>PAINT</u></p> <p>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. 5. <u>Sealer Primer Coat</u> - A two (2) component sealer primer coat shall be applied over the sanded primer. 6. <u>Topcoat Paint</u> - Urethane base coat shall be applied to opacity for correct color matching. 7. <u>Clearcoat</u> - 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. <p>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 can not be finish painted after assembly shall be finish painted before assembly.</p> <p>The cab and body will be two-tone, with the upper section painted white along with a shield design on the cab face and lower section of the cab and body painted red so as to match the current Cambridge Apparatus.</p> <p><u>PAINT - ENVIRONMENTAL IMPACT</u></p> <p>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:</p>		

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	Bidder Complies	
	Yes	No
<p>- Topcoats and primers must be chrome and lead free.</p> <p>- Metal treatment chemicals must be chrome free. The wastewater generated in the metal treatment process must be treated on-site to remove any other heavy metals.</p> <p>- Particulate emission collection from sanding operations must have a 99.99% efficiency factor.</p> <p>- Particulate emissions from painting operations must be collected by a dry filter or water wash process. If the dry filter means is used, it must have an efficiency rating of 98.00%. Water wash systems must be 99.97% efficient.</p> <p>- Water from water wash booths must be reused. Solids shall be removed mechanically on a continual basis to keep the water clean.</p> <p>- 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.</p> <p>- Empty metal paint containers must be cleaned, crushed and recycled to recover the metal.</p> <p>- Solvents used in cleanup operations must 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.</p> <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>GALVANIZED CHASSIS FRAME ASSEMBLY</u></p> <p>The chassis frame assembly shall be hot dip galvanized 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 hot dip galvanized are:</p> <ul style="list-style-type: none"> • Frame rails • Frame liners • Cross members • Front frame extension • Battery boxes <p>All galvanized components are inspected for compliance with ASTM specifications.</p>		

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	Bidder Complies	
	Yes	No
<p>All components that are not galvanized shall be painted red .</p> <p><u>PAINT, FRONT WHEELS</u> All wheel surfaces, inside and outside, shall be provided with urethane base coat #196 red and two (2) coats of clearcoat.</p> <p><u>PAINT, REAR WHEELS</u> All wheel surfaces, inside and outside, shall be provided with 193 Red.</p> <p><u>COMPARTMENT INTERIOR PAINT</u> The interior of compartmentation shall be painted with a gray spatter type paint.</p> <p><u>REFLECTIVE BAND</u> A 10.00" white reflective band shall be provided across the front of the vehicle and along the sides of the body.</p> <p>The reflective band provided on the cab face shall be at the headlight level.</p> <p><u>CHEVRON STRIPING, REAR</u> There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus. Covered surfaces shall include the exterior rear wall. Rear compartment doors, entry doors, or walkway areas shall not be covered.</p> <p>The colors shall be red and fluorescent yellow green 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>JOG(S) IN REFLECTIVE BAND</u> The reflective band located on each side of the apparatus body shall contain one (1) jog(s) and shall be angled at approximately a 45 degrees when installed.</p> <p><u>OUTLINE, REFLECTIVE STRIPE</u> A black vinyl outline shall be provided for each chevron stripe at the rear of the truck.</p> <p><u>OUTLINE, REFLECTIVE STRIPE</u> A black outline shall be applied on the top and the bottom of the reflective band. There shall be two (2) set of outline stripes required.</p> <p><u>OUTLINE, REFLECTIVE STRIPE</u> A black vinyl outline shall be provided for each chevron stripe on the interior cab and crew cab door pans.</p>		

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	Bidder Complies	
	Yes	No
<p><u>CHEVRON, INVERTED "V" STRIPING ON CAB AND CREW CAB DOORS</u></p> <p>There shall be alternating chevron striping located on the inside of each cab and crew cab door.</p> <p>The striping shall consist of the following colors:</p> <p>The first color shall be fluorescent yellow green diamond grade</p> <p>The second color shall be red diamond grade</p> <p>The size of the striping shall be 4.00".</p> <p><u>CAB STRIPE</u></p> <p>There shall be a genuine gold leaf stripe provided on both sides of the cab in place of the chrome molding and on the cab face with shield.</p> <p><u>LETTERING</u></p> <p>The lettering shall be totally encapsulated between two (2) layers of clear vinyl.</p> <p><u>LETTERING</u></p> <p>One (1) to twenty (20) genuine gold leaf lettering, 3.00" high, with highlight and shade shall be provided.</p> <p><u>LETTERING</u></p> <p>One (1) to twenty (20) reflective lettering, 12.00" high, with outline and shade shall be provided.</p> <p><u>LETTERING</u></p> <p>There shall be reflective lettering, 16.00" high, with outline and shade provided. There shall be three (3) letters provided.</p> <p><u>LETTERING</u></p> <p>There shall be genuine gold leaf lettering, 12.00" high, with outline and shade provided. There shall be 14 letters provided.</p> <p><u>LETTERING</u></p> <p>There shall be seven (7) letters 4.00" high gold leaf letters, with highlight and shade, provided and installed on the cab face. Each letter shall be genuine 22 karat gold leaf.</p> <p><u>LETTERING</u></p> <p>There shall be one (1) to twenty (20) 4.00" high gold leaf letters, with shade and highlight, provided and installed. Each letter shall be genuine 22 karat gold leaf.</p> <p><u>LETTERING</u></p> <p>There shall be reflective lettering, 12.00" high, with outline and shade provided. There shall be eight (8) letters provided.</p>		

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<p><u>LETTERING</u> There shall be genuine gold leaf lettering, 3.00" high, with highlight and shade provided. There shall be ten (10) letters provided.</p> <p><u>LETTERING</u> Twenty-one (21) to forty (40) genuine gold leaf lettering, 5.00" high, with outline and shade shall be provided.</p> <p><u>LETTERING</u> One (1) to twenty (20) genuine gold leaf lettering, 8.00" high, with outline and shade shall be provided.</p> <p><u>LETTERING</u> There shall be genuine gold leaf lettering, 5.00" high, with highlight and shade provided. There shall be 12 letters provided.</p> <p><u>GOLD LEAF LETTERING</u> There shall be one (1) to twenty (20) genuine gold leaf letters, 6.00" high, provided. Each letter shall be genuine 22 karat gold leaf totally encapsulated between two (2) layers of clear vinyl, and shall include highlight and shade. Install on each front cab door.</p> <p><u>PAINTED PLATE(S) FOR LETTERING</u> There shall be four (4) painted aluminum plate(s) provided for department lettering. They shall be mounted one on the front bumper tray cover painted red and 3 on the rear stair plates and shall be front bumper tray cover 6" x 40" long, 1 bottom rear plate 8" x 21", 2 rear middle and top plates 7" x 27" long. in size.</p> <p><u>DECAL INSTALLATION</u> There shall be one (1) pair of decals furnished by the fire department and applied by the apparatus manufacturer.</p> <p><u>E-COAT - FRONT AXLE</u> The following front axle components shall be treated with an epoxy E-coat to provide resistance to corrosion and chemicals: Front axle weldments (side plates and side plate interconnecting structure members) Torsion bar anchor weldments .</p>		

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<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> <p>Inside surfaces of the pump heat enclosure, (when installed).</p>		

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	Bidder Complies	
	Yes	No
<p><u>FOAM PUMPER WARRANTIES</u> The warranty on the apparatus shall begin upon transfer of title, certification of origin to the City.</p> <p><u>ONE (1) YEAR MATERIAL AND WORKMANSHIP</u> Each new piece of apparatus shall be provided with a minimum one (1) year basic apparatus material and workmanship limited warranty. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p>The Cambridge Fire Department will perform warranty repairs at warranty rates with prior approval from the manufacturer.</p> <p><u>FIFTY (50) YEAR STRUCTURAL INTEGRITY</u> The chassis frame shall be provided with a fifty (50) year material and workmanship limited warranty. The warranty shall cover the chassis frame as being free from defects in material and workmanship that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>FRONT AXLE TWO (2) YEAR MATERIAL AND WORKMANSHIP WARRANTY</u> A Meritor™ Axle two (2) year limited warranty shall be provided.</p> <p><u>STEERING GEAR WARRANTY</u> A TRW one (1) year limited steering gear warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.</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>ENGINE WARRANTY</u> A Cummins 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>TRANSMISSION WARRANTY</u> 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>		

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	Bidder Complies	
	Yes	No
<p><u>TEN (10) YEAR STRUCTURAL INTEGRITY</u></p> <p>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 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> <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>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>ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY</u></p> <p>An AMDOR roll-up door limited warranty shall be provided. The roll-up door shall be warranted against manufacturing defects for a period of ten (10) years. A five (5) year limited warranty shall be provided on painted roll up doors.</p> <p>A copy of the warranty certificate shall be submitted with the bid package.</p> <p><u>SIX (6) YEAR MATERIAL AND WORKMANSHIP</u></p> <p>The pump and its components shall be provided with a six (6) year material and workmanship limited warranty. The manufacturer's warranty shall provide that the pump and its components shall be free from 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>		

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	Bidder Complies	
	Yes	No
<p><u>TEN (10) YEAR PUMP PLUMBING WARRANTY</u></p> <p>The stainless steel plumbing components and ancillary brass fittings used in the construction of the water/foam plumbing system shall be warranted for a period of ten (10) years or 100,000 miles. This covers structural failures caused by defective design or workmanship, or perforation caused by corrosion, provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original purchaser for a period of ten years from the date of delivery.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>FOAM SYSTEM WARRANTY</u></p> <p>A one (1) year material and workmanship limited warranty shall be provided on the Husky 12 foam system. A five (5) year material and workmanship limited warranty shall be provided on the foam system control head.</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 NON PRO-RATED</u></p> <p>Each new piece of apparatus shall be provided with a ten (10) year paint and corrosion limited warranty on the apparatus cab. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.</p> <p>A copy of the warranty certificate shall be submitted with the bid package (no exception).</p> <p><u>TWELVE (12) YEAR PAINT AND CORROSION NON PRO-RATED</u></p> <p>Each new piece of apparatus shall be provided with a twelve (12) 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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	Bidder Complies	
	Yes	No
<p><u>FOAM PUMPER CERTIFICATIONS</u> The certifications listed below shall be furnished with the bid.</p> <p><u>VEHICLE STABILITY CERTIFICATION</u> 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> 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> 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> The fire apparatus manufacturer shall provide a cab integrity certification with this proposal. The certification shall state that a specimen representing the substantial structural configuration of the cab has been tested and certified by an independent third party test facility. Testing events shall be documented with photographs, real-time and high-speed video, vehicle accelerometers, cart accelerometers, and a laser speed trap. The fire apparatus manufacturer shall provide a state licensed professional engineer to witness and certify all testing events. Testing shall meet or exceed the requirements below:</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 22,500 lb. This value meets the ECE 29 criteria, and is equivalent to the front axle rating up to a maximum of ten (10) metric tons.</p> <ul style="list-style-type: none"> - Side Impact <p>The same cab shall be subjected to dynamic preload where a 13,275-lb moving barrier is slammed into the side of the cab at 5.50 mph, striking with an impact of 13,000 ft-lb of force.</p>		

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	Bidder Complies	
	Yes	No
<p>This test is part of the SAE J2422 test procedure and more closely represents the forces a cab shall see in a rollover incident.</p> <p>- Frontal Impact</p> <p>The same cab shall withstand a frontal impact of 32,600 ft-lb of force using a moving barrier in accordance with SAE J2420.</p> <p>- Additional Frontal Impact</p> <p>The same cab shall withstand a frontal impact of 65,200 ft-lb of force using a moving barrier. (Twice the force required by SAE J2420)</p> <p>The same cab shall withstand all tests without any measurable intrusion into the survival space of the occupant area.</p> <p>There shall be no exception to any portion of the cab integrity certification. Nonconformance shall lead to immediate rejection of bid.</p> <p><u>WINDSHIELD WIPER DURABILITY CERTIFICATION</u></p> <p>Visibility during inclement weather is essential to safe apparatus performance. Windshield wipers shall survive a 3 million cycle durability test in accordance with section 6.2 of SAE J198 <i>Windshield Wiper Systems - Trucks, Buses and Multipurpose Vehicles</i>. The bidder shall certify that the wiper system design has been tested and that the wiper system has met these criteria.</p> <p><u>AMP DRAW REPORT</u></p> <p>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.</p> <p>The manufacturer of the apparatus shall provide the following:</p> <ul style="list-style-type: none"> • Documentation of the electrical system performance tests. • A written load analysis, which shall include the following: <ul style="list-style-type: none"> ○ The nameplate rating of the alternator. ○ The alternator rating under the conditions specified per: <ul style="list-style-type: none"> ▪ Applicable NFPA 1901 or 1906 (Current Edition). ○ The minimum continuous load of each component that is specified per: <ul style="list-style-type: none"> ▪ Applicable NFPA 1901 or 1906 (Current Edition). ○ Additional loads that, when added to the minimum continuous load, determine the total connected load. ○ Each individual intermittent load. <p>All of the above listed items shall be provided by the bidder per the applicable NFPA 1901 or 1906 (Current Edition).</p>		

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	Bidder Complies	
	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 eliminating any split responsibility. The chassis shall be designed and manufactured for heavy-duty service, with adequate strength, capacity for the intended load to be sustained, and the type of service required.</p> <p><u>MAXIMUM OVERALL HEIGHT</u> The maximum overall height of the apparatus shall be 10' 2".</p> <p><u>MAXIMUM OVERALL LENGTH</u> The maximum overall length of the apparatus shall be 32 feet.</p> <p><u>WHEELBASE</u> The wheelbase of the vehicle shall be no greater than 180 inches.</p> <p><u>GVW RATING</u> The gross vehicle weight rating shall be a minimum of 49,000 pounds.</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. The side rails shall be heat-treated steel measuring 10.13" x 3.06" x .31".</p> <p>Each rail shall have a section modulus of 13.48 cubic inches, yield strength of 120,000 psi, and a resisting bending moment (rbm) of 1,617,600 inch-pounds.</p> <p><u>FRAME REINFORCEMENT</u> In addition to the chassis frame rails, an inverted "L" type outside frame reinforcement shall be provided. The frame reinforcement shall start 19.00" to the rear of the front axle centerline and shall extend back to the rear spring shackles. The frame reinforcement shall be heat-treated steel measuring 9.50" x 3.31" x .25". Total rbm at the wheelbase center shall be 2,140,613 pounds per rail.</p> <p><u>FRONT AXLE</u> The front axle shall be a reverse "I" beam type with inclined king pins. It shall be a Meritor™ axle, Model FL-941, with a rated capacity of 18,000 lb.</p> <p>A viewing window shall be provided on each side of the axle for checking the oil level.</p> <p><u>FRONT SUSPENSION</u> Front springs shall be semi-elliptical, 4.00" x 54.00", seven (7)-leaf, constant rate type with a ground rating of 18,000 lb.</p>		

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<p>Kaiser spring pins shall be provided, with double "figure-eight" grease grooves and a layer of electrolysis nickel plating, 1.0 mil thick around the entire pin. The bushing that holds the spring pin in place shall also have a grease groove.</p> <p><u>SHOCK ABSORBERS</u> Heavy-duty telescoping shock absorbers shall be provided on the front axle.</p> <p><u>FRONT OIL SEALS</u> Oil seals with viewing window shall be provided on the front axle.</p> <p><u>FRONT TIRES</u> Front tires shall be Goodyear 315/80R22.50 radials, 20 ply G291 tread, rated for 18,180 lb. maximum axle load and 68 mph maximum speed.</p> <p>The tires shall be mounted on Accuride® 22.50" x 9.00" steel disc type wheels with a ten (10) stud, 11.25" bolt circle.</p> <p><u>TURNING RADIUS REPORT</u> Supplied with the bid shall be a turning radius analysis of the vehicle being proposed. This analysis shall provide the inside turning radius, the outside turning radius, the curb to curb turning radius, and the wall to wall turning radius.</p> <p><u>REAR AXLE</u> The rear axle shall be a 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 suspension shall be Standens, semi-elliptical, 3.00" wide x 53.00" long, 12-leaf pack with a ground rating of 31,000 lbs. The spring hangers shall be castings.</p> <p>The two (2) top leaves shall wrap the forward spring hanger pin, and the rear of the spring shall be a slipper style end that shall ride in a rear slipper hanger. To reduce bending stress due to acceleration and braking, the front eye shall be a berlin eye that shall place the front spring pin in the horizontal plane within the main leaf.</p> <p>A steel encased rubber bushing shall be used in the spring eye. The steel encased rubber bushing shall be maintenance free and require no lubrication.</p> <p><u>REAR OIL SEALS</u> Oil seals shall be provided on the rear axle.</p>		

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	Bidder Complies	
	Yes	No
<p><u>REAR TIRES</u> Rear tires shall be four (4) Goodyear 315/80R22.50 radials, 18 ply "all season" Regional RHD II HCT tread, rated for 31,620 lb. maximum axle load and 75 mph maximum speed.</p> <p>The tires shall be mounted on Accuride® 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 VECSAFE LED tire alert pressure management system provided that shall monitor each tire's pressure. A chrome plated brass 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 20 and 120 psi. The sensor shall activate an integral battery operated LED when the pressure of that tire drops 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 blinking.</p> <p><u>FRONT HUB COVERS</u> Stainless steel hub covers shall be provided on the front axle. An oil level viewing window shall be provided.</p> <p><u>HUB COVERS (REAR)</u> Stainless steel baby moon covers shall be provided over the rear axle hubs.</p> <p><u>AUTOMATIC TIRE CHAINS</u> One (1) pair of ONSPOT automatic tire chains shall be provided at the rear. System shall be electric over air operated with switch on cab instrument panel. System to be operable at speeds up to 35 mph.</p> <p><u>MUD FLAPS</u> Mud flaps shall be installed behind the front and rear wheels of the apparatus.</p> <p><u>MUD FLAPS</u> Mud flaps shall be installed ahead of the rear wheels on the apparatus.</p>		

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	Bidder Complies	
	Yes	No
<p><u>SPARE TIRE</u> A 315/80R22.50, 20 ply spare tire to match the vehicle's front tires shall be provided, mounted on a steel disc wheel. All wheel surfaces shall be provided with powder coat paint #90 red.</p> <p><u>SPARE TIRE</u> A spare tire, 12R22.5, 16 ply, to match the vehicle's rear tires shall be provided and mounted on a steel disc wheel. All wheel surfaces shall be provided with 193.</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 on the left (driver's) side one (1) ahead of the rear wheels and one (1) to the rear of the wheels.</p> <p><u>ANTI-LOCK BRAKE SYSTEM</u> The vehicle shall be equipped with a Meritor WABCO 4S4M, anti-lock braking system. The ABS shall provide a 4-channel anti-lock braking control on both the front and rear wheels. A digitally controlled system that utilizes microprocessor technology shall control the anti-lock braking system. Each wheel shall be monitored by the system. When any particular wheel begins to lockup, a signal shall be sent to the control unit. This control unit shall then reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.</p> <p><u>BRAKES</u> The service brake system shall be full air type by Meritor™.</p> <p>Front brakes shall be EX225 Disc Plus, disc type with automatic pad wear adjustment and 17.00" ventilated rotors 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>BRAKE SYSTEM AIR COMPRESSOR</u> The air compressor shall be a Cummins/WABCO with 18.7 cubic feet per minute output.</p> <p><u>BRAKE SYSTEM</u> The brake system shall include:</p>		

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	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • Bendix brake treadle valve with vinyl covered foot surface • Heated automatic moisture ejector on air dryer • Total air system minimum capacity of 4,272 cubic inches • Two (2) air pressure gauges with a red warning light and an audible alarm, that activates when air pressure falls below 60 psi • Spring set parking brake system • Parking brake operated by a push-pull style control valve • A parking "brake on" indicator light on instrument panel • Park brake relay/inversion and anti-compounding valve, in conjunction with a double check valve system, shall be provided with an automatic spring brake application at 40 psi • A pressure protection valve shall be provided to prevent all air operated accessories from drawing air from the air system when the system pressure drops below 80 psi (550 kPa). <p>The air tank shall be primed and painted to meet a minimum 750 hour salt spray test.</p> <p>To reduce the effects of corrosion, the air tank shall be mounted with stainless steel brackets (no exception).</p> <p><u>BRAKE SYSTEM AIR DRYER</u></p> <p>The air dryer shall be WABCO System Saver 1200 with spin-on coalescing filter cartridge and 100 watt heater.</p> <p><u>BRAKE LINES</u></p> <p>Color-coded nylon brake lines shall be provided. The lines shall be wrapped in a heat protective loom where necessary in the chassis.</p> <p><u>AIR INLET</u></p> <p>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 in the driver side lower step well of cab. A check valve shall be provided to prevent reverse flow of air. The inlet shall discharge into the "wet" tank of the brake system. A mating female coupling shall also be provided with the loose equipment.</p> <p><u>AIR OUTLET</u></p> <p>One (1) air outlet shall be installed with a female coupling and shut off valve, located on the driver side pump panel. This system shall tie into the "wet" tank of the brake system and include an 85-psi pressure protection valve in the outlet line to prevent the brake system from losing all air.</p> <p>Female coupling and male fitting shall be .25" thread.</p>		

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	Yes	No
<p>A mating male fitting shall be provided with the loose equipment.</p> <p><u>COVER, OVER PARKING BRAKE KNOB</u></p> <p>There shall be a stainless steel hinged cover provided over the on the dash extension in front of the (officer's) seat parking brake knob to prevent accidental activation of the brake.</p> <p>The cover shall be labeled "Emergency Parking Brake".</p> <p><u>PARK BRAKE CONTROL (ADDITIONAL)</u></p> <p>A second park brake control valve shall be installed on the officer side of the instrument panel. This valve shall only activate the brakes if manually pulled out; low air pressure shall not activate this valve.</p> <p><u>ENGINE</u></p> <p>The chassis shall be powered by an electronically controlled engine as described below:</p> <p>Make:Cummins</p> <p>Model:ISL9</p> <p>Power:400 hp at 2100 rpm</p> <p>Torque:1250 lb-ft at 1400 rpm</p> <p>Governed Speed:2200 rpm</p> <p>Emissions Level:EPA 2013</p> <p>Fuel:Diesel</p> <p>Cylinders:Six (6)</p> <p>Displacement:543 cubic inches (8.9L)</p> <p>Starter:Delco 39MT</p> <p>Fuel Filters:Spin-on style primary filter with water separator & water-in-fuel sensor. Secondary spin-on style filter.</p> <p>Coolant Filter:Spin-on 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</p>		

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	Yes	No
<p>and aftertreatment. The system shall illuminate a malfunction indicator light on the dash console if a problem is detected.</p> <p><u>REPTO DRIVE</u></p> <p>A rear engine power take off shall be provided to drive the water pump. A vibration dampener shall be provided between the REPTO and water pump. Transmission PTO's used to drive the water pump shall not be allowed due to their lower torque ratings. The rear engine power take off shall be the same as used extensively throughout the construction industry. Rear engine PTO's allow for continuous 240 hp and 480 lb-ft torque ratings needed for large pump applications. The rear engine power take off shall have the same warranty as the engine provided by the engine manufacturer.</p> <p><u>HIGH IDLE</u></p> <p>A high idle switch shall be provided, inside the cab, on the instrument panel, that shall automatically maintain a preset engine rpm. A switch shall be installed, at the cab instrument panel, for activation/deactivation.</p> <p>The high idle shall be operational only when the parking brake is on and the truck transmission is in neutral. A green indicator light shall be provided, adjacent to the switch. The light shall illuminate when the above conditions are met. The light shall be labeled "OK to Engage High Idle."</p> <p><u>ENGINE BRAKE</u></p> <p>A Jacobs® engine brake is to be installed with the controls located on the instrument panel within easy reach of the driver.</p> <p>The driver shall be able to turn the engine brake system on/off and have a high, medium and low setting.</p> <p>The engine brake shall activate when the system is on and the throttle is released.</p> <p>The high setting of the brake application shall activate and work simultaneously with the variable geometry turbo (VGT) provided on the engine.</p> <p>The engine brake shall be installed in such a manner that when the engine brake is slowing the vehicle the brake lights are activated.</p> <p>The ABS system shall automatically disengage the auxiliary braking device, when required.</p> <p><u>CLUTCH FAN</u></p> <p>A Horton fan clutch shall be provided. The fan clutch shall be automatic when the pump transmission is in "Road" position, and constantly engaged when in "Pump" position.</p>		

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<p><u>COVER, EMERGENCY SHUTDOWN</u></p> <p>There shall be a stainless steel hinged cover provided over the emergency shutdown switch in the cab. The stainless steel cover shall be provided to prevent accidental actuation of the emergency shutdown switch.</p> <p><u>ENGINE SHUTDOWN</u></p> <p>An emergency engine shutdown, by means of incorporating a flapper over the engine air intake, shall be provided with a pneumatic push-pull control inside the cab. Pushing the control shall activate the shutdown.</p> <p>Pulling the control shall reset the emergency shutdown, without having to tilt the cab.</p> <p>A protective guard shall be supplied to avoid accidental activation.</p> <p><u>FUEL SEPARATOR</u></p> <p>The engine shall be equipped with a Racor in-line spin-on fuel and water separator in addition to the engine fuel filters.</p> <p>An in-bowl heater for cold weather starting shall be provided. The heater shall have an internal thermostat.</p> <p><u>ENGINE AIR INTAKE</u></p> <p>The air intake with ember separator shall be mounted on the passenger side of the apparatus, to the front of the engine. The ember separator is designed to prevent road dirt and recirculating hot air from entering the engine.</p> <p>The ember separator shall be easily accessible by tilting the cab.</p> <p><u>EXHAUST SYSTEM</u></p> <p>The exhaust system shall be stainless steel from the turbo to the inlet of the selective catalytic reduction (SCR) device, and shall be 4.00" in diameter. The exhaust system shall include a diesel particulate filter (DPF) and an SCR device to meet current EPA standards. An insulation wrap shall be provided on all exhaust pipes between the turbo and DPF 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.</p> <p><u>EXHAUST MODIFICATION</u></p> <p>The exhaust pipe shall be brought out from under the body at a 90 degree angle from the truck. The tail pipe shall extend a minimum of 2.00" past the body, adaptable for the Plymovent system. The diameter of the pipe shall be 6.00". There shall be a clearance of 4.00" completely</p>		

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	Yes	No
<p>around the pipe once past the side of the body. A stop shall be provided on the tail pipe that shall prevent the nozzle from sliding too far on.</p> <p><u>RADIATOR</u></p> <p>The radiator and the complete cooling system shall meet or exceed NFPA and engine manufacturer cooling system standards.</p> <p>For maximum cooling performance, the radiator core shall be made of brass tubes with copper fins having a serpentine design. The tubes shall be welded to brass headers using the patented Beta-Weld process for increased strength, longer road life and solder-bloom corrosion protection. The radiator core shall have a minimum frontal area of 1063 square inches. Steel supply and return tanks shall be bolted to the core headers and steel side channels to complete the radiator assembly. The radiator shall be compatible with commercial antifreeze solutions.</p> <p>The radiator 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 radiator assembly shall be isolated from the chassis frame rails with rubber isolators.</p> <p>The radiator shall include an integral deaeration/expansion tank. For visual coolant level inspection, the radiator shall have a built-in sight glass. The radiator shall be equipped with a 15 psi pressure relief cap.</p> <p>A drain port shall be located at the lowest point of the cooling system and/or the bottom of the radiator to permit complete flushing of the coolant from the system.</p> <p>A heavy-duty fan shall draw in fresh, cool air through the radiator. Shields or baffles shall be provided to prevent recirculation of hot air to the inlet side of the radiator.</p> <p><u>COOLANT LINES</u></p> <p>Gates, or Goodyear, rubber hose shall be used for all engine coolant lines installed by the chassis manufacturer.</p> <p>Hose clamps shall be stainless steel constant torque type to prevent coolant leakage. They shall react to temperature changes in the cooling system and expand or contract accordingly while maintaining a constant clamping pressure on the hose.</p> <p><u>FUEL TANK</u></p> <p>A 65 gallon fuel tank shall be provided and mounted at the rear of the chassis. The tank shall be constructed of 12-gauge, hot rolled steel. It shall be equipped with swash partitions and a vent. To eliminate the effects of corrosion, the fuel tank shall be mounted with stainless steel straps (no exception).</p> <p>A 0.75" 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 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 0.50" diameter vent shall be provided running from top of tank to just below fuel fill inlet.</p> <p>The tank shall meet all FHWA 393.67 requirements including a fill capacity of 95 percent of tank volume.</p> <p>All fuel lines shall be provided as recommended by the engine manufacturer.</p> <p><u>DIESEL EXHAUST FLUID TANK</u></p> <p>A 4.5 gallon diesel exhaust fluid (DEF) tank shall be provided and mounted in the driver's side body forward of the rear axle. The tank shall be constructed of 16-gauge type 304- L stainless steel.</p> <p>A 0.50" drain plug shall be provided in a low point of the tank for drainage.</p> <p>A fill inlet shall be provided and marked "Diesel Exhaust Fluid Only". The fill inlet shall be located adjacent to the single air bottle storage behind a common door on the driver side of the vehicle.</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 SHUTOFF</u></p> <p>A fuel line shutoff valve shall be installed on both the inlet and outlet of the primary fuel filter.</p> <p>The fuel filler door shall include a holder for the fuel fill cap.</p> <p><u>FUEL DOOR LABEL</u></p> <p>There shall be a label provided on the inside of the stainless steel fuel door, to read "Ultra Low Sulfur Diesel Fuel Only".</p> <p><u>TRANSMISSION</u></p> <p>An Allison 5th generation, Model EVS 3000P, 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>		

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	Yes	No
<p>Two (2) PTO openings shall be located on left side and top of converter housing (positions 9 o'clock and 3 o'clock).</p> <p>A transmission temperature gauge with red light and audible alarm shall be installed on the cab dash.</p> <p><u>TRANSMISSION SHIFTER</u></p> <p>A five (5)-speed push button shift module shall be mounted to right of driver on console. Shift position indicator shall be indirectly lit for after dark operation.</p> <p>The transmission ratio shall be 1st - 3.49 to 1.00, 2nd - 1.86 to 1.00, 3rd - 1.41 to 1.00, 4th - 1.00 to 1.00, 5th - 0.75 to 1.00, R - 5.03 to 1.00.</p> <p><u>TRANSMISSION PROGRAMMING</u></p> <p>The transmission shall be programmed to automatically shift the transmission to neutral when the parking brake is set to simplify operation and increase operational safety. (No exception).</p> <p><u>TRANSMISSION COOLER</u></p> <p>A transmission oil cooler shall be provided that is integral to the radiator and located at the bottom of the radiator. The cooler shall use 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® 1710 universal joints.</p> <p>The shafts shall be dynamically balanced before installation.</p> <p>A splined slip joint shall be provided in each driveshaft, slip joint shall be coated with Glidecoat® or equivalent.</p> <p><u>STEERING</u></p> <p>A Ross, Model TAS-85, steering gear, with integral heavy-duty power steering, shall be provided. For reduced system temperatures, the power steering shall incorporate an air to oil cooler and an Eaton, Model VN20F, hydraulic pump with integral pressure and flow control. All power steering lines shall have wire braded lines with crimped fittings.</p> <p>A tilt and telescopic steering column shall be provided to improve fit for a broader range of driver configurations.</p> <p><u>STEERING WHEEL</u></p> <p>The steering wheel shall be 18.00" in diameter, have tilting and telescoping capabilities, and a 2-spoke design.</p>		

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<p><u>LOGO AND CUSTOMER DESIGNATION ON HORN BUTTON</u></p> <p>The steering wheel shall have an emblem containing the fire apparatus manufacturer's logo and customer name. The emblem shall have three (3) rows of text for the customer's department name. There shall be a maximum of eight (8) characters in the first row, 11 characters in the second row and 11 characters in the third row.</p> <p>The first row of text shall be: Cambridge</p> <p>The second row of text shall be: Fire</p> <p>The third row of text shall be: Department</p> <p><u>AUTOMATIC CHASSIS LUBRICATION</u></p> <p>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.</p> <p>The lubrication system reservoir, which requires a 15.00" wide x 14.50" high x 6.25" deep mounting area, shall be located in the pumphouse on the right (officer's) side on the apparatus.</p> <ul style="list-style-type: none"> - Slack Adjusters - Brake Cam Screws - Steering Assist Cylinder (if applicable) - Tie Rods - Drag Link - King Pins - Spring Pins - Shackle Pins - Walking Beam Pins (tandem axle, if applicable) <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 and side plates. The bumper shall be metal finished and painted job color.</p>		

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	Yes	No
<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> 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> Two (2) chromed steel tow hooks shall be installed under the bumper and attached to the front frame members. The tow hooks shall be designed and positioned to allow up to a 6,000 lb. straight horizontal pull in line with the centerline of the vehicle. The tow hooks shall not be used for lifting of the apparatus.</p> <p><u>HOSE TRAY</u> A hose tray, constructed of aluminum, shall be placed in the center of the bumper extension. The tray shall have a capacity of 30' of 6.00" double jacket cotton-polyester hose. Black rubber grating shall be provided at the bottom of the tray. Drain holes are also provided.</p> <p><u>STAINLESS STEEL SCUFFPLATE</u> A polished stainless steel scuffplate shall be provided on the top edge of the painted bumper. The scuffplate shall be bent 90 degrees and protect the top corner.</p> <p><u>LICENSE PLATE BRACKET</u> A non-illuminated license plate bracket shall be mounted on the front of the vehicle under the cab headlights on the on the left (driver's) side of the vehicle. The bracket shall be formed from bright stainless steel.</p> <p><u>SIGHT RODS</u> Two (2) Bores, model BG48-10, lighted sight rods shall be mounted to the outside corners of the front bumper extension. The rods shall be chrome plated. The lights shall be connected to the marker lights, plus to its respective side directional.</p> <p><u>BUMPER HOSE RESTRAINT</u> There shall be one (1) pair hose tray restraint straps located center The restraints shall be a pair of 2.00" wide black nylon straps with Velcro fasteners provided. The strap(s) shall be used to secure the hose in the tray.</p>		

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	Yes	No
<p><u>CAB</u> The cab shall be designed specifically for the fire service and manufactured by the chassis builder.</p> <p>Construction of the cab shall consist of 5052-H32 0.125" aluminum welded to extruded aluminum framing. For increased structural integrity and occupant protection, the cab structure shall include a 0.25" wall tube and 0.19" plate for lateral support that ties the corner tube to the engine tunnel. The cab roof shall include a heavy one (1) piece aluminum extrusion with a wall thickness up to 0.12" and shall extend from side to side, and attach to the upper forward corner posts by customized aluminum castings. The sub-structure shall include a 0.25" wall extrusion under the crew cab floor for support while tilting the cab.</p> <p>To provide quality at the source and single source customer support, the cab shall be built by the apparatus manufacturer in a facility located on the manufacturer's premises (no exception).</p> <p>The cab shall be approximately 94.75" wide, with an interior width of approximately 87.50".</p> <p>The forward cab section shall have an overall height (from the cab roof to the ground) of approximately 99.00". The crew cab section shall have a 12.00" raised roof, with an overall cab height of approximately 111.00". 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>Floor to ceiling height inside the crew cab shall be 67.00" on the outside and 61.75" in the center to allow for clearance of the REPTO and driveshaft.</p> <p>The forward facing center crew cab shall have a recess in the rear wall of the cab for SCBA seats. This seat position shall provide additional room in the cab for greater comfort.</p> <p>Recessed areas shall be provided on each side of the cab facing forward to allow for EMS compartments.</p> <p>The side sheet on the cab shall be extended back to cover the SCBA/EMS compartment cavities, and provide required area for the pump below the cab.</p> <p>The crew cab shall be of the totally enclosed design.</p> <p>The cab shall be a full tilt design, allowing easy maintenance of the engine compartment. The engine shall be easily accessible and capable of being removed with the cab tilted.</p> <p>Provisions for checking the transmission, oil and power steering fluid levels shall be placed so that they are accessible without raising the cab.</p>		

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<p>The cab shall have a three (3)-point cab mount system with rubber isolators.</p> <p>The cab and crew cab shall be completely open to allow visual and audio communication with the passengers.</p> <p><u>ENGINE TUNNEL</u></p> <p>The engine hood shall be constructed of insulated aluminum.</p> <p>The engine hood shall be insulated for protection from heat and sound. The noise insulation shall keep the dBA level within the limits stated in the current NFPA series 1900 pamphlet.</p> <p><u>FENDER LINERS</u></p> <p>Full circular inner fender liners, in the wheel wells, shall be provided.</p> <p><u>WINDSHIELD</u></p> <p>A curved, safety glass windshield shall provide over 2,754 square inches of clear viewing area. The cab windshield shall have bright trim inserts in the rubber molding holding the glass in place. Economical windshield replacement glass shall be readily available from local auto glass suppliers.</p> <p>A stationary window shall be provided on each side of the crew cab.</p> <p>All cab glass shall be tinted.</p> <p><u>SUNVISORS</u></p> <p>Two (2) sunvisors, 28.00" long, shall be provided. The sunvisors shall be located above the windshield with one (1) mounted on each side of the cab.</p> <p><u>WINDSHIELD WIPERS</u></p> <p>The two (2) windshield wipers shall be electrically controlled and meet FMVSS requirements.</p> <p>Each wiper shall be equipped with a washer and wiper control.</p> <p>The washer reservoir shall be able to be filled without raising the cab.</p> <p><u>CAB REAR WALL EXTERIOR COVERING</u></p> <p>The exterior surface of the rear wall of the cab shall be overlaid with bright aluminum treadplate except for areas that are not typically visible when the cab is lowered.</p> <p><u>CAB LIFT</u></p> <p>A hydraulic cab lift system shall be provided consisting of an electric powered hydraulic pump, dual lift cylinders, and necessary hoses and valves.</p> <p>Hydraulic pump shall have a manual override for backup in the event of electrical failure.</p>		

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<p>Lift controls shall be located on the front area of the body in a convenient location within an enclosed compartment.</p> <p>The cab shall be capable of tilting 37 degrees to accommodate engine maintenance and removal.</p> <p>The cab shall be locked down by a two (2)-point normally closed spring loaded hook type latch that fully engages after the cab has been lowered. The system shall be hydraulically actuated to release the normally closed locks when the cab lift control is in the raised position and cab lift system is under pressure. When the cab is completely lowered and system pressure has been relieved, the spring loaded latch mechanisms shall return to the normally closed and locked position.</p> <p>For increased safety, a redundant mechanical stay arm shall be provided that must be manually put in place on the right side between the chassis and cab frame when the cab is in the raised position. This device shall be manually stowed to its original position before the cab can be lowered.</p> <p><u>Cab Lift Interlock</u></p> <p>The cab lift system shall be interlocked to the parking brake. The cab tilt mechanism shall be active only when the parking brake is set and the ignition switch is in the on position. If the parking brake is released, the cab tilt mechanism shall be disabled.</p> <p><u>CAB PUMP ENCLOSURE</u></p> <p>The rear of the cab shall be made to house the fire pump and pump panel below the forward facing crew cab seats.</p> <p><u>GRILLE</u></p> <p>A single piece polished stainless steel grille and framework shall be provided on the front center of the cab.</p> <p><u>SCUFFPLATE</u></p> <p>A polished stainless steel scuffplate shall be provided on the entire rear vertical surface of the engine tunnel.</p> <p><u>DOOR JAMB SCUFFPLATES</u></p> <p>All cab door jambs shall be furnished with a polished stainless steel scuffplate, mounted on the striker side of the jamb.</p> <p><u>SIDE OF CAB MOLDING</u></p> <p>Chrome molding shall be provided on both sides of cab.</p>		

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<p><u>MIRRORS</u> A Velvac®, Model 2010, west coast mirror shall be mounted on each side of the front cab door. Mirror dimensions shall be 7.00" wide x 16.00" high, and shall be heated and motorized. The shell shall be bright annealed stainless steel.</p> <p>Both mirrors shall be heated and have a remote control that is convenient to the driver.</p> <p><u>CONVEX MIRRORS</u> An 8.00" diameter round convex mirror shall be installed below each west coast mirror head.</p> <p><u>DOORS</u> The cab doors shall be approximately 35.00" wide x 68.00" high.</p> <p>The cab and crew cab doors shall be constructed of extruded aluminum with a nominal material thickness of .125". The exterior door skins shall be constructed from .090" aluminum.</p> <p>Crew cab entrance doors shall be located on the side of the cab behind the front wheels.</p> <p>The crew cab doors shall be double pan type and measure approximately 35.00" wide x 80.00" high.</p> <p>Flush mounted, chrome plated paddle type door handles shall be provided on the exterior of the cab and crew cab doors.</p> <p>All interior cab and crew cab door handles shall also have flush paddle handles.</p> <p>The cab doors shall be provided with both interior (rotary knob) and exterior (keyed) locks as required by FMVSS 206. The locks shall be capable of activating when the doors are open or closed. The doors shall remain locked if locks are activated when the doors are opened, then closed.</p> <p>The door hinges shall be a stainless steel piano type with a .25" pin.</p> <p>There shall be double automotive type rubber seals around the perimeter of all cab and crew cab doors to ensure a weather tight fit.</p> <p><u>DOOR SCUFFPLATES</u> Polished stainless steel scuffplates shall be installed on the inside of all cab doors, extending from the bottom of the door to 9.00" above the floor line.</p> <p><u>MANUAL CAB DOOR WINDOWS</u> All cab entry doors shall contain a conventional roll down window.</p>		

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	Bidder Complies	
	Yes	No
<p><u>CAB STEPS</u> The forward cab and crew cab access steps shall be 22.00" wide with an 8.00" minimum depth. The steps shall be located inside the doors, protecting them from weather elements. A slip-resistant handrail shall be provided adjacent to each cab door opening to assist during cab ingress and egress.</p> <p><u>STEP LIGHTS</u> For reduced overall maintenance costs compared to incandescent lighting, there shall be eight (8) white LED, step lights provided. The lights shall be installed at each cab and crew cab door, two (2) per step, in the driver side front doorstep, driver side crew cab doorstep, passenger side front doorstep and passenger side crew cab doorstep.</p> <p>In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.</p> <p>The lights shall be activated when the adjacent door is opened.</p> <p><u>FENDER CROWNS</u> Stainless steel fender crowns shall be installed at the cab wheel openings.</p> <p><u>HANDRAIL (INSTRUMENT PANEL)</u> A 16.00" long x 1.25" diameter handrail shall be mounted on the instrument panel across from the officer's seating position. The handrail shall be securely mounted in a location that is helpful for entering the cab. The handrail shall be an anodized aluminum extrusion with a ribbed design to provide a positive gripping surface.</p> <p><u>CREW CAB WINDOWS</u> On each side of the crew cab, a window with tinted glass shall be provided.</p> <p><u>INCREASED LEG ROOM</u> The horizontal tube directly behind the officer seat shall be located on the back side of the vertical cab support. This shall provide additional room for the officer position by mounting the officer seat rearward 3.00".</p> <p>The officer seat shall have a 95 degree back.</p> <p><u>CAB INTERIOR</u> The upper portion of the door panels shall be covered with a padded, leather grain vinyl resistant to oil, grease and mildew.</p>		

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	Bidder Complies	
	Yes	No
<p>Headliner shall be installed in both forward and rear cab sections. Headliner material shall be vinyl. A sound barrier shall be part of its composition. Material shall be installed on aluminum sheet and securely fastened to interior cab ceiling.</p> <p>Forward portion of cab headliner shall permit easy access for service of electrical wiring or other maintenance needs.</p> <p><u>CAB INTERIOR UPHOLSTERY</u> The cab interior upholstery shall be black.</p> <p><u>CAB INTERIOR PAINT</u> The cab interior metal surfaces shall be painted black, vinyl texture paint.</p> <p><u>CAB FLOOR</u> The cab and crew cab floor areas shall be covered with Polydamp™ acoustical floor mat consisting of a black pyramid rubber facing and closed cell foam decoupler.</p> <p>The top surface of the material has a series of raised pyramid shapes evenly spaced, which offer a superior grip surface. Additionally, the material has a .25" thick closed cell foam (no water absorption) which offers a sound dampening material for reducing sound levels.</p> <p><u>CAB HEATER/DEFROSTER</u> Two (2) 29,000 BTU fresh air heater/defroster units shall be provided inside the cab. A 3-speed blower and temperature control shall be provided with the heating units. Blower controls shall allow for independent control of defrost and heat for driver and passenger.</p> <p><u>CREW CAB HEATER</u> Two (2) auxiliary heaters with 21,000 BTU each, shall be provided in the crew cab. The heaters shall have a 3-speed blower with the temperature controls located adjacent to the passenger side heater.</p> <p>The heaters shall be recessed, one (1) each side in the rear lower outboard wall of the cab.</p> <p><u>WINDOW DEFROST FANS</u> There shall be two (2) 12 volt DC fans mounted on the ceiling of the crew cab, located one (1) each side inboard of the rear facing seat positions, outboard on the roof cross tube where the AC would be located (if equipped).</p> <p><u>GRAB HANDLE</u> A black rubber covered grab handle shall be mounted on the door post of the driver and officer's side cab door to assist in entering the cab. The grab handle shall be securely mounted to the post area between the door and windshield.</p>		

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	Bidder Complies	
	Yes	No
<p>The driver's grab handle shall be 3.00" higher than the officer's grab handle, to allow additional clearance between the steering wheel and grab handle.</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>ENGINE HOOD COVER</u></p> <p>The exterior surface of the engine hood shall have a Tuff-Tex padded cover. A flap shall be provided over the hinged access door leading to the fluid level dip sticks. The flap shall be secured with Velcro.</p> <p><u>MAP BOX</u></p> <p>A map box with four (4) bins, open from top, shall be installed by the Cambridge Fire Department. The map box shall be divided into four (4) bins, each being 12.50" wide x 2.25" high x 12.00" deep. Each bin shall slant 30 degrees from horizontal. The map box shall be constructed of .125" aluminum and shall be painted to match the cab interior.</p> <p><u>SEATING CAPACITY</u></p> <p>The seating capacity in the cab shall be five (5).</p> <p><u>DRIVER SEAT</u></p> <p>An HO Bostrom Sierra, model 30RX air-ride high-back style seat with built in lumbar support shall be provided in the cab for the driver.</p> <p>The driver's seat shall be furnished with three (3)-point shoulder type seat belt. The seat belt shall be furnished with automatic retractor. Extension shall be provided with the seat belt so the male end can be easily grasped and the female end easily located while sitting in a normal position.</p> <p><u>OFFICER SEAT</u></p> <p>An HO Bostrom Sierra FX fixed high back style seat shall be provided in the cab for the officer.</p> <p>The officer's seat shall be furnished with three (3)-point shoulder type seat belt. The seat belt shall be furnished with automatic retractor. Extension shall be provided with the seat belt so the male end can be easily grasped and the female end easily located while sitting in a normal position.</p> <p><u>RADIO COMPARTMENT</u></p> <p>A radio compartment shall be provided under the officer's seat.</p> <p>The inside compartment dimensions shall be 17.63" deep x 15.75" across x 5.25" high.</p>		

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	Bidder Complies	
	Yes	No
<p>A drop-down door with a chrome plated lift and turn latch shall be provided for access.</p> <p>The compartment shall be constructed of smooth aluminum and painted to match the cab interior.</p> <p><u>EMS COMPARTMENT</u></p> <p>A rear facing EMS compartment shall be provided in the crew cab at the driver side outboard position.</p> <p>The compartment shall be 23.00" wide x 42.00" high x 22.00" deep with one (1) Amdor rollup door, locking, with white finish. The clear door opening of the compartment shall be 32.00" high x 16.00" wide.</p> <p>The compartment shall be constructed of smooth aluminum and painted to match the cab interior.</p> <p><u>COMPARTMENT LIGHT</u></p> <p>There shall be two (2) white LED strip lights installed, one (1) each side of the compartment opening. The lights shall be controlled by an automatic door switch.</p> <p>This storage compartment shall be compliant per NFPA standard for automotive fire apparatus.</p> <p><u>SHELVING</u></p> <p>There shall be one (1) shelf provided. Each shelf shall be constructed of 0.090" aluminum with a 1.25" up-turned lip. Shelving shall be infinitely adjustable by means of a threaded tightener sliding in a track.</p> <p>The location shall be centered with-in the EMS compartment.</p> <p><u>REAR FACING PASSENGER SIDE OUTBOARD SEAT</u></p> <p>One (1) rear facing, HO Bostrom Tanker 400CT SCBA seat shall be provided in the passenger side outboard position in crew cab. The SCBA cavity shall be adjustable front to rear in 1.50" increments to accommodate different size SCBA bottles.</p> <p>Moving the SCBA cavity shall be accomplished by unbolting, relocating and rebolting in the desired location.</p> <p>Seat shall be furnished with three (3)-point shoulder type seat belt. The seat belt shall be furnished with automatic retractors. Extension shall be provided with the seat belt so the male end can be easily grasped and the female end easily located while sitting in a normal position.</p>		

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	Bidder Complies	
	Yes	No
<p><u>FORWARD FACING CENTER SEATS</u></p> <p>There shall be two (2) forward facing, Bostrom Tanker 400CT SCBA seats provided at the center position in the crew cab. The SCBA cavity shall be adjustable front to rear in 1.50" increments to accommodate different size SCBA bottles.</p> <p>Moving the SCBA cavity shall be accomplished by unbolting, relocating and rebolting in the desired location.</p> <p>The seats shall be furnished with a three (3)-point, shoulder type seat belt. The seat belts shall be furnished with automatic retractors. Extensions shall be provided with the seat belts so the male end can be easily grasped and the female end easily located while sitting in a normal position.</p> <p><u>SEAT UPHOLSTERY</u></p> <p>All seat upholstery shall be black Dura-Wear, waterproof fabric.</p> <p><u>AIR BOTTLE HOLDERS</u></p> <p>All SCBA type seats in the cab shall have a Ziamatic, Model ULLH, SCBA holder bracket. This bracket shall be compliant with the current NFPA 1901 standards and shall include a back plate, two (2) seats, a footplate and the Model LLS (Load & Lock) strap to hold the bottle in the bracket. The bracket seats shall be a "one size fits all" style seat and shall accommodate SCBA cylinders from the high pressure 30-minute to the high pressure 60-minute. Seats shall be adjustable up and down by unbolting, relocating, and re-bolting in the desired position.</p> <p><u>SEAT BELTS</u></p> <p>All seating positions in the cab and crew cab shall have orange seat belts.</p> <p><u>SEAT BELT MONITORING SYSTEM</u></p> <p>A seat belt monitoring system (SBMS) shall be provided. The SBMS shall be capable of monitoring up to ten (10) seat positions indicating the status of each seat position with a green or red LED indicator 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 <p><u>Audible Alarm</u></p> <p>The SBMS shall include an audible alarm that shall be activated when a red illumination condition exists and the parking brake is released, or a red illumination condition exists and the transmission is not in park.</p>		

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	Bidder Complies	
	Yes	No
<p><u>HELMET HOLDER</u></p> <p>There shall be five (5) Zico, Model UHH-1, helmet holder bracket(s) provided in the cab. The brackets shall provide quick access and secure storage of the helmet(s). The bracket location(s) shall be determined at time of final inspection.</p> <p><u>CAB DOME LIGHTS</u></p> <p>There shall be four (4) Weldon 808* series, dual LED dome lights with black bezels provided. Two (2) lights shall be mounted above the inside shoulder of the driver and officer and two (2) lights shall be installed and located, one (1) on each side of the crew cab.</p> <p>The color of the LED's shall be red and white.</p> <p>The white LED's shall be controlled by the door switches and the lens switch.</p> <p>The color LED's shall be controlled by the lens switch.</p> <p><u>OVERHEAD MAP LIGHTS</u></p> <p>There shall be two (2) white halogen, square adjustable map lights installed in the cab:</p> <ul style="list-style-type: none"> • One (1) overhead in front of the driving position. • One (1) overhead in front of the passenger's position. <p>Each light shall include a switch on the light housing.</p> <p>The light switches shall be connected directly to the battery switched power.</p> <p><u>CAB INSTRUMENTATION</u></p> <p>The cab instrument panel shall be black molded ABS and include gauges, telltale indicator lamps, control switches, alarms, and a diagnostic panel. The function of the instrument panel controls and switches shall be identified by a label adjacent to each item. Actuation of the headlight switch shall illuminate the labels in low light conditions. Telltale indicator lamps shall not be illuminated unless necessary. The cab instruments and controls shall be conveniently located within the forward cab section, forward of the driver. The gauge assembly and switch panels are designed to be removable for ease of service and low cost of ownership.</p> <p><u>GAUGES</u></p> <p>The gauge panel shall include the following ten (10) black faced gauges with black bezels to monitor vehicle performance:</p> <p>Voltmeter gauge (volts):</p> <ul style="list-style-type: none"> Low volts (11.8 VDC) Amber telltale light on indicator light display with steady tone alarm 		

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	Bidder Complies	
	Yes	No
High volts (15.5 VDC)		
Amber telltale light on indicator light display with steady tone alarm		
Engine Tachometer (RPM)		
Speedometer MPH		
Fuel level gauge (Empty - Full in fractions):		
Low fuel (1/8 full)		
Amber telltale light on indicator light display with steady tone alarm		
Engine Oil pressure Gauge (PSI):		
Low oil pressure to activate engine warning lights and alarms		
Red telltale light on indicator light display with steady tone alarm		
Front Air Pressure Gauges (PSI):		
Low air pressure to activate warning lights and alarm		
Red telltale light on indicator light display with steady tone alarm		
Rear Air Pressure Gauges (PSI):		
Low air pressure to activate warning lights and alarm		
Red telltale light on indicator light display with steady tone alarm		
Transmission Oil Temperature Gauge (Fahrenheit):		
High transmission oil temperature activates warning lights and alarm		
Amber telltale light on indicator light display with steady tone alarm		
Engine Coolant Temperature Gauge (Fahrenheit):		
High engine temperature activates an engine warning light and alarms		
Red telltale light on indicator light display with steady tone alarm		
Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions):		
Low fluid (1/8 full)		

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	Bidder Complies	
	Yes	No
Amber telltale light on indicator light display		
<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) (where applicable)</p> <p>Check engine</p> <p>Check trans (check transmission)</p> <p>Air rest (air restriction)</p> <p>Driver door open</p> <p>Passenger door open</p> <p>Tower (tower raised) (where applicable)</p> <p>DPF (engine diesel particulate filter regeneration)</p> <p>HET (engine high exhaust temperature) (where applicable)</p> <p>ABS (antilock brake system)</p> <p>MIL (engine emissions system malfunction indicator lamp) (where applicable)</p> <p>Regen inhibit (engine emissions regeneration inhibit) (where applicable)</p> <p>Trans temp (transmission temperature)</p> <p>Side roll fault (where applicable)</p> <p>Front air bag fault (where applicable)</p> <p>Aux brake overheat (auxiliary brake overheat) (where applicable)</p> <p>DEF (low diesel exhaust fluid level)</p> <p>The following red telltale lamps shall be present:</p>		

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	Bidder Complies	
	Yes	No
Ladder rack down		
Parking brake		
Stop engine		
The following green telltale lamps shall be present:		
Left turn		
Right turn		
Battery on		
Ignition		
Aux brake (auxiliary brake engaged) (where applicable)		
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.		
<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 when the ignition switch is held in the up position for three (3) to five (5) seconds 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 variable voltage control switch shall be provided. The switch turned counter clockwise increases the panel backlighting intensity to a maximum level and the switch turned clockwise decreases the panel backlighting intensity to a minimum level.		

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	Bidder Complies	
	Yes	No
<p>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 perform prove-out on the telltale indicators and alarms when the ignition switch is held in the up position for three (3) to five (5) seconds to ensure proper performance. A green indicator lamp is activated with vehicle ignition.</p> <p>Engine start switch: A two (2)-position momentary rocker switch shall be provided. The first switch position is the default switch position. The second switch position shall activate the vehicle's engine. The switch actuator is designed to prevent accidental activation.</p> <p>Hazard switch shall be incorporated into the steering column.</p> <p>Heater and defroster controls.</p> <p>Turn signal arm: A self-canceling turn signal with high beam headlight controls.</p> <p>Windshield wiper control shall have high, low, and intermittent modes.</p> <p>Parking brake control: An air actuated push/pull park brake control.</p> <p>Chassis horn control: Activation of the chassis horn control shall be provided through the center of the steering wheel.</p> <p><u>CUSTOM SWITCH PANELS</u></p> <p>The design of cab instrumentation shall allow for emergency lighting and other switches to be placed within easy reach of the operator thus improving safety. There shall be positions for up to five (5) switch panels in the engine tunnel console. All switches have backlit labels for low light applications.</p> <p>High idle engagement switch: A maintained rocker switch with integral indicator lamp shall be provided. The switch shall activate and deactivate the high idle function. The "Ok TO Engage High Idle" indicator lamp must be active for the high idle function to engage. A green indicator lamp integral to the high idle engagement switch shall indicate when the high idle function is engaged.</p> <p>"Ok To Engage High Idle" indicator lamp: A green indicator light shall be provided next to the high idle activation switch to indicate that the interlocks have been met to allow high idle engagement.</p> <p>Diesel particulate filter regeneration switch (where applicable).</p> <p>Diesel particulate filter regeneration inhibit switch (where applicable).</p>		

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	Bidder Complies	
	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 right 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>Engine diagnostic switch (blink codes flashed on check engine telltale indicator)</p> <p>An ABS diagnostic switch shall be accessible while standing on the ground and located inside the passenger's cab side door. The diagnostic switch shall allow ABS system blink codes should a problem exist. The diagnostic panel shall include the following:</p> <p>ABS diagnostic switch (blink codes flashed on ABS telltale indicator)</p> <p><u>AIR RESTRICTION INDICATOR</u></p> <p>A high air restriction warning indicator light (electronic) shall be provided.</p> <p><u>OFFICER SPEEDOMETER</u></p> <p>A Class I digital display speedometer shall be recessed into the instrument panel in the special dashboard enclosure.</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>OPEN DOOR INDICATOR LIGHT</u></p> <p>There shall be two (2) red indicator lights provided and located in clear view of the driver, warning of any open passenger or equipment compartment door(s).</p> <ul style="list-style-type: none"> • One (1) light shall indicate status of doors on the driver's side of the vehicle • One (1) light shall indicate the status of the passenger side and rear compartment doors 		

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	Bidder Complies	
	Yes	No
<p><u>WIPER CONTROL</u></p> <p>Wiper control shall consist of a two (2)-speed individual windshield wiper control with intermittent feature and windshield washer controls. The control shall also have a "return to park" provision, which allows the wipers to return to the stored position when the wipers are not in use.</p> <p>The wipers shall be interlocked to the parking brake. The wipers shall terminate operation when the parking brake is set.</p> <p><u>SPARE CIRCUIT</u></p> <p>There shall be one (1) 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 30 amps at 12 volts DC • Power and ground shall terminate near the power distribution panel • Termination shall be with six (6) position terminal strip • Wires shall be sized to 125% of the protection <p>This circuit(s) may be load managed when the parking brake is set.</p> <p><u>SPARE CIRCUIT</u></p> <p>There shall be one (1) 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 on the right side of the instrument panel facing the officer's position • Termination shall be with 15 amp, power point plug with rubber cover • Wires shall be sized to 125 percent of the protection <p>The circuit(s) may be load managed when the parking brake is set.</p> <p><u>LABEL, EMERGENCY LIGHT SWITCHES</u></p> <p>The emergency light switch labels shall have the "NFPA" text omitted. Each switch shall be labeled for its normal function (example: Roof Light, Front Warning, etc.).</p>		

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	Bidder Complies	
	Yes	No
<p><u>MOUNTING BRACKET(S) ONLY</u></p> <p>There shall be one (1) radio mounting wedge bracket provided for two (2) Motorola Radios, speedometer, and 2nd parking brake as shown in the picture (Ref Pics located Stage 3 and 7 Job-E-Folder IP photos) mobile radio control heads, the passenger side parking brake control and the passenger side speedometer. The bracket shall be located on top of the passenger side dash panel, on the right (officer's) side. The bracket shall be painted wrinkle black.</p> <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>TWO-WAY RADIO CABLE INSTALLATION</u></p> <p>There shall be one (1) customer supplied two-way radio remote head cable(s) sent to the apparatus manufacturers preferred radio installer for installation. The cable shall be run location sent to precision with cables - should run from the officer's seat radio box to the additional radio console.</p>		

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	Bidder Complies	
	Yes	No
<p><u>RADIO ANTENNA MOUNT</u></p> <p>There shall be one (1) standard 1.125", 18 thread antenna-mounting base(s) installed to the rear of the lightbar on the cab roof with high efficiency, low loss, coaxial cable(s) routed to the instrument panel area. A weatherproof cap shall be installed on the mount.</p> <p><u>RADIO ANTENNA MOUNT</u></p> <p>There shall be three (3) standard 1.125", 18 thread antenna-mounting base(s) installed to the rear of the lightbar on the cab roof with high efficiency, low loss, coaxial cable(s) routed to the radio box. A weatherproof cap shall be installed on the mount.</p> <p><u>RADIO ANTENNA MOUNT</u></p> <p>There shall be one (1) standard antenna-mounting base(s), Model MATM, with 17 feet of coax cable and weatherproof cap provided for a two (2)-way radio installation. The standard mount shall be located on the cab roof, just to the rear of the officer seat and the additional mount(s) shall be located to the rear of the lightbar. The cable(s) shall be routed to the rear of the driver's seat.</p> <p><u>ELECTRICAL POWER CONTROL SYSTEM</u></p> <p>A compartment shall be provided in or under the cab to house the vehicle's electrical power and signal circuit protection and control components. The power and signal protection and control compartment shall contain circuit protection devices and power control devices. Power and signal protection and control components shall be protected against corrosion, excessive heat, excessive vibration, physical damage and water spray.</p> <p>Serviceable components shall be readily accessible.</p> <p>Circuit protection devices, which conform to SAE standard, shall be utilized to protect each circuit. All circuit protection devices shall be sized to prevent wire and component damage when subjected to extreme current overload. General protection circuit breakers shall be Type-I automatic reset (continuously resetting) and conform to SAE J553 or J258. PTO power circuits shall be protected by Type III manual reset non-cycling circuit breakers conforming to SAE J553 or J258 which remain open until manually reset. When required, automotive type fuses conforming to SAE J554, J1284, J1888 or J2077 shall be utilized to protect electronic equipment.</p> <p>Power control relays and solenoids shall have a direct current (dc) rating of 125 percent of the maximum current for which the circuit is protected.</p> <p>Visual status indicators shall be supplied to identify control safety interlocks and vehicle status. In addition to visual status indicators, audible alarms designed to provide early warning of problems before they become critical shall be used.</p>		

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	Bidder Complies	
	Yes	No
<p><u>VOLTAGE MONITOR SYSTEM</u></p> <p>A voltage monitor system shall be provided to indicate the status of each battery system connected to the vehicle's electrical load. The monitor system shall provide visual and audio warning when the system voltage is above or below optimum levels.</p> <p><u>POWER AND GROUND STUDS</u></p> <p>There shall be two (2) studs provided in the primary power distribution center for 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 60-amp direct battery power</p> <p>There shall also be a 12-volt ground stud located in or adjacent to the power distribution center.</p> <p>EMI/RFI PROTECTION</p> <p>The electrical system proposed shall include means to control undesired electromagnetic and radio frequency emissions. State of the art electrical system design and components shall be used to ensure radiated and conducted EMI (electromagnetic interference) and RFI (radio frequency interference) emissions are suppressed at their source.</p> <p>The apparatus proposed shall have the ability to operate in the electromagnetic environment typically found in fire ground operations. The contractor shall be able to demonstrate the EMI and RFI testing has been done on similar apparatus and certifies that the vehicle proposed meets SAE J551 requirements.</p> <p>EMI/RFI susceptibility shall be controlled by applying immune circuit designs, shielding, twisted pair wiring and filtering. The electrical system shall be designed for full compatibility with low level control signals and high powered two-way radio communication systems. Harness and cable routing shall be given careful attention to minimize the potential for conducting and radiated EMI-RFI susceptibility.</p> <p><u>BATTERY SYSTEM</u></p> <p>Six (6) 12 volt, Exide Model 31S750X3W batteries that include the following features shall be provided:</p> <ul style="list-style-type: none"> - 750 CCA, cold cranking amps - 180 amp reserve capacity - High cycle 		

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	Bidder Complies	
	Yes	No
<p>- Group 31</p> <p>- Rating of 4500 CCA at 0 degrees Fahrenheit</p> <p>- 1080 minutes of reserve capacity</p> <p>- Threaded stainless steel studs</p> <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>The batteries shall be placed on non-corrosive mats and be stored in well ventilated compartments located under the cab. The compartments shall be totally enclosed with removable covers.</p> <p>Heavy-duty, 2/0 gauge, color coded battery cables shall be used to provide maximum power to the electrical system. The cables shall be color coded.</p> <p>The 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>STAINLESS STEEL BATTERY TRAYS</u></p> <p>Stainless steel battery trays shall be provided in each battery box location. The trays shall be 2.50" high.</p> <p>Each trays shall have two (2) drain tubes that extend down past the electronic distributions box on the driver side and down past the cab lift pump on the passenger side.</p>		

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	Bidder Complies	
	Yes	No
<p><u>BATTERY CHARGER/ AIR COMPRESSOR</u></p> <p>There shall be a Kussmaul™ Pump Plus 1200, Model # 52-21-1100, single output battery charger/air compressor system shall be provided. A display bar graph indicating the state of charge shall be included.</p> <p>The automatic charger shall maintain one (1) set of batteries with a maximum output current of 40 amps.</p> <p>The 12-volt air compressor shall be installed to maintain the air system pressure when the vehicle is not in use.</p> <p>The battery charger shall be wired directly to the AC shoreline inlet.</p> <p>Battery charger/compressor shall be located in the front left body compartment.</p> <p>The battery charger indicator shall be located on the driver's seat riser.</p> <p><u>KUSSMAUL AUTO EJECT FOR SHORELINE</u></p> <p>One (1) shoreline inlet shall be provided to operate the dedicated 120-volt circuits on the truck without the use of the generator.</p> <p>The shoreline receptacle (s) shall be provided with a NEMA 5-15, 120 volt, 15 amp, straight blade Kussmaul Super auto eject plug with a yellow weatherproof cover. The cover is spring loaded to close, preventing water from entering when the shoreline is not connected.</p> <p>The unit is completely sealed to prevent road dirt contamination.</p> <p>A solenoid wired to the vehicle's starter is energized when the engine is started. This instantaneously drives the plug from the receptacle.</p> <p>An internal switch arrangement shall be provided to disconnect the load prior to ejection to eliminate arcing of the connector contacts.</p> <p>The shoreline shall be connected to battery charger.</p> <p>A mating connector body shall also be supplied with the loose equipment.</p> <p>There shall be a label installed near the inlet(s) that state the following:</p> <ul style="list-style-type: none"> • Line Voltage • Current Rating (amps) • Phase • Frequency <p>The shoreline receptacle shall be located in the driver side lower step well of cab.</p>		

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	Bidder Complies	
	Yes	No
<p><u>ALTERNATOR</u> A C.E Niehoff, Model C531 alternator shall be provided. It shall have a rated output current of 360 amps, as measured by SAE method J56. 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 MANAGEMENT</u> A Kussmaul Load Manager 2 shall be provided on the apparatus. The device is an electronic load management (ELM) system that monitors the vehicles 12-volt electrical system, and automatically reduces the electrical load in the event of a low voltage condition and by doing so, ensures the integrity of the electrical system.</p> <p>The ELM shall monitor the vehicle's voltage while at the scene (parking brake applied). It shall sequentially shut down individual electrical loads when the system voltage drops below a preset value. Two (2) separate electrical loads shall be controlled by the load manager. The ELM shall sequentially re-energize electrical loads as the system voltage recovers.</p> <p><u>HEADLIGHTS</u> There shall be four (4) rectangular halogen lights mounted in the front quad style, chrome housing on each side of the cab grille:</p> <ul style="list-style-type: none"> • The outside light on each side shall contain a halogen low and high beam module. • The inside light on each side shall contain a halogen high beam module only. <p><u>DIRECTIONAL LIGHTS</u> There shall be two (2) Whelen, Model 60A00TAR, amber LED populated arrow directional lights provided on the front of the cab, above the headlights. Each light shall be housed in the same quad common bezel as the front warning light.</p> <p><u>BACK-UP ALARM</u> A PRECO, Model 1040, solid-state electronic audible back-up alarm that actuates when the truck is shifted into reverse shall be provided. The device shall sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum ten (10) dBA above surrounding environmental noise levels.</p> <p><u>ELECTRICAL WIRING DIAGRAMS</u> Two (2) electrical wiring diagrams, prepared for the model of chassis and body, shall be provided.</p> <p><u>MANUAL, FIRE APPARATUS PARTS</u> Two (2) custom parts manuals for the complete fire apparatus shall be provided in hard copy with the completed unit.</p>		

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	Bidder Complies	
	Yes	No
<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>MANUALS, CHASSIS SERVICE</u></p> <p>Two (2) chassis service manuals 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 - Front Axle/Suspension - Brakes - Engine 		

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	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> - 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>Two (2) chassis operation manuals 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>		

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	Bidder Complies	
	Yes	No
<p><u>WATER TANK</u></p> <p>Booster tank shall have a capacity of 500 gallons and be constructed of UV stabilized ultra high impact polypropylene plastic by a manufacturer with a minimum of 20 years' experience building tanks, is ISO 9001:2000 certified in all its manufacturing facilities, and has over 50,000 tanks in service.</p> <p>The tank shall be no wider than 39.00" at the base to allow for greater compartment depth and no wider than 53.00" at the top.</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> <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 stainless 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>		

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	Bidder Complies	
	Yes	No
<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><u>TANK CRADLE</u></p> <p>The water tank shall be installed in a fabricated cradle assembly constructed of stainless steel.</p> <p>Sufficient crossmembers shall be provided to properly support bottom of tank.</p> <p>Crossmembers shall be constructed of stainless steel bar channel or rectangular tubing.</p> <p><u>DIRECT TANK FILL AUTOMATIC</u></p> <p>There shall be a 2.50" gated external tank fill installed and integrated with the large diameter rear suction system. The tank fill shall use the suction pipe and connection as the water supply for the tank fill.</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>An electrically controlled 2.50" full flow ball valve with 2.50" piping shall be located in the front plumbing area. The electric valve shall be wired to the water level indicator. When the water level falls to a point of approximately 1/2 the valve shall automatically open. When the water level returns to the full mark the valve shall close. The valve controls shall be mounted on the pump panel.</p>		

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	Bidder Complies	
	Yes	No
<p><u>BODY HEIGHT</u> The height of the body shall be 92.00" from the bottom of the body to the top of the body.</p> <p><u>HOSE BED</u> The hose bed shall be fabricated of corrosion resistant, low carbon austenitic, brushed and painted 304L stainless steel. Due to superior corrosion resistance of 300 stainless grades, other grades of austenitic stainless steels, or any grade of ferritic or martensitic stainless, shall not be acceptable.</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 Bay # 1 500' of 2.5" DJ, Bay # 2 850' of 2.5" DJ, Bay # 3 1000' of 4.0" DJ.</p> <p><u>HOSEBED DIVIDER</u> Two (2) adjustable hosebed dividers shall be furnished for separating hose.</p> <p>The divider shall be painted job color.</p> <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 RESTRAINT</u> The hose in the hosebed shall be restrained by black nylon web strap netting at the rear of the hosebed. The netting shall include metal seat belt type quick release fasteners.</p> <p><u>HOSE RESTRAINT</u> The hose in the hosebed shall be restrained by black nylon web strap netting at the rear of the hosebed. The netting shall include a bar at the top and bottom of the net. The net is going to be attached with rings (similar to shower curtain) and buckles on the sides. They shall be able to release buckle on one side and slide it open. It shall be able to be opened from either side.</p>		

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	Bidder Complies	
	Yes	No
<p><u>HOSE RESTRAINT</u></p> <p>The hose in the hosebed shall be restrained by black nylon web strap netting at the rear of the hosebed. The netting shall include metal seat belt type quick release fasteners.</p> <p><u>SHELF, HINGED IN HOSE BED</u></p> <p>There shall be one (1) hinged shelves, constructed of aluminum grating, provided for hose or equipment storage inside the hose bed located on the right (officer's) passenger's side hosebed forward of the rear cross divider, shall be hinged on the outside of the hosebed (right side) and be able to flip up in the direction of the hosebed cover. .</p> <p>Grating slats shall be 4.50" x .50" corrugated aluminum extrusion with spacing provided for aeration.</p> <p>The shelf shall be rated for a 500 lb. capacity. The edges of the shelf shall be flanged down to increase the structural integrity of the shelf.</p> <p>There shall be angles provided to set shelf on when in stored position and a rubber latch provided to hook shelf on to the hosebed cover when in the open position if required.</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>HOSE BED LIGHTS</u></p> <p>There shall be four (4) Amdor LumaBar SuperBright, Model XX9951, 20.00" long white 12 volt DC LED light strips provided to light the hose bed area. These lights shall be installed under a full length stainless steel shield to protect the lights and wiring.</p> <ul style="list-style-type: none"> • One (1) shall be installed on the driver's side, side of the hose bed three (3) feet from the front of the hose bed. • One (1) shall be installed on the driver's side, side of the hose bed three (3) feet from the rear of the hose bed. 		

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	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • One (1) shall be installed on the passenger's side, side of the hose bed three feet from the rear of the hose bed. • One (1) shall be installed on the passenger's side, side of the hose bed three (3) feet from the front of the hose bed. <p>The lights shall be controlled by a cup switch at the rear of the apparatus no more than 62.00" from the ground.</p> <p><u>RUNNING BOARDS</u></p> <p>A running board shall be provided on each side of the front body to allow access to the backboard/crosslay storage area. The running boards shall be designed with a grip pattern punched into .125" bright aluminum treadplate material providing support, slip resistance, and drainage.</p> <p><u>TAILBOARD</u></p> <p>The tailboard shall be designed as a space saving work platform provided at the rear of the body. The platform shall fold up to reduce overall truck length, angle of departure, and create a clean safe working platform by keeping rain, snow, and ice off the platform during transit.</p> <p>The platform shall be 35.50" wide x 21.00" deep. When folded up, the platform shall be the lower section of the rear compartment door. The external surface of the platform shall be covered in smooth aluminum. When folded down, the platform shall provide an aluminum treadplate stepping surface with a rated capacity of 500 lb.</p> <p><u>REAR BUMPER</u></p> <p>A two (2) piece rear bumper shall be provided at the rear of the apparatus.</p> <p>The bumper shall be a two (2) piece design, allowing the folding platform to operate in the center of the unit.</p> <p>The bumper shall be fabricated from bright aluminum treadplate and be 12.00" in depth.</p> <p><u>REAR WALL, BODY MATERIAL, PUC</u></p> <p>The rear wall shall be smooth and the same material as the body.</p> <p>The rear wall body material shall be painted. Unpainted aluminum overlays shall be provided to allow for chevron application and to provide continuously smooth rear wall panels.</p> <p>The outboard edges of the rear wall shall be trimmed in polished stainless steel.</p> <p><u>TOW BARS</u></p> <p>Two (2) tow bars shall be installed under the tailboard.</p> <p>Tow bars shall be fabricated of 1.00" CRS bar rolled into a 3.00" radius.</p>		

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	Bidder Complies	
	Yes	No
<p>Tow bar assemblies 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 assemblies 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> <p><u>HITCH RECEIVER</u></p> <p>A hitch receiver shall be installed at the rear of the apparatus.</p> <p>The hitch shall be constructed of heavy steel tubing and reinforced to the truck framework, for the receiving portion. This shall be a Class III/IV trailer hitch. A class IV rating shall be obtained only when a weight distributing hitch is used.</p> <p>Slide-in portion shall be held in place by one (1) safety pin with clip.</p> <p>The trailer electrical connection shall be a seven (7)-way flat blade recreational vehicle connector for trailer wiring compatible with electric brake systems, and a second connector with inverted ground meeting SAE J560 standards providing an auxiliary connection for warning devices.</p>		

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	Bidder Complies	
	Yes	No
<p><u>COMPARTMENTATION</u></p> <p>The apparatus body shall be built of corrosion resistant, low carbon austenitic, brushed and painted 304L stainless steel. Due to superior corrosion resistance of 300 stainless grades, other grades of austenitic stainless steels, or any grade of ferritic or martensitic stainless, shall not be acceptable.</p> <p>The body panel assembly shall be constructed in a fixture and consist of formed sheet metal for the front and rear bulkheads, door frames, floors, ceilings, and back walls. These parts shall be welded together to ensure greatest longevity with no visible welds in compartment interior.</p> <p>Welded construction shall consist of .38" engineered plug weld holes that control the size, location, and the amount of weld required. The bodies shall be assembled and welded from engineered prints that call out the size, location, and type of weld required.</p> <p>In structural areas the sheet metal components shall have flanges for welding. No butt joints shall be allowed. Gussets and support posts shall be provided for additional strength where needed.</p> <p>The fender panel shall be an integral part of the complete welded body assembly. All light and compartment holes are pre punched prior to construction to provide accuracy and rounded corners to prevent stress risers in the material.</p> <p>Circular fender liners shall be provided. For prevention of paint chips and ease of suspension maintenance the fender liners shall be formed from brush finished 304L stainless steel, be unpainted, and removable for suspension maintenance (no exception).</p> <p>Compartment flooring shall be of the sweep out design with the floor 1.00" higher than the compartment door lip.</p> <p>Drip protection shall be provided above the doors by means of aluminum extrusion, or formed bright aluminum treadplate.</p> <p>The top of the compartment shall be covered with bright aluminum treadplate rolled over the edges on the front, and rear. These covers shall have the corners welded.</p> <p>The aluminum treadplate covers shall not be used to form the compartment ceilings, but rather they shall be a separate component (no exception).</p> <p>All screws and bolts, which are not Grade 8, shall be stainless steel and where they 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>		

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	Bidder Complies	
	Yes	No
<p>The backbone of the body support system shall begin with the chassis frame rails which is the strongest component of the chassis and is designed for sustaining maximum loads. The support system shall include lateral frame rail extensions that are formed from .375" 80k high strength steel and bolted to the chassis frame rails with .625" diameter Grade 8 bolts.</p> <p>The vertical and horizontal members of the frame rail extensions are to be reinforced with welded gussets and extend to the outside edge of the body. The lateral frame extensions shall be electro-coated for superior corrosion resistance.</p> <p>The floating substructure shall be separated from the lateral frame extensions with neoprene elastomer isolators. These isolators shall reduce the natural flex stress of the chassis from being transmitted to the body, and absorb road shock and vibration.</p> <p>The isolators shall have a broad load range, proven viability in vehicular applications, be of a fail-safe design and allow for all necessary movement in three (3) transitional and rotational modes.</p> <p>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. Two (2) 3.50" diameter isolators are provided at the front of the body near the centerline of the vehicle above the chassis frame. A minimum of eight (8) - 2.55" diameter isolators shall be provided, two (2) under each front compartment and two (2) under each rear side compartment. A minimum of four (4) 3.50" diameter isolators shall be provided under the rear compartment.</p> <p>A design with body compartments simply hanging/sitting on the chassis in an unsupported (cantilever) 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. Documentation of the material meeting the standard shall be provided at time of delivery.</p> <p><u>LOUVERS</u></p> <p>All body compartments shall have a minimum of one (1) set of automotive style, dust resistant louvers pressed into a wall. The louvers shall incorporate a one (1)-way rubber valve that provides airflow out of the compartment and prevents water and dirt from gaining access to the compartment. Compartments over the wheel shall not have louvers.</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 and strain gauging have been performed with special attention given to fatigue life, and structural integrity of the body and substructure.</p>		

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	Bidder Complies	
	Yes	No
<p>The 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 on 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 the actual testing techniques shall be made available upon request.</p> <p>FEA shall have been performed on all substructure components.</p> <p><u>COMPARTMENTATION, DRIVER'S SIDE</u></p> <p>A full height, roll-up door compartment ahead of the rear wheels shall be provided. The pump operator's panel shall be located in this compartment. The interior dimensions of this compartment shall be 50.00" wide x 53.50" high x 25.88" deep. The area behind the roll up door spool shall be notched for exterior storage or larger capacity water tank tee. 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 47.00" wide x 53.50" 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 roll-up door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 60.00" wide x 22.75" high x 25.88" deep. The area behind the roll up door spool shall be notched for exterior storage or larger capacity water tank tee. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 57.00" wide x 22.75" 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, roll-up door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 52.00" wide x 54.50" high x 25.88" deep. The area</p>		

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	Bidder Complies	
	Yes	No
<p>behind the roll up door spool shall be notched for exterior storage or larger capacity water tank tee. 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 49.00" wide x 54.50" 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>All compartments shall include a drip pan below the roll of the door.</p> <p><u>COMPARTMENTATION, PASSENGER'S SIDE</u></p> <p>A full height, jump off compartment with a roll-up door ahead of the rear wheels shall be provided, as convenient large storage compartment for often used items for the crew. The interior dimensions of this compartment shall be 50.00" wide x 54.50" high x 25.88" deep. The area behind the roll up door spool shall be notched for exterior storage or larger capacity water tank tee. 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 47.00" wide x 54.50" 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 roll-up door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 60.00" wide x 23.00" high x 25.88" deep. The area behind the roll up door spool shall be notched for exterior storage or larger capacity water tank tee. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 57.00" wide x 23.00" 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, roll-up door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 52.00" wide x 54.50" high x 25.88" deep. The area behind the roll up door spool shall be notched for exterior storage or larger capacity water tank tee. 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 49.00" wide x 54.50" high.</p>		

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	Bidder Complies	
	Yes	No
<p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p>All compartments shall include a drip pan below the roll of the door.</p> <p><u>ROLLUP DOOR, SIDE COMPARTMENTS</u></p> <p>There shall be six (6) compartment doors installed on the side compartments, double faced, aluminum construction, painted one (1) color to match the lower portion of the body and manufactured by AMDOR™ brand rollup doors.</p> <p>Door(s) shall be constructed using 1.00" extruded double wall aluminum slats which will feature a flat smooth interior surface to provide maximum protection against equipment hang-up. The slats shall be connected with a structural driven ball and socket hinge designed to provide maximum curtain diaphragm strength. Mounting and adjusting the curtain shall be done with a clip system that connects the curtain to the balancer drum allowing for easy tension adjustment without tools. The slats shall be mounted in reusable slat shoes with positive snap-lock securement.</p> <p>Each slat will incorporate weather tight recessed dual durometer seals. One (1) fin will be designed to locate the seal within the extrusion. The second will serve as a wiping seal which will also allow for compression to prevent water ingress.</p> <p>The doors shall be mounted in a one (1)-piece aluminum side frame with recessed side seals to minimize seal damage during equipment deployment. All seals including side frames, top gutters and bottom panel are to be manufactured utilizing non-marring materials.</p> <p>Bottom panel flange of rollup door will be equipped with two (2) cut-outs to allow for easier access with gloved hands.</p> <p>A stainless steel lift bar to be provided for opening the door and located at the bottom of each door with latches on the outer extrusion of the door frame. A ledge to be supplied over lift bar for additional area to aid in closing the door. The lift bar shall be located at the bottom of door with striker latches installed at the base of the side frames. Side frame mounted door strikers will include support beneath the stainless steel lift bar to prevent door curtain bounce, improve bottom seal life expectancy and to avoid false door ajar signals.</p> <p>All injection molded rollup door wear components will be constructed of Type 6 nylon.</p> <p>Each rollup door shall have a 3.00 inch diameter balancer/tensioner drum to assist in lifting the door. A garage door style shall not acceptable.</p> <p>The header for the rollup door assembly shall not exceed 4.00".</p>		

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	Bidder Complies	
	Yes	No
<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 roll-up door compartment above the rear tailboard shall be provided.</p> <p>Interior dimensions of this compartment shall be 36.75" wide x 36.38" high x 25.88" deep in the lower 28.00" of the compartment and 15.75" deep in the remaining upper portion. Depth of the compartment shall be calculated with the compartment door closed.</p> <p>A 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. The transverse opening shall be a minimum of 22.00" wide x 27.75" high.</p> <p>Clear door opening of this compartment shall be 33.50" wide x 27.38" 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>ROLL-UP DOOR, REAR COMPARTMENT</u></p> <p>The rear compartment shall have a swing down tailboard as the lower section of the door and a roll door for the upper section. The door shall be, double faced, aluminum construction, satin aluminum and manufactured by AMDOR™ brand roll-up doors.</p> <p>The door shall be constructed using 1.00" extruded double wall aluminum slats which shall feature a flat smooth interior surface to provide maximum protection against equipment hang-up. The slats shall be connected with a structural driven ball and socket hinge designed to provide maximum curtain diaphragm strength. Mounting and adjusting the curtain shall be done with a clip system that connects the curtain to the balancer drum allowing for easy tension adjustment without tools. The slats shall be mounted in reusable slat shoes with positive snap-lock securement.</p> <p>Each slat shall incorporate weather tight recessed dual durometer seals. One (1) fin shall be designed to locate the seal within the extrusion. The second shall serve as a wiping seal which shall also allow for compression to prevent water ingress.</p> <p>The door shall be mounted in a one (1)-piece aluminum side frame with recessed side seals to minimize seal damage during equipment deployment. All seals including side frames, top gutters and bottom panel are to be manufactured utilizing non-marring materials.</p> <p>Bottom panel flange of roll-up door shall be equipped with two (2) cut-outs to allow for easier access with gloved hands.</p>		

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	Bidder Complies	
	Yes	No
<p>A stainless steel lift bar to be provided for opening the door and located at the bottom of each door with latches on the outer extrusion of the door frame. A ledge to be supplied over lift bar for additional area to aid in closing the door. The lift bar shall be located at the bottom of door with striker latches installed at the base of the side frames. Side frame mounted door strikers shall include support beneath the stainless steel lift bar to prevent door curtain bounce, improve bottom seal life expectancy and to avoid false door ajar signals.</p> <p>All injection molded roll-up door wear components shall be constructed of Type 6 nylon.</p> <p>The door shall have a 3.00 inch diameter balancer/tensioner drum to assist in lifting the door (garage door style) shall not acceptable.</p> <p>The header for the roll-up 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>SCUFFPLATE</u></p> <p>A polished stainless steel scuffplate shall be furnished around the opening for the fuel fill door to prevent chipping and fuel stain.</p> <p><u>SCUFFPLATE</u></p> <p>A polished stainless steel stainless steel scuffplate shall be provided around the ladder storage compartment opening.</p> <p><u>SCUFFPLATE</u></p> <p>A stainless steel scuffplate shall be furnished around the opening for all of the air bottle compartments.</p> <p><u>SCUFFPLATE, PIKE POLE COMPARTMENT</u></p> <p>Two (2) scuffplates shall be provided around the pike pole compartment opening(s). The scuffplate(s) shall be polished stainless steel .</p> <p><u>COMPARTMENT LIGHTING</u></p> <p>There shall be seven (7) compartment(s) 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 compartment(s): on the inside lip of each equipment compartment (D1, D2, D3, P1, P2, P3, R1).</p> <p>Any remaining compartments without light strips shall have a 6.00" diameter Truck-Lite, Model: 79384 light. Each light shall have a number 1076 one filament, two wire bulb.</p> <p>Opening the compartment door shall automatically turn the compartment lighting on.</p>		

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	Bidder Complies	
	Yes	No
<p><u>HATCH COMPARTMENTS</u></p> <p>Hatch compartments with two (2) lift-up, top opening hatch doors shall be provided above the driver and passenger side body compartments. Each hatch compartment shall extend the full length of the side body compartmentation x 21.00" wide x 22.00" maximum depth. The compartments shall extend the full length of the side body compartmentation except for a 20.00" recessed step area at the rear of the compartment on the access ladder side.</p> <p>Sides of the compartments shall be constructed of the same material as the body and painted job color on the outside panels.</p> <p>Top of the compartments shall be constructed of bright aluminum treadplate.</p> <p>Two (2) lift-up, bright aluminum treadplate doors shall be provided on the top of each hatch compartment. Each door shall have a lever handle with a slam style latch to hold the doors in the closed position.</p> <p>These double pan doors shall have lipped edges with a rubber seal for weather resistance.</p> <p>Doors shall be hinged on the outboard side and shall be held open with pneumatic stay arms.</p> <p>The compartments shall have a 3/4" drain that extends to below the body.</p> <p>Ribbed rubber matting shall be provided on the compartment floor to stop wet equipment from sitting in water pools.</p> <p><u>HATCH COMPARTMENT LIGHTING</u></p> <p>There shall be LED strip lights mounted full length on the interior, hinged side of each compartment.</p> <p>Opening the hatch compartment door shall automatically turn the hatch compartment lighting on.</p> <p><u>MOUNTING TRACKS</u></p> <p>There shall be recessed tracks installed vertically to support the adjustable shelf(s).</p> <p>Tracks shall not protrude into any compartment in order to provide the greatest compartment space and widest shelves possible.</p> <p>The tracks shall be provided in each compartment except for the one that contains the pump operator's panel.</p> <p><u>ADJUSTABLE SHELVES</u></p> <p>There shall be 11 shelves, with a capacity of 500 lb. provided. The shelf construction shall consist of .188" thick brushed aluminum with 2.00" sides. Each shelf shall be infinitely adjustable by means of a threaded fastener, which slides in a track.</p>		

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	Yes	No
<p>The shelves shall be held in place by .12" thick stamped plated brackets and bolts.</p> <p>The location shall be two (2) in each full height compartment (D1, D3, P1 one up and one low, P3 one up and one low) and one (1) in each highside compartment (D2, P2) and one (1) in R-1.</p> <p><u>SLIDE-OUT ADJUSTABLE HEIGHT TRAY</u></p> <p>There shall be three (3) slide-out trays provided.</p> <p>Each tray shall have 2.00" high sides and a capacity rating of up to 500 lb. in the extended position.</p> <p>Each tray shall be mounted on a pair of side mounted slides. The slide mechanisms shall have ball bearings for ease of operation and years of dependable service. The slides shall be mounted to shelf tracks to allow the tray to be adjustable up and down within the designated mounting location.</p> <p>An automatic lock shall be provided for both the in and out tray positions. The lock trip mechanism shall be located at the front of the tray and shall be easily operated with a gloved hand.</p> <p>The tray(s) shall be located one (1) in the lower section of D-1, P-1, and P-3.</p> <p><u>MATTING, COMPARTMENT FLOOR</u></p> <p>Turtle Tile compartment matting shall be provided in seven (7) compartments on the compartment floor. The locations are, in each equipment compartment.</p> <p>The Turtle Tile shall be red 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 14 shelves. The locations are, in each shelf and slide-out tray.</p> <p>The color of Turtle Tile shall be red.</p> <p><u>EQUIPMENT STORAGE</u></p> <p>An equipment storage area shall be provided to house two (2) backboards the customer will store one (1) Ferno Model 71 Stokes Basket and the backboards will be stored inside the Ferno Stokes Basket. Flip Storage from standard door open into the Crosslay, and sized for additional items such as long tools, or a stokes basket. It shall be located above the crosslays.</p> <p>This storage area shall be a fabricated aluminum enclosure. Slides for two backboards shall be provided. No additional equipment mounts or brackets shall be provided. There shall be a</p>		

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	Bidder Complies	
	Yes	No
<p>vertically hinged treadplate door on the driver's side and passenger's side of the truck to provide access.</p> <p>The enclosure shall be removable for access to the plumbing.</p> <p><u>RUB RAIL</u> Bottom edge of the side compartments shall be trimmed with a bright aluminum extruded rub rail.</p> <p>Trim shall be 3.12" high with 1.50" 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>Rub rails shall be attached with bolts and spaced from the body with isolators that shall help to absorb any moderate impact without damaging the body.</p> <p><u>BODY FENDER CROWNS</u> Polished stainless steel fender crowns shall be provided around the rear wheel openings.</p> <p>A brushed stainless steel unpainted fender liner shall be provided to avoid paint chipping. The liners shall be removable to aid in the maintenance of rear suspension components.</p> <p>A dielectric barrier shall be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.</p> <p>The fender crowns shall be held in place with stainless steel screws that thread directly into a composite nut and not directly into the parent body sheet metal to eliminate dissimilar metals contact and greatly reduce the chance for corrosion.</p> <p><u>HARD SUCTION HOSE</u> Hard suction hose shall not be required.</p> <p><u>HANDRAILS</u> Handrails shall be located on the front of the body in positions needed to meet NFPA requirements.</p> <ul style="list-style-type: none"> • Two (2) vertical handrails shall be located at the rear, one on each side of the rear compartment . <p>- One (1) handrail, chrome plated grab handle, shall be provided mounted locate left rear of HB cover (see blue tape).</p>		

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	Yes	No
<ul style="list-style-type: none"> Four (4) handrails shall be provided mounted one (1) each side underneath the windshield and one (1) each side at a 45 degree angle on each rear facing seat riser so as to match the previous unit. <p><u>AIR BOTTLE STORAGE (SINGLE BOTTLE)</u></p> <p>A total of three (3) air bottle compartments shall be provided. 1-DS (left) rear fender near fuel fill, 2- PS (Right) one ahead of rear wheel and one behind. The air bottle compartment shall be in the form of a round tube (7.63" diameter minimum) and of adequate depth to accommodate different size air bottles. Flooring shall be rubber lined and have a drain hole. A stainless steel door with a chrome plated 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><u>AIR BOTTLE STORAGE (SINGLE)</u></p> <p>A quantity of one (1) air bottle compartment, approximately 7.50" wide x 7.50" tall x 26.00" deep, shall be provided on the driver side forward of the rear wheels. The full width double door shall cover the air bottle opening and the DEF tank access.. The compartment will be square with angled corners. A polished stainless steel 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 Dura-Surf friction reducing material shall be provided.</p> <p><u>EXTENSION LADDER</u></p> <p>There shall be a 24', two-section, aluminum, Duo-Safety, Series 900-A extension ladder provided.</p> <p><u>ROOF LADDER</u></p> <p>There shall be a 14' aluminum, Duo-Safety, Series 775-A roof ladder provided.</p> <p><u>LADDER STORAGE</u></p> <p>The ladders shall be stored inside the upper section of the passenger's side compartments. This ladder rack shall reduce the depth of the upper section in the side compartments.</p> <p>A partition shall be installed inside the compartment on the side of the rack to allow for equipment storage and to conceal the ladders.</p> <p>The ladders shall be banked in separate storage troughs.</p> <p>The ladder storage assembly shall be fabricated of stainless steel track channels to aid in loading and removal of ladders.</p> <p>Rear of the ladder storage area shall have a vertically hinged smooth aluminum door with a D-handle latch to contain the ladders.</p>		

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	Bidder Complies	
	Yes	No
<p><u>FOLDING LADDER</u> One (1) 10' aluminum, Series 585-A Duo-Safety folding ladder shall be installed in the passenger side pike pole/folding ladder compartment.</p> <p><u>PIKE POLE 8 FT</u> There shall be one (1) Fire Hooks Unlimited APH-8, 8 foot pike pole(s) with fiberglass handles and gas shut off end provided in the left (driver's) side pike pole compartment.</p> <p><u>PIKE POLE, 6'</u> There shall be one (1) Fire Hooks Unlimited #APH-6, 6 foot pike pole(s) with fiberglass handles provided and located in the left (driver's) side pike pole compartment.</p> <p><u>FOLDING LADDER/PIKE POLE COMPARTMENTS</u> One (1) folding ladder compartment shall be provided, recessed in the upper, inside part of body compartment on the passenger side. The compartment shall be equipped with a stainless steel trough for the folding ladder. The door shall be made of polished stainless steel and have a lift and turn latch.</p> <p>One (1) pike pole compartment shall be provided, recessed in the upper, inside part of body compartment on the driver side. The compartment shall be equipped with two (2) aluminum tubes to hold two (2) pike poles. The door shall be made of polished stainless steel and have a lift and turn latch.</p> <p><u>FMVSS LABEL IN CAB (ADDITIONAL)</u> An additional FMVSS yellow label shall be provided and attached to the driver's side cab door stainless steel panel. The label shall be enlarged to an 8.50" x 11.00" size and installed as far to the inside as possible, next to the web strap of the door.</p> <p><u>LADDER, TOP ACCESS</u> A wide easy climbing access ladder, constructed of aluminum rungs and extruded aluminum rails, shall be provided on the left side at the rear of the apparatus. The inside climbing area of the ladder shall be 13.75" wide</p> <p>The lower section of the ladder shall be retractable into the upper section to eliminate interference with the rear FMVSS lights. When lowered the bottom rung shall be lower than the body, approximately 16.00" to 20.00" from the ground to allow a lower first step height.</p> <p>The ladder shall be slanted when in use for easy access, and fold against the body for storage to reduce the overall length. Corrosion resistant, stainless steel spring-loaded locks shall hold the ladder in place.</p>		

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	Bidder Complies	
	Yes	No
This ladder shall activate the Do Not Move Truck indicator, in the cab, if not in the stowed position when the parking brake is disengaged.		

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	Bidder Complies	
	Yes	No
<p><u>PUMP</u></p> <p>Pump shall be a, low profile, 1250 gpm single stage midship mounted centrifugal type, mounted below the cab. The pump shall have a 15 percent reserve capacity to allow for extended time between pump rebuild. To ensure efficient pump/vehicle design the capacity to weight ratio shall not be less than 1.5:1.</p> <p>The pump casing shall consist of three (3) discharge outlets, one (1) to each side in line with the impeller and one (1) to the rear. The pump casing shall incorporate two (2) water strippers to maintain radial balance.</p> <p>Pump shall be the Class A type.</p> <p>Pump shall be certified to deliver the percentage of rated discharge from draft at pressure indicated below:</p> <ul style="list-style-type: none"> - 100 percent of rated capacity at 150 psi net pump pressure -70 percent of rated capacity at 200 psi net pump pressure -50 percent of rated capacity at 250 psi net pump pressure <p>The pump shall have the capacity to deliver the percentage of rated discharge from a pressurized source as indicated below:</p> <ul style="list-style-type: none"> - 135 percent of rated capacity at 100 psi net pump pressure from a 5 psi source <p>Pump body shall be fine-grained gray iron. Pump shall incorporate a heater/cooling jacket integral to the pump housing.</p> <p>The impeller shall be high strength vacuum cast bronze alloy, accurately machine balanced and splined to a ten (10) spline stainless steel pump shaft for precision fit, exceptional durability, and efficiency. Double replaceable reverse flow labyrinth type bronze wear ring design shall help to minimize end thrust. The impeller shall be a twisted vane design to create higher lift. No keyed shafts shall be acceptable.</p> <p>The pump shall include o-ring gaskets throughout the pump.</p> <p>Deep groove radial type oversize ball bearings shall be provided. The bearings shall be protected at the openings from road dirt and water with an oil seal and water slinger.</p> <p>The pump shall have a flat, patterned area on the top of the pump intake wye to allow standing for plumbing maintenance. The main inlet manifold shall be 6.00" in diameter and shall have a low profile design to facilitate low crosslays and high flows.</p>		

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<p>For ease of service, the pump housing, intake wye, impeller, mechanical seal, and gear case shall be accessible from above the chassis frame by tilting the cab. The intake wyes shall be removable without having to remove the main intake casting. Removal of the main inlet wyes shall provide access to the impeller, mechanical seal, and wear ring. (no exception).</p> <p>The tank to pump line and the primary discharge line shall be the only piping required to be removed for overhaul.</p> <p>For ease of service and overhaul there shall be no piping or manifolding located directly over the pump. (no exception)</p> <p><u>PUMP MOUNTING</u></p> <p>Pump shall be mounted to the chassis frame rails directly below the crew cab, to minimize wheelbase and facilitate service, using rubber isolators in a modified V pattern that include two (2) central mounted isolators located between the frame rails, and one (1) on each side outside the frame rails. The mounting shall allow chassis frame rails to flex independently without damage to the fire pump. Each isolator shall be 2.55" in total outside diameter and shall be rated at 490 lb. The pump shall be completely accessible by tilting the cab with no piping located directly above the pump.</p> <p><u>MECHANICAL SEALS</u></p> <p>Silicon carbide mechanical seals shall be provided. The seals shall be spring loaded and self-adjusting. The seals shall have a minimum thermal conductivity of 126 W/m*K to run cooler. Seals shall have a minimum hardness of 2800 kg/mm² to be more resistant to wear, and have thermal expansion characteristics of no more than 4.0 X10⁻⁶mm/mm*K to be more resistant to thermal shock.</p> <p><u>PUMP GEARCASE</u></p> <p>Pump gearcase shall be a pressure-lubricated gearcase to cool, lubricate, and filter the oil. The gearcase shall include an auxiliary PTO opening. The gearcase shall be constructed of lightweight aluminum, and impregnated with resin in accordance to MIL Spec MIL-I-17563. A dipstick, accessible by tilting the cab, shall be provided for easy fluid level checks. A filter screen shall be provided for long life.</p> <p>The gearcase shall consist of two (2) gears to drive the pump impeller and one (1) for the auxiliary PTO.</p> <p>The auxiliary PTO opening shall provide for the addition of PTO driven accessories.</p> <p>The pump shall be driven through the rear engine power take-off and clutch. The rear engine power take-off drive shall be live at all times to allow for pump and roll applications. Rear engine power take-off's allow for high horsepower and torque ratings needed for large pump</p>		

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	Bidder Complies	
	Yes	No
<p>applications, and is a proven drive system throughout the rugged construction industry. (no exception).</p> <p><u>CLUTCH</u></p> <p>There shall be a heavy-duty electric clutch mounted directly to the front of the pump to engage and disengage the pump without gear clash. The clutch shall be a multiple disc design for maximum torque. The clutch shall be fully self-adjusting to provide automatic wear compensation, and consistent torque throughout the life of the clutch. Positive engagement and disengagement shall be provided through a high efficient and dependable magnetic system to assure superior performance. The clutch shall have a 500 lb-ft rating. Clutch shall be of a time-tested design used in critical military applications. (no exception).</p> <p><u>PUMPING MODE</u></p> <p>Pump shall provide for both pump and roll mode and stationary pumping mode.</p> <p>Stationary pumping mode shall be accomplished by stopping the vehicle, setting the parking brake and engaging the water pump switch on the cab switch panel. The transmission shall shift to "Neutral" range automatically when the parking brake is set. The "OK to Stationary Pump" indicator shall also illuminate when the parking brake is set. If the vehicle is equipped with a foam system or CAFS system, these systems shall be engaged from the cab switch panel as well.</p> <p>Pump and roll mode shall be accomplished by the use of the main pump and shall not require the use of a secondary pump. The "OK to Pump & Roll" indicator shall be illuminated when the vehicle is in first gear. If pump and roll is desired by the operator, the operator shall engage the "Pump & Roll" and "Water Pump" switches on the cab switch panel. There shall be an automatic opening tank to pump valve and an automatic opening recirculation valve with the pump and roll mode so the operator does not have to leave the cab. The foot throttle shall be applied by the operator as needed. There shall be a 1200 engine rpm limit when in the pump and roll mode.</p> <p>Stopping pump and roll mode shall be accomplished by stopping the vehicle and setting the parking brake. The "OK to Pump & Roll" indicator shall turn off, the "OK to Stationary Pump" indicator shall illuminate and the transmission shall automatically shift to neutral.</p> <p>Stopping the stationary pump mode shall be accomplished by pressing the "Water Pump" switch down to disengage the pump.</p> <p><u>PUMP SHIFT</u></p> <p>Pump shall be engaged in not more than two steps, by simply setting the parking brake, which shall automatically put the transmission into neutral, and activating a rocker switch in the cab. Switches in the cab shall also allow for water, foam, or CAFS if equipped, and activate the appropriate system to preset parameters. The engagement shall provide simple two-step</p>		

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	Bidder Complies	
	Yes	No
<p>operation, enhance reliability, and completely eliminate gear clash. The shift shall include the indicator lights as mandated by NFPA. A direct override switch shall be located behind a door in the lower pump operator's panel. The switch shall automatically disengage when the door is closed.</p> <p>As the parking brake is applied, the pump panel throttle shall be activated and deactivate the chassis foot throttle for stationary operation.</p> <p>Pump and roll operation shall be available by releasing the parking brake with the pump in the pumping mode. Releasing the parking brake shall activate the chassis foot throttle, and deactivate the pump panel throttle. To protect from accidental pump overheating, the pump shall automatically disengage when the truck transmission shifts into second gear.</p> <p><u>TRANSMISSION LOCK UP</u></p> <p>Transmission lock up is not required as transmission shall automatically shift to neutral as soon as the parking brake is set.</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. A water-to-coolant heat exchanger shall be used.</p> <p><u>INTAKE RELIEF VALVE</u></p> <p>An Akron 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 200 psig.</p> <p>Outlet shall terminate below the frameroils 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 the right (passenger's) side pump panel.</p> <p><u>PRESSURE CONTROLLER</u></p> <p>A Pressure Governor shall be provided. An electric pressure governor shall be provided which is capable of automatically maintaining a desired preset discharge pressure in the water pump. When operating in the pressure control mode, the system shall automatically maintain the discharge pressure set by the operator (within the discharge capabilities of the pump and water supply) regardless of flow, within the discharge capacities of the water pump and water supply.</p> <p>A pressure transducer shall be installed in the water discharge of the pump. The transducer continuously monitors pump pressure sending a signal to the Electronic Control Module (ECM).</p> <p>The governor can be used in two (2) modes of operation, RPM mode and pressure modes.</p>		

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	Bidder Complies	
	Yes	No
<p>In the RPM mode, the governor can be activated after vehicle parking brake has been set. When in this mode, the governor shall maintain the set engine speed, regardless of engine load (within engine operation capabilities).</p> <p>In the pressure mode, the governor system can only operate after the fire pump has been engaged and the vehicle parking brake has been set. When in the pressure mode, the pressure controller monitors the pump pressure and varies engine speed to maintain a precise pump pressure. The pressure controller shall use a quicker reacting J1939 database for engine control (excluding Cat engines).</p> <p>A preset feature allows a predetermined pressure or rpm to be set.</p> <p>A pump cavitation protection feature is also provided which shall return the engine to idle should the pump cavitate. Cavitation is sensed by the combination of pump pressure below 30 psi and engine speed above 2000 rpm for more than five (5) seconds.</p> <p>The throttle shall be a vernier style control, with a large control knob for use with a gloved hand. A throttle ready light shall be provided adjacent to the throttle control. A large .75" RPM display shall be provided to be visible at a glance.</p> <p>Check engine, and stop engine indicator lights shall be provided for easy viewing.</p> <p>Large .75" push buttons shall be provided for menu, mode, preset, and silence selections.</p> <p>The water tank level indicator shall be incorporated in the pressure governor.</p> <p>A fuel level indicator shall be incorporated in the pressure controller.</p> <p>A pump hour meter shall be incorporated in the pressure controller.</p> <p>The pressure controller shall incorporate monitoring for engine temperature, oil pressure, fuel level alarm, and voltage. Pump monitoring shall include, pump gearcase temperature, error codes, diagnostic data, pump service reminders, and time stamped data logging, to allow for fast accurate trouble shooting. It shall also notify the driver/engineer of any problems with the engine and the apparatus. Complete understandable messages shall be provided in a 20-character display, providing for fewer abbreviations in the messages. An automatic dim feature shall be included for night operations.</p> <p>The pressure controller shall include a USB port for easy software upgrades, which can be downloaded through a USB memory stick, eliminating the need for a laptop for software installations.</p> <p>A complete interactive manual shall be provided with the pressure controller.</p>		

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	Bidder Complies	
	Yes	No
<p><u>PRIMING PUMP</u></p> <p>The priming pump shall be a Trident Emergency Products compressed air powered, high efficiency, multistage venturi based AirPrime System, conforming to standards outlined in the current edition of NFPA 1901.</p> <p>All wetted metallic parts of the priming system are to be of brass and stainless steel construction.</p> <p>One (1) priming control shall open the priming valve and start the pump primer.</p> <p><u>THERMAL RELIEF VALVE</u></p> <p>A thermal relief valve shall be included on the pump that monitors pump water temperature and opens to relieve water to cool the pump when the temperature of the pump water exceeds 120 Degrees F (49 C).</p> <p>The thermal protection system shall include an amber warning light and audible alarm mounted on the pump operator panel.</p> <p>The discharge line shall be 3/8 inch diameter tubing plumbed to ground.</p> <p><u>PUMP MANUALS</u></p> <p>Two (2) pump manuals from the pump manufacturer shall be furnished in compact disc format with the apparatus. Manuals shall cover pump operation, maintenance, overhaul, and parts.</p> <p><u>PLUMBING</u></p> <p>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. Small diameter secondary plumbing such as drain lines shall be stainless steel, brass or hose.</p> <p>Where vibration or chassis flexing may damage or loosen piping or where a coupling is required for servicing, the piping shall be equipped with victaulic or rubber couplings.</p> <p>Plumbing manifold bodies shall be ductile cast iron or stainless steel.</p> <p>All lines shall drain through 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.</p> <p>All water carrying gauge lines shall be of flexible polypropylene tubing.</p> <p><u>MAIN PUMP INLETS</u></p> <p>A 6.00" pump manifold inlet shall be provided on each side of the vehicle. The suction inlets shall include removable die cast zinc screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.</p>		

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	Bidder Complies	
	Yes	No
<p>Main pump inlets shall not be located on the main operator's panel and shall maintain a low connection height by terminating below the top of the chassis frame rail.</p> <p>The main pump inlets shall have National Standard Threads with a long handle chrome cap.</p> <p>The cap shall be the VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>VALVES</u></p> <p>All ball valves shall be Akron® Brass in-line valves. The Akron valves shall be the 8000 series heavy-duty style with a stainless steel ball and a simple two-seat design. No lubrication or regular maintenance is required on the valve.</p> <p>Valves shall have a ten (10) year warranty.</p> <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>The location of the valve for the one (1) inlet shall be recessed 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>INLET CONTROL</u></p> <p>Control for the side auxiliary inlet(s) shall be located at the inlet valve.</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" stainless steel pipe and a 5.00" butterfly valve. Only radiused elbows shall be used in the piping, no mitered joints.</p> <p>Drains are 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> <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>		

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	Bidder Complies	
	Yes	No
<p>There shall be an Akron 9323 electric valve controller provided. The controller unit shall be of true position feedback design, requiring no clutches in the motor or current limiting. The controller shall be completely sealed with two (2) button open and close valve position capability and a full color LCD display with backlight.</p> <p>A manual override shall be provided on the valve. A stainless steel door located on the passenger side pump panel shall be provided for access to the manual override.</p> <p>A momentary toggle switch shall be provided behind the stainless steel access door near the manual override. The switch shall cut off power to the valve to allow for manual valve actuation.</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>The front inlet shall have National Standard hose threads with a long handle chrome plated cap.</p> <p>The cap shall be the VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p>The front suction shall have a 6.00" swivel with National Standard hose threads and a long handle chromed plated cap.</p> <p><u>INLET (REAR)</u></p> <p>A 5.00" inlet with screen shall be provided using 5.00" piping and a 5.00" butterfly valve.</p> <p>The screen shall provide cathodic protection against corrosion in the piping.</p> <p>The piping shall contain only large radiused elbows, no mitered joints.</p> <p>The plumbing shall be routed to the rear below the water tank, between the frame rails, up the rear wall of the tank and into the passenger's side rear compartment.</p> <p>The inlet shall terminate at the passenger's side rear bulkhead.</p> <p>A bleeder valve shall be located at the threaded connection.</p> <p>The rear suction shall have a National Standard hose thread adapter with a rocker lug chrome plated cap.</p> <p>The cap shall be the VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected. (no exception)</p>		

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	Bidder Complies	
	Yes	No
<p><u>REAR INLET CONTROL</u></p> <p>The rear 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 Akron 9323 electric valve controller provided. The controller unit shall be of true position feedback design, requiring no clutches in the motor or current limiting. The controller shall be completely sealed with two (2) button open and close valve position capability and a full color LCD display with backlight.</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 framerails.</p> <p>A .75" bleeder shall be provided.</p> <p><u>ELBOW, REAR INLET</u></p> <p>The inlet, located at the rear of the apparatus, shall be furnished with a 5.00" (F) National Standard hose thread x 4.00" Kochek K-Coat Storz elbow/adapter with a Storz cap.</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. 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 tank to pump line shall have a 3.00" Akron 8800 series full flow ball valve with "R-1" style handle. This valve shall be controlled by an air actuated cylinder. The cylinder shall be large enough to assure positive opening and closing of the valve. The controls shall be located on the left pump operator's panel, be properly labeled as its function and feature "green" valve open and "green" valve closed indicator lights.</p> <p>A 3.00" one-way full flow check valve shall be provided in the tank suction line to prevent back flow to the tank.</p>		

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	Bidder Complies	
	Yes	No
<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) discharges with a 2.50" valves on the left side of the apparatus, terminating with a 2.50"(M) National Standard hose thread adapter. Discharges shall be located below the cab, and shall be no higher than the top of the chassis frame rail. Discharges shall not be located on the pump operator's panel. Lever controls shall be provided at the valve.</p> <p><u>DISCHARGE OUTLETS (RIGHT SIDE)</u> There shall be one (1) discharge outlet with a 2.50" valve on the right side of the apparatus, terminating with a male 2.50" National Standard hose thread adapter. The discharge shall be located below the crew cab, and shall be no higher than the top of the chassis frame rail.</p> <p>There shall be an Akron® 9325 Navigator Pro electric valve controller provided at the pump panel. The controller unit shall be of true position feedback design, requiring no clutches in the motor or current limiting. The controller shall be completely sealed with two (2) button open and close valve position capability and a full color LCD display with backlight. In addition to valve position, each controller shall include a pressure display.</p> <p><u>DISCHARGE OUTLET, LARGE DIAMETER</u> There shall be a 4.00" discharge outlet with a 4.00" Akron valve body installed on the right side of the apparatus, terminating with a male 4.00" National Standard hose thread. The discharge shall be located below the crew cab, and shall be no higher than the top of the chassis frame rail.</p> <p>There shall be an Akron 9325 Navigator Pro electric valve controller provided at the pump panel. The controller unit shall be of true position feedback design, requiring no clutches in the motor or current limiting. The controller shall be completely sealed with two (2) button open and close valve position capability and a full color LCD display with backlight. In addition to valve position, each controller shall include a pressure display.</p> <p><u>FRONT BUMPER TURRET PLUMBING</u> Plumbing consisting of 2.00" piping and flexible hose from the pump house to the driver's side front bumper shall be provided. A fabricated weldment made of stainless steel pipe shall be used in the plumbing where appropriate.</p> <p>There shall be Trident swing handle drains provided at all low points of the piping.</p> <p><u>BUMPER TURRET</u> One (1) Akron 3463 Firefox electrically controlled monitor shall be provided on the front bumper extension. The monitor shall be capable of quick disconnect from the bumper extension.</p>		

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<p>The monitor shall be provided with an Akron 3293 125-350 gpm @ 100 psi adjustable nozzle. Control for the monitor shall be a surface mounted joystick located between the driver and officer.</p> <p>The turret shall have a horizontal rotation of 180 degrees and operate from 90 degrees above to 45 degrees below horizontal. The horizontal rotation shall be driven by a 12 volt DC direct drive motor/actuator.</p> <p>The monitor base with 2.00" plumbing and an electric 2.00" full flow ball valve shall be provided at the front bumper extension. The valve shall be activated by the turret controls in the cab.</p> <p><u>DISCHARGE CAPS</u> Chrome plated, rocker lug, caps with chains shall be furnished for all side discharge outlets.</p> <p>The caps shall be the VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected (no exception).</p> <p><u>OUTLET BLEEDER VALVE</u> A 0.75" bleeder valve shall be provided for each outlet 1.50" or larger. Automatic drain valves are acceptable with some outlets if deemed appropriate with the application.</p> <p>The valves shall be located behind the panel with a 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>LARGE DIAMETER OUTLET ELBOWS</u> The 4.00" outlet shall be furnished with a 4.00"(F) National Standard hose thread x 4.00" Storz elbow adapter with Storz cap.</p> <p><u>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 or an indicator shall be provided to show when the valve is closed.</p> <p>The passenger side discharges shall be controlled by an Akron 9325 Navigator Pro electric valve controllers with the manual override located on the passenger side pump panel. The controller unit shall be of true position feedback design, requiring no clutches in the motor or current</p>		

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<p>limiting. The controller shall be completely sealed with two (2) button open and close valve position capability and a full color LCD display with backlight. In addition to valve position, each controller shall include a pressure display.</p> <p>All other outlets shall have manual swing handles that operate in a vertical up and down motion. These handles shall be able to lock in place to prevent valve creep under pressure.</p> <p><u>DELUGE RISER</u></p> <p>A 3.00" deluge riser shall be installed above the pump in such a manner that a monitor can be mounted and used effectively. 3.00" piping shall be installed securely so no movement develops when the line is charged. A 2.50" gated valve shall be installed and controlled at the pump operator's panel. The deluge outlet shall flow a minimum 1000 GPM.</p> <p><u>MONITOR</u></p> <p>An Akron Model 3431 Apollo Hi-Riser monitor shall be properly installed on the deluge riser.</p> <p>A fixed mounting base and a portable base with one (1) 4.00" Storz inlet shall be provided.</p> <p>A position sensor shall be provided on the monitor that shall activate the "do not move apparatus" light inside the cab when the monitor is in the raised position.</p> <p>The monitor shall be painted to match the body.</p> <p><u>NOZZLE, DELUGE</u></p> <p>Akron model #2499 Quad Stacked pyrolite deluge tips shall be provided.</p> <p>The tip sizes shall be 1.375", 1.50", 1.75", and 2.00".</p> <p>This shall include an Akron 3488 pyrolite stream shaper.</p> <p>The deluge riser shall have a 3.00" four (4)-bolt stainless steel flange for mounting the monitor.</p> <p><u>CROSSLAY HOSE BEDS</u></p> <p>Two (2) crosslays with 1.50" outlets shall be provided. Each bed to be capable of carrying 200 feet of 1.75" double jacketed hose and shall be plumbed with 2.00" i.d. schedule 10 304L welded or formed stainless steel pipe and gated with a 2.00" quarter turn ball valve. Threaded pipe shall not be acceptable. Crosslays shall be low mounted with the bottom of both crosslay trays no more than 11.00" above the frame rails for simple, safe reloading and deployment. (no exception)</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>		

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	Bidder Complies	
	Yes	No
<p>A removable tray shall be provided for the crosslay hosebed. The crosslay tray shall be constructed of black poly to provide a lightweight sturdy tray. Two (2) hand holes shall be in the floor and additional hand holes shall be provided in the sides for easy removal and installation from the compartment. The floor of the trays shall be perforated to allow for drainage and hose drying. Trays shall be held in place by a mechanical spring loaded stainless steel latch that automatically deploys upon loading the trays to hold the trays in place during transit.</p> <p><u>CROSSLAY HOSE BED, 2.50"</u></p> <p>One (1) crosslay with a 2.50" outlet shall be provided. The bed to be capable of carrying 200' of 2.5" hose and shall be plumbed with 2.50" i.d. schedule 10 304L welded or formed stainless steel pipe and gated with a 2.50" quarter turn ball valve. Threaded pipe shall not be acceptable.</p> <p>The outlet to be equipped with a 2.50" National Standard hose thread 90 degree swivel located above the hose bed so that hose may be removed from either side of apparatus.</p> <p>The crosslay shall be mounted above the lower 1.5" crosslays. The crosslay controls shall be at the pump operator's panel.</p> <p>A removable tray shall be provided for the crosslay hosebed. The crosslay tray shall be constructed of black poly to provide a lightweight sturdy tray. Two (2) hand holes shall be in the floor and additional hand holes shall be provided in the sides for easy removal and installation from the compartment. The floor of the trays shall be perforated to allow for drainage and hose drying. Tray shall be held in place by a mechanical spring loaded stainless steel latch that automatically deploys upon loading the tray to hold the trays in place during transit.</p> <p><u>CROSSLAY/DEADLAY HOSE RESTRAINT</u></p> <p>A black 1.00" nylon webbing design with 2.00" box pattern shall be provided across each end of three (3) crosslay/deadlay(s) to secure the hose during travel. The webbing shall be permanently attached at the front of the crosslay/deadlay bed. Two (2) vertical metal bars the height of the crosslay/deadlay bed shall hook onto footman loops at the top of the bed and 1.00" web straps shall loop through footman loops located at the bottom of the crosslay/deadlay bed. The straps shall attach to the bottom of the bar with a 1.00" side release fastener.</p>		

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	Yes	No
<p><u>FOAM PROPORTIONER</u></p> <p>A foam proportioning system shall be provided that is an on demand, automatic proportioning, single point, direct injection system suitable for all types of Class A and B foam concentrates, including the high viscosity (6000 cps), alcohol resistant Class B foams. Operation shall be based on direct measurement of water flow, and remain consistent within the specified flows and pressures. The system shall automatically balance and proportion foam solution at rates from .1 percent to 9.9 percent regardless of variations in water pressure and flow, up to the maximum rated capacity of the foam concentrate pump.</p> <p>The design of the system shall allow operation from draft, hydrant, or relay operation. This shall provide a versatile system to meet the demands at a fire scene.</p> <p><u>SYSTEM CAPACITY</u></p> <p>The system shall have the ability to deliver the following minimum foam solution flow rates that meet or exceed NFPA requirements at a pump rating of 250 psi.</p> <p>200 gpm @ 6 percent</p> <p>400 gpm @ 3 percent</p> <p>1200 gpm @ 1 percent</p> <p>The foam concentrate setting may be adjusted in .1 percent increments from .1 percent to 9.9 percent. Typical settings are .3 percent, .5 percent and 1.0 percent (The maximum capacity will be limited to the plumbing and water pump capacity).</p> <p><u>CONTROL SYSTEM</u></p> <p>The system shall be equipped with a digital electronic control display located on the pump operators panel. Push button controls shall be integrated into the panel to turn the system on/off, control the foam percentage, direct which foam to use on a multi-tank system, and to set the operation modes (automatic, manual, draft, calibration, or flush).</p> <p>The percent of injection shall have presets for Class A or Class B foam. These presets can be changed at the fire department as desired. The percent of injection shall be able to be easily changed at the scene to adjust to changing demands.</p> <p>In order to minimize the use of abbreviations and interpretations, system information shall be displayed on the panel by way of .50 tall LEDs that total 14 characters (two (2) lines of seven (7) each). System on and foam pump on indicator lights shall also be included. Information displayed shall include mode of operation (automatic, manual, draft, calibration, or flush), foam supply selected (Class A or Class B), water total, foam total, foam percentage, remaining gallons, and time remaining.</p>		

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<p>The control display shall direct a microprocessor, which receives input from the systems water flow meter while also monitoring the position of the foam concentrate pump. The microprocessor shall compare the values of the water flow versus the position/rate of the foam pump, to ensure the proportion rate is accurate. One (1) check valve shall be installed in the plumbing to prevent foam from contaminating the water pump.</p> <p><u>LOW LEVEL, FOAM TANK</u></p> <p>The control head shall display a warning message when the foam tank in use is below a quarter tank.</p> <p><u>HYDRAULIC DRIVE SYSTEM</u></p> <p>The foam concentrate pump shall be powered by a hydraulic drive system, which is automatically activated, whenever the vehicle water pump is engaged. A system that drives the foam pump via an electric motor shall not be acceptable. A large parasitic electric load used to power the foam pump can cause an overload of the chassis electrical system.</p> <p>Hydraulic oil cooler shall be provided to automatically prevent overheating of the hydraulic oil, which is detrimental to system components. The oil/water cooler shall be designed to allow continuous system operation without allowing hydraulic oil temperature to exceed the oil specifications.</p> <p>The hydraulic oil reservoir shall be of four (4) gallons minimum capacity and shall also be of sufficient size to minimize foaming and be located to facilitate checking oil level or adding oil without spillage or the need to remove access panels.</p> <p><u>FOAM CONCENTRATE PUMP</u></p> <p>The foam concentrate pump shall be of positive displacement, self-priming; linear actuated design, driven by the hydraulic motor. The pump shall be constructed of brass body; chrome plated stainless steel shaft, with a stainless steel piston. In order to increase longevity of the pump, no aluminum shall be present in its construction.</p> <p>A relief system shall be provided which is designed to protect the drive system components and prevent over pressuring the foam concentrate pump.</p> <p>The foam concentrate pump shall have minimum capacity for 12 gpm with all types of foam concentrates with a viscosity at or below 6000 cps including protein, fluoroprotein, AFFF, FFFP, or AR-AFFF. The system shall deliver only the amount of foam concentrate flow required, without recirculating foam back to the storage tank. Recirculating foam concentrate back to the storage tank can cause agitation and premature foaming of the concentrate, which can result in system failure. The foam concentrate pump shall be self-priming and have the ability to draw foam concentrate from external supplies such as drums or pails.</p>		

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<p><u>EXTERNAL FOAM CONCENTRATE CONNECTION</u></p> <p>An external foam pick-up shall be provided to enable use of a foam agent that is not stored on the vehicle. The external foam pick-up shall be designed to allow continued operation after the on-board foam tank is empty. The external foam pick-up shall be designed to allow use with training foam or colored water for training purposes.</p> <p><u>PANEL MOUNTED STRAINER/EXTERNAL PICK-UP CONNECTION</u></p> <p>A bronze body strainer/connector unit shall be provided. The unit shall be mounted to the pump panel. The external foam pick-up shall be one (1) 1.00" male connection with chrome-plated cap integrated to a 2.00" strainer cleanout cap. A check valve shall be installed in the pick-up portion of the cleanout cap. A basket style stainless steel screen shall be installed in the body of the strainer/connector unit. Removal of the 2.00" cleanout cap shall be all that is required to gain access to and remove the stainless steel basket screen. The strainer/connector unit shall be ahead of the foam concentrate pump inlet port to insure that all agent reaching the foam pump has been strained.</p> <p><u>PICK-UP HOSE</u></p> <p>A 1.00" flexible hose with an end for insertion into foam containers shall be provided. The hose shall be supplied with a 1.00" female swivel NST thread swivel connector. The hose shall be shipped loose.</p> <p><u>DISCHARGES</u></p> <p>The foam system shall be plumbed to the lower rear crosslay, lower front crosslay and front bumper turret.</p> <p><u>SYSTEM ELECTRICAL LOAD</u></p> <p>The foam proportioning shall not impose an electrical load on the vehicle electrical system any greater than five (5) amps at 12VDC.</p> <p><u>FOAM SUPPLY VALVE</u></p> <p>An electric valve shall be used for the foam supply valve. The foam supply valve shall be controlled at the foam system control head for ease of operation. The supply valve shall be electric, remote controlled, to eliminate air pockets in the foam tank supply hose.</p> <p><u>MAINTENANCE MESSAGE</u></p> <p>A message shall be displayed on the control head to advise when system maintenance needs to be performed. The message shall display interval for cleaning the foam strainer, cleaning for the water strainers, and changing the hydraulic oil.</p> <p><u>FLUSH SYSTEM</u></p> <p>The system shall be designed such that a flush mode shall be provided to allow the system to flush all foam concentrate with clear water. The flush circuit control logic shall ensure the foam</p>		

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<p>tank supply valve is closed prior to opening the flush valve. The flush valve shall be operated at the foam system control head for ease of operation. The valve shall be electrically controlled and located as close to the foam tank supply valve as possible. A manual flush drain valve shall be labeled and conveniently located.</p> <p><u>SINGLE FOAM TANK REFILL</u></p> <p>The foam system's proportioning pump shall be used to fill the Class A foam tank. This shall allow use of the auxiliary foam pick-up to pump the foam from pails or a drum on the ground into the foam tank. A foam shut-off switch shall be installed in the fill dome of the tank to shut the system down when the tank is full. The fill operation shall be controlled by a mode in the foam system controller stating TANK FILL. While the proportioner pump is filling the tank, the controller shall display FILL TANK. When the tank is full, as determined by the float switch in the tank dome, the pump shall stop and the controller shall display TANK FULL.</p> <p><u>FOAM CELL</u></p> <p>The foam tank shall be an integral portion of the polypropylene water tank. The cell shall have a capacity of 200 gallons of foam with the intended use of Class B. The brand of foam stored in this tank shall be Ansulite 3% X 6%. 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>A system of 1.00" foam tank drains shall be provided, integrated into the foam systems strainer and tank to foam pump valve management system. The tank to pump hoses running from the tank(s) to the panel mounted strainer shall 1.00" diameter. The foam system controller shall have a mode that allows for a given foam valve to be opened at will. Flow of foam from the tank valve to the strainer shall be usable as a tank drain mode.</p> <p>An adaptor shall be supplied, that allows the 1.00" foam intake screen to assembly to be used as a drain outlet. The standard supplied 1.00" foam pick up hose shall be attached to the screen assembly by way of the adapter. The drain mode shall allow the operator to open and close the tank valve as required from the control head, to drain foam and re-fill foam containers through the connected hose, without foam spillage beneath the vehicle.</p>		

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	Bidder Complies	
	Yes	No
<p><u>PUMP CONTROL PANELS (LEFT SIDE CONTROL)</u></p> <p>Pump controls and gauges shall be located midship at the left (driver's) side of the apparatus and properly identified.</p> <p>The main pump operator's control panel shall be completely enclosed and located in the forward section of the body compartment, to protect against road debris and weather elements. The pump operator's panels shall be no more than 31.00" wide, and made in four (4) sections with the center section easily removable with simple hand tools. For the safety of the pump operator, there shall be no discharge outlets or pump inlets located on the main pump operators panel.</p> <p>Layout of the pump control panel shall be ergonomically efficient and systematically organized. The upper section shall contain the master gauges. This section shall be angled down for easy visibility. The center section shall contain the pump controls aligned in two horizontal rows. The pressure control device, engine monitoring gauges, electrical switches, and foam controls (if applicable) shall be located on or adjacent to the center panel, on the side walls for easy operation and visibility. The lower section shall contain the outlet drains.</p> <p>Manual controls shall be easy moving 8" long lever style controls that operate in a vertical, up and down swing motion. These handles shall have a 2.25" diameter knob and be able to lock in place to prevent valve creep under any pressure. Bright finish bezels shall encompass the opening, be securely mounted to the pump operator's panel, and shall incorporate the discharge gauge bezel. Bezels shall be bolted to the panel for easy removal and gauge service. The driver's side discharges shall be controlled directly at the valve. There shall be no push-pull style control handles. (no exception)</p> <p>Identification tags for the discharge controls shall be recessed within the same bezel. The discharge identification tags shall be color coded, with each discharge having its own unique color.</p> <p>All remaining identification tags shall be mounted on the pump panel in chrome-plated bezels.</p> <p>All discharge outlets shall be color coded and labeled to correspond with the discharge identification tag.</p> <p>The pump panels for the midship discharge and intake ports shall be located ahead of the body compartments with no side discharge or intake higher than the frame rail. The pump panels shall be easily removable with simple hand tools.</p> <p>A recessed cargo area shall be provided at the front of the body, ahead of the water tank above the plumbing.</p>		

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	Bidder Complies	
	Yes	No
<p><u>PUMP PANEL CONFIGURATION</u></p> <p>The pump panel configuration shall be arranged and installed in an organized manner that shall provide user-friendly operation.</p> <p><u>PUMP AND GAUGE PANEL</u></p> <p>The pump operator's panel and gauge panels shall be constructed of stainless steel with a brushed finish.</p> <p>The side control panels shall be constructed of stainless steel with a brushed finish for durability and ease of maintenance.</p> <p><u>PUMP AND PLUMBING ACCESS</u></p> <p>Simple access to the plumbing shall be provided through the front of the body area by raising the cab for complete plumbing service and valve maintenance. Access to valves shall not require removal of operator panels or pump panels. Access for rebuilding of the pump shall not require removal of more than the tank to pump line and a single discharge line. This access shall allow for fast, easy valve or pump rebuilding, making for reduced out of service times. Steps shall be provided for access to the top of the pump.</p> <p>Access to the pump shall be provided by raising the cab. The pump shall be positioned such that all maintenance and overhaul work can be performed above the frame and under the tilted cab. The service and overhaul work on the pump shall not require the removal of operator panels or pump panels. Complete pump casing and gear case removal shall require no more than removal of the intake and discharge manifolds, driveline, coolers and a single discharge line. The pump case and gear case shall be able to be removed by lifting upward without interference from piping and be removable in less than 3 hours.</p> <p><u>PUMP COMPARTMENT LIGHT</u></p> <p>A pump compartment light shall be provided inside the plumbing area.</p> <p>A .125" weep hole shall be provided in each light lens, preventing moisture retention.</p> <p>Engine monitoring graduated LED indicators shall be incorporated with the pressure controller.</p> <p><u>VACUUM AND PRESSURE GAUGES</u></p> <p>The pump vacuum and pressure gauges shall be liquid filled and manufactured by Class 1, Inc.</p> <p>The gauges shall be a minimum of 4.00" in diameter and shall have white faces with black lettering, with a pressure range of 30.00"-0-600#.</p> <p>Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.</p>		

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	Bidder Complies	
	Yes	No
<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 electric water level gauge shall be incorporated in the pressure controller that registers water level by means of nine (9) LEDs. They shall be at 1/8 level increments with a tank empty LED. The LEDs shall be a bright type that is readable in sunlight, and have a full 180-degree of clear viewing.</p> <p>To further alert the pump operator, the gauge shall have a warning flash when the tank volume is less than 25 percent, and shall have down chasing LEDs when the tank is almost empty.</p> <p>The level measurement shall be ascertained by sensing the head pressure of the fluid in the tank or cell.</p> <p><u>MINI SLAVE UNIT</u></p> <p>An electric water level gauge shall be provided in the cab that registers water level by means of five (5) LEDs. They shall be at 1/4 level increments with a tank empty LED. The LEDs shall be a bright type that is readable in sunlight, and have a full 180-degree of clear viewing.</p>		

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	Bidder Complies	
	Yes	No
<p>The water level gauge in the cab shall be activated when the parking brake is set.</p> <p><u>FOAM LEVEL GAUGE</u></p> <p>An electric foam level gauge shall be provided on the operator's panel that registers foam level by means of nine (9) LEDs. There shall also be a mini foam level gauge with five (5) LEDs in the cab. They shall be at 1/8 level increments with a tank empty LED. The LEDs shall be a bright type that is readable in sunlight, and have a full 180 degree of clear viewing. The gauge shall match the water level gauge in the pressure controller.</p> <p>To further alert the pump operator, shall have a warning flash when the tank volume is less than 25 percent, and shall have Down Chasing LEDs when the tank is almost empty.</p> <p>The level measurement shall be ascertained by sensing the head pressure of the fluid in the tank or cell. This method provides accuracy with an array of multi-viscosity foams.</p> <p>The foam level gauge in the cab shall be activated by ignition switch is activated.</p> <p><u>SIDE CONTROL PUMP OPERATOR'S/PUMP PANEL LIGHTING</u></p> <p>Illumination shall be provided for controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus and the equipment provided on it. External illumination shall be a minimum of five (5) foot-candles on the face of the device. Internal illumination shall be a minimum of four (4) footlamberts.</p> <p>The pump panels shall be illuminated by four (4) Truck-Lite, Model 6060C white LED lights installed on the back of the cab, two (2) on the driver's side and two (2) on the passenger's side.</p> <p>The pump operator's panel shall utilize the same LED strip lighting at the forward doorframe as all other compartment lighting.</p> <p>There shall be a small white LED pump engaged indicator light installed overhead.</p>		

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	Bidder Complies	
	Yes	No
<p><u>ELECTRICAL</u></p> <p>All 12-volt electrical equipment installed by the apparatus manufacturer shall conform to modern automotive practices. All wiring shall be high temperature crosslink type. Wiring shall be run, in loom or conduit, where exposed and have grommets where wire passes through sheet metal. Automatic reset circuit breakers shall be provided which conform to SAE Standards. Wiring shall be color, function and number coded. Function and number codes shall be continuously imprinted on all wiring harness conductors at 2.00" intervals. Exterior exposed wire connectors shall be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids.</p> <p>Electrical wiring and equipment shall be installed utilizing the following guidelines:</p> <p>(1) All holes made in the roof shall be caulked with silicon, rope caulk is not acceptable. Large fender washers, liberally caulked, shall be used when fastening equipment to the underside of the cab roof.</p> <p>(2) 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>(3) Electrical components designed to be removed for maintenance shall not be fastened with nuts and bolts. Metal screws shall be used in mounting these devices. Also a coil of wire shall be provided behind the appliance to allow them to be pulled away from mounting area for inspection and service work.</p> <p>(4) Corrosion preventative compound shall be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections shall require this compound in the plug to prevent corrosion and for easy separation (of the plug).</p> <p>(5) All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.</p> <p>(6) All electrical terminals in exposed areas shall have silicon (1890) applied completely over the metal portion of the terminal. All emergency light switches shall be mounted on a separate panel installed in the cab. A master warning light switch and individual switches shall be provided to allow preselection of emergency lights. The light switches shall be "rocker" type with an internal indicator light to show when switch is energized. All switches shall be properly identified and mounted in a removable panel for ease in servicing. Identification of the switches shall be done by either printing or etching on the switch panel. The switches and identification shall be illuminated.</p>		

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	Bidder Complies	
	Yes	No
<p>All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard #108, shall be furnished. Rear identification lights shall be recessed mounted for protection. Lights and wiring mounted in the rear bulkheads shall be protected from damage by installing a false bulkhead inside the rear compartments.</p> <p>An operational test shall be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.</p> <p>The results of the tests shall be recorded and provided to the purchaser at time of delivery.</p> <p><u>CAB CLEARANCE/MARKER/ID LIGHTS</u></p> <p>There shall be seven (7) amber LED lights provided to indicate the presence and overall width of the vehicle in the following locations:</p> <ul style="list-style-type: none"> • Three (3) amber LED identification lights shall be installed in the center of the cab above the windshield. • Two (2) amber LED clearance lights shall be installed, one (1) on each outboard side of the cab above the windshield. • Two (2) amber LED marker lights shall be installed, one (1) on each side above the cab doors. <p><u>REAR CLEARANCE/MARKER/ID LIGHTING</u></p> <p>There shall be three (3) Truck-Lite®, Model 35200R, LED lights used as identification lights located at the rear of the apparatus per the following:</p> <ul style="list-style-type: none"> • 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 <p>There shall be two (2) Truck-Lite, Model 35200R, LED lights installed at the rear of the apparatus used as clearance lights located at the rear of the apparatus per the following:</p> <ul style="list-style-type: none"> • To indicate the overall width of the vehicle • One (1) each side of the vertical centerline • As near the top as practical • Red in color • To be visible from the rear • All at the same height <p>There shall be two (2) Truck-Lite, Model 35200R, LED lights installed on the side of the apparatus 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 		

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	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • 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>FRONT CAB SIDE CLEARANCE/MARKER LIGHTS</u></p> <p>There shall be two (2) Weldon, Model 9186-8580-29, amber LED lights installed front of the cab door, one (1) on each side of the cab.</p> <p>The lights shall activate as clearance/marker lights with the headlight switch and directional lights with the corresponding directional circuit.</p> <p><u>REAR FMVSS LIGHTING</u></p> <p>There shall be the following stop/tail and directional lighting provided at the rear of the truck:</p> <ul style="list-style-type: none"> • Two (2) Whelen®, Model 60BTT*, red LED stop/tail lights with color lenses • Two (2) Whelen, Model 60A00TAR, amber LED directional lights <p>The lights shall be mounted in a polished combination housing.</p> <p>Two (2) Whelen Model 60C00VCR, LED backup lights shall be provided.</p> <p><u>LICENSE PLATE BRACKET</u></p> <p>One (1) license plate bracket constructed of stainless steel shall be provided at the rear of the apparatus.</p> <p>One (1) white LED light shall be provided to 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.</p>		

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	Bidder Complies	
	Yes	No
<p><u>LIGHTING BEZEL</u> Two (2) Whelen, Model CAST4V, four (4) light aluminum housings shall be provided for mounting four (4) Whelen 600 lights.</p> <p><u>INTERMEDIATE LIGHT</u> 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.</p> <p>A stainless steel trim shall be included with this installation.</p> <p><u>CAB PERIMETER SCENE LIGHTS</u> There shall be four (4) Truck-lite, Model 6060C, white LED lights with grommets provided, one (1) for each cab and crew cab door.</p> <p>These lights shall be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body perimeter scene lights.</p> <p><u>PERIMETER SCENE LIGHTS, BODY</u> There shall be four (4) Truck-Lite, Model 6060C LED lights with rubber grommets provided on the apparatus as perimeter scene lights.</p> <ul style="list-style-type: none"> • Two (2) lights shall be under the rear step, one (1) each side. • Two (2) lights shall be under the pump panel area, one (1) each side. <p>Each lights shall be activated by a parking brake control and directional circuit.</p> <p><u>STEP LIGHTS</u> There shall be two (2) white LED step lights shall be provided at the rear to illuminate the tailboard/step area.</p> <p>In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.</p> <p>These step lights shall be actuated with the perimeter scene lights.</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> There shall be one (1) Whelen Pioneer, Model PCP2, 12 volt LED combination spot/flood light(s) provided on the front visor, centered.</p> <p>The painted parts of this light assembly to be white.</p>		

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	Bidder Complies	
	Yes	No
<p>The light(s) shall be controlled by the following:</p> <p>a switch at the driver's side switch panel.</p> <p>a switch at the pump operator's panel.</p> <p>no additional switch location.</p> <p>These light(s) 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 PCP2, 12 volt LED combination spotlight and floodlight(s) installed in semi-recessed housing(s) Model PBA203 located on the left (driver's) side towards the front of the fire body.</p> <p>The painted parts of this light assembly to be white.</p> <p>The light(s) 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 pump operator's panel. • no additional switch location. • no additional switch location. <p>These light(s) 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 PCP2, 12 volt LED combination spotlight and floodlight(s) installed in semi-recessed housing(s) Model PBA203 located on the right (officer's) side towards the front of the fire body.</p> <p>The painted parts of this light assembly to be white.</p> <p>The light(s) 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 pump operator's panel. • no additional switch location. • no additional switch location. <p>These light(s) may be load managed when the parking brake is set</p>		

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	Yes	No
<p><u>SIDE SCENE LIGHTS</u></p> <p>One (1) pair of Weldon 2020-1190-30, 50 watt, rectangular, sealed beam, side scene lights shall be provided with cast aluminum, 26 degree down angle bezels. The lights shall be mounted one (1) each side underneath the rear stop lights.</p> <p>The control for the lights shall be</p> <p>from the first switch feature, a control at the driver side switch panel</p> <p>from the second switch feature, there is no control of this option</p> <p>from the third switch feature, there is no control of this option.</p> <p>To meet NFPA requirements, these lights may be load managed when the parking brake is applied.</p> <p><u>CAB SPOTLIGHT</u></p> <p>There shall be one (1) GOLIGHT, Model 2020, mounted spotlight will be centered on the cab between the lightbar modules on a painted pedestal on the cab roof. The spotlight shall be remote controlled from inside the cab, by a four (4) position joystick. The joystick shall be within reach of the officer.</p> <p><u>HAND HELD SPOTLIGHT</u></p> <p>There shall be four (4) Streamlight, Model Survivor 90503, LED flashlights with chargers and AC/DC chords provided and installed by the Cambridge Fire Department.</p> <p><u>HAND HELD SPOTLIGHT</u></p> <p>There shall be two (2) lights Streamlight, Model Survivor 90503, LED flashlights with chargers and AC/DC chords provided and installed by the Cambridge Fire Department.</p> <p>The flashlights shall be connected battery direct and shall charge when the chassis batteries are charging.</p>		

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<p><u>AIR HORN SYSTEM</u> Two (2) Grover air horns shall be provided and located in the front bumper, recessed one (1) 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> The air horns shall be actuated by two (2) foot switches, one (1) located on the officer's side and one (1) on the driver's side.</p> <p><u>ELECTRONIC SIREN</u> A Federal, model 690010, PA300-012MSC, electronic siren with noise canceling microphone shall be provided.</p> <p>This siren to be active when the battery switch is on and that emergency master switch is on.</p> <p><u>ELECTRIC SIREN, LOCATION,</u> Siren head shall be mounted locate based on IP photos Ref IP-4 (Pics located Stage 3 and 7 Job-e-Folders).</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 one (1) speaker provided. Each speaker shall be a Federal, model CP100-S, 100 watt, with chrome finish. Each speaker shall be connected to the siren amplifier.</p> <p>The speaker shall be mounted on top of the front bumper on the passenger's side.</p> <p>The speaker shall be set back 2.00" from standard mounting.</p> <p><u>AUXILIARY MECHANICAL SIREN</u> A Federal Q2B® siren shall be furnished. A siren brake button shall be installed on the switch panel.</p> <p>The control solenoid shall be powered up after the emergency master switch is activated.</p> <p>The mechanical siren shall be mounted on the bumper deckplate, set back 2.00" from the front face of the bumper. It shall be mounted on the left side. The siren mounting shall include a reinforcement plate.</p>		

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	Bidder Complies	
	Yes	No
<p>The mechanical 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 located on the instrument panel.</p> <p><u>LIGHTBARS (CAB ROOF)</u></p> <p>There shall be two (2) 24.00" Whelen LED lightbars mounted on the cab roof, one (1) on each side, above the driver's and passenger's door, facing forward.</p> <p>Each lightbar shall include the following:</p> <ul style="list-style-type: none"> • One (1) red flashing LED module facing forward. • Two (2) red flashing corner LED module, one (1) in each front corner. • One (1) red flashing LED module on the end facing to the side. <p>All the lenses shall 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 lightbars.</p> <p><u>FRONT ZONE LOWER LIGHTS</u></p> <p>There shall be one (1) pair of Whelen, Model 60*02F*R, flashing LED lights installed on the cab face above the headlights, in a common bezel with the directional lights.</p> <p>The color of these lights shall be red Super LED/red lens.</p> <p>There shall be a switch located in the cab on the switch panel to control the lights..</p> <p><u>SIDE ZONE LOWER LIGHTING</u></p> <p>There shall be six (6) Whelen®, Model 60*02F*R, flashing LED lights located at the following positions:</p> <ul style="list-style-type: none"> • Two (2) lights located, one (1) each side on the bumper extension . <ul style="list-style-type: none"> ○ The color of these lights shall be red Super LED/red lens each side. • Two (2) lights located, above the front wheel well so as to match the previous unit . <ul style="list-style-type: none"> ○ The color of these lights shall be red Super LED/rd lens each side. • Two (2) lights located, one (1) each side to the rear of the wheel well . <ul style="list-style-type: none"> ○ The color of these lights shall be red Super LED/red lens each side. <p>There shall be a switch located in the cab on the switch panel to control the lights.</p> <p>These lights shall be installed with three (3) pairs of flange kits.</p> <p><u>REAR ZONE LOWER LIGHTING</u></p> <p>There shall be two (2) Whelen®, Model 60*02F*R, red Super LED/red lens lights located at the rear of the apparatus.</p>		

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	Bidder Complies	
	Yes	No
<p>Each light shall be mounted in a housing.</p> <p>There shall be a switch located in the cab on the switch panel to control the lights.</p> <p><u>REAR OF HOSE BED WARNING LIGHTS</u></p> <p>There shall be two (2) Whelen, Model L31H*F LED warning beacons provided at the rear of the truck, located one (1) each side. There shall be a switch located in the cab on the switch panel to control the beacons.</p> <p>The color of the light on the driver's side shall be blue LED and the color of the light on the passenger's side shall be red LED.</p> <p>The lens color shall be the same color as the LEDs.</p> <p><u>LIGHT, REAR UPPER ZONE, BLOCKING</u></p> <p>Two (2) Whelen Model 60*02F*R, flashing super LED lights shall be provided at the rear of apparatus at a level of 62.00" or higher, one (1) each side approximately half way up the body side as shown on the print.</p> <p>The color of these lights shall red Super LED/red lens.</p> <p>The lights shall be activated with the rear upper warning switch.</p> <p>These lights shall be installed with a flange.</p>		

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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 - One (1) extinguisher, 2.50 gallon pressurized water - One (1) extinguisher, 10 pound, CO2 - One (1) extinguisher, Ansul, Model I-A-20-G, 20 lb., FORAY dry chemical - One (1) 25' length of 6.0" Snap-Tire ATX Dura Lite Hose 4.5" Female Swivel X 5.0" Female Swivel. -One (1) 6.0" NST Female Swivel X 5.0" Male Adapter. <p>The extinguisher brackets will be the truck mount type with a "swing-out" clasp. The extinguishers will be able to filled by the fire department with no special adapters.</p> <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). 		

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	Yes	No
<ul style="list-style-type: none"> • 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. • 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>SOFT SUCTION HOSE, PROVIDED BY DEALER</u> NFPA 1901, 2009 edition, section 5.7.2 requires a minimum of 20 ft. of suction hose or 15 ft. of supply hose.</p> <p>Hose is not on the apparatus as manufactured. The dealer shall provide suction or supply hose.</p>		

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	Bidder Complies	
	Yes	No
<p><u>DRY CHEMICAL EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u></p> <p>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.</p> <p>The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.</p> <p><u>WATER EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</u></p> <p>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></p> <p>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></p> <p>NFPA 1901, 2009 edition, Section 5.8.3 requires one (1) pickhead 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>		

Cambridge Fire Department Apparatus Specification

	Bidder Complies	
	Yes	No
<p><u>PAINT</u></p> <p>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. 5. <u>Sealer Primer Coat</u> - A two (2) component sealer primer coat shall be applied over the sanded primer. 6. <u>Topcoat Paint</u> - Urethane base coat shall be applied to opacity for correct color matching. 7. <u>Clearcoat</u> - 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. <p>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.</p> <p>The cab and body shall be two-tone, with the upper section painted white and lower section of the cab and body painted red so as to match the current Cambridge Apparatus.</p> <p><u>PAINT - ENVIRONMENTAL IMPACT</u></p> <p>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:</p>		

Cambridge Fire Department Apparatus Specification

	Bidder Complies	
	Yes	No
<p>- Topcoats and primers must be chrome and lead free.</p> <p>- Metal treatment chemicals must be chrome free. The wastewater generated in the metal treatment process must be treated on-site to remove any other heavy metals.</p> <p>- Particulate emission collection from sanding operations must have a 99.99 percent efficiency factor.</p> <p>- Particulate emissions from painting operations must be collected by a dry filter or water wash process. If the dry filter means is used, it must have an efficiency rating of 98 percent. Water wash systems must be 99.97 percent efficient.</p> <p>- Water from water wash booths must be reused. Solids shall be removed mechanically on a continual basis to keep the water clean.</p> <p>- 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.</p> <p>- Empty metal paint containers must be cleaned, crushed and recycled to recover the metal.</p> <p>- Solvents used in cleanup operations must 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.</p> <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>GALVANIZED CHASSIS FRAME ASSEMBLY</u></p> <p>The chassis frame assembly shall be hot dip galvanized 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 hot dip galvanized are:</p> <ul style="list-style-type: none"> • Frame rails • Frame liners • Cross members • Front frame extension • Battery boxes • Tank cradle 		

Cambridge Fire Department Apparatus Specification

	Bidder Complies	
	Yes	No
<p>All galvanized components are inspected for compliance with ASTM specifications.</p> <p>All components that are not galvanized shall be painted red .</p> <p><u>PAINT, FRONT WHEELS</u></p> <p>All wheel surfaces, inside and outside, shall be provided with Red.</p> <p><u>PAINT, REAR WHEELS</u></p> <p>All wheel surfaces, inside and outside, shall be provided with Red.</p> <p><u>COMPARTMENT INTERIOR FINISH</u></p> <p>The interior of the body compartments shall be left unpainted and have the natural finish.</p> <p><u>REFLECTIVE BAND</u></p> <p>A 10.00" white reflective band shall be provided across the front of the vehicle and along the sides of the body.</p> <p>The reflective band provided on the cab face shall be at the headlight level.</p> <p><u>CHEVRON STRIPING, REAR</u></p> <p>There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus. The rear surface including the swing down tailboard shall be covered. The rear roll up door shall not be covered.</p> <p>The colors shall be red and fluorescent yellow green 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>STOP SIGN, REFLECTIVE, CAB DOORS</u></p> <p>A 12.00" x 12.00" reflective stop sign shall be provided on the interior of each cab door. The stop sign shall be located on the stainless steel door panel.</p> <p>This sign shall meet the NFPA 1901 requirement.</p> <p><u>BODY STRIPE</u></p> <p>There shall be a genuine gold leaf stripe provided on each side of the body, located along the top of the side compartmentation.</p> <p><u>CAB STRIPE</u></p> <p>There shall be a genuine gold leaf stripe located just below the window line on each side of the cab.</p>		

Cambridge Fire Department Apparatus Specification

	Bidder Complies	
	Yes	No
<p><u>LETTERING</u> The lettering shall be totally encapsulated between two (2) layers of clear vinyl.</p> <p><u>LETTERING</u> There shall be genuine gold leaf lettering, 4.00" high, with highlight and double shade provided. There shall be 20 letters provided.</p> <p><u>LETTERING</u> One (1) to twenty (20) non-reflective vinyl lettering, 3.00" high, with no outline or shade shall be provided.</p> <p><u>LETTERING</u> One (1) to twenty (20) reflective lettering, 3.00" high, with no outline or shade shall be provided.</p> <p><u>LETTERING</u> Twenty-one (21) to forty (40) genuine gold leaf lettering, 10.00" high, with highlight and double shade shall be provided.</p> <p><u>LETTERING</u> One (1) to twenty (20) non-reflective vinyl lettering, 1.00" high, with no outline or shade shall be provided.</p> <p><u>LETTERING</u> There shall be genuine gold leaf lettering, 6.00" high, with outline provided. There shall be one (1) letter provided.</p> <p><u>LETTERING</u> There shall be genuine gold leaf lettering, 4.00" high, with outline and shade provided. There shall be two (2) letters provided.</p> <p><u>LETTERING</u> One (1) to twenty (20) non-reflective vinyl lettering, 2.00" high, with no outline or shade shall be provided.</p> <p><u>LETTERING</u> There shall be reflective lettering, 18.00" high, with outline provided. There shall be two (2) letters provided.</p> <p><u>LETTERING, REFLECTIVE, "DIAL 911"</u> There shall be two (2) 8.00" high ruby red reflective decal "Dial 911" installed on D-1 and P-1. "Dial" shall be mounted vertically and "911" shall be horizontal.</p>		

Cambridge Fire Department Apparatus Specification

	Bidder Complies	
	Yes	No
<p><u>REFLECTIVE LETTERING</u> There shall be one (1) set/s of reflective lettering, "KEEP BACK 300 FEET", supplied and installed on the on the rear roll-up door. The lettering shall be white in color and 3.00" in size.</p> <p><u>EMBLEM INSTALLATION</u> There shall be one (1) reflective emblem provided and installed R-1.</p> <p><u>DECAL INSTALLATION</u> There shall be one (1) pair of decals furnished by the fire department and applied by the apparatus manufacturer.</p> <p><u>EMBLEM, FLEUR DE LIS</u> There shall be one (1) pair of fleur de lis emblems, comprised of genuine gold leaf material, provided and installed Cab corners. match 23918.</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 upper cab.</p> <p><u>RUST PROOFING/UNDERCOATING</u> 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> <p>Inside surfaces of the pump heat enclosure, (when installed).</p> <p><u>UNDERCOATING FUEL TANK</u> The apparatus fuel tank shall be fully undercoated by an authorized Ziebart dealer.</p>		

Cambridge Fire Department Apparatus Specification

	Bidder Complies	
	Yes	No
<p>The fuel tank shall be undercoated with an asphalt petroleum based material, dark in color.</p> <p>The undercoating material utilized on the tank 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 fuel tank prior to tank installation on the apparatus.</p>		

City of Cambridge CORI Policy

1. Where Criminal Offender Record Information (CORI) checks are part of a general background check for employment or volunteer work, the following practices and procedures will generally be followed.
2. CORI checks will only be conducted as authorized by Criminal History Systems Board (CHSB). All applicants will be notified that a CORI check will be conducted. If requested, the applicant will be provided with a copy of the CORI policy.
3. An informed review of a criminal record requires adequate training. Accordingly, all personnel authorized to review CORI in the decision-making process will be thoroughly familiar with the educational materials made available by the CHSB.
4. Prior to initiating a CORI check, the City will review the qualifications of the applicant to determine if the applicant is otherwise qualified for the relevant position. The City will not conduct a CORI check on an applicant that is not otherwise qualified for the relevant position.
5. Unless otherwise provided by law, a criminal record will not automatically disqualify an applicant. Rather, determination of suitability based on CORI checks will be made consistent with this policy and any applicable law or regulations.
6. If a criminal record is received from CHSB, the authorized individual will closely compare the record provided by CHSB with the information on the CORI request form and any other identifying information provided by the applicant, to ensure the record relates to the applicant.
7. If, in receiving a CORI report, the City receives information it is not authorized to receive (e.g. cases with dispositions such as not guilty or dismissal, in circumstances where the City is only authorized to receive convictions or case-pending information), the City will inform the applicant and provide the applicant with a copy of the report and a copy of CHSB's *Information Concerning the Process in Correcting a Criminal Record* so that the applicant may pursue correction with the CHSB.
8. If the City of Cambridge is planning to make an adverse decision based on the results of the CORI check, the applicant will be notified immediately. The applicant shall be provided with a copy of the criminal record and the City's CORI policy, advised of the part(s) of the record that make the individual unsuitable for the position and given an opportunity to dispute the accuracy and relevance of the CORI record.
9. Applicants challenging the accuracy of the criminal record shall be provided a copy of CHSB's *Information Concerning the Process in Correcting a Criminal Record*. If the CORI record provided does not exactly match the identification information provided by the applicant, the City of Cambridge will make a determination based on a comparison of the CORI record and documents provided by the applicant. The City of Cambridge may contact CHSB and request a detailed search consistent with CHSB policy.
10. If the City of Cambridge reasonably believes the record belongs to the applicant and is accurate, then the determination of suitability for the position will be made. Unless otherwise provided by law, factors considered in determining suitability may include, but not be limited to the following:
 - (a) Relevance of the crime to the position sought;
 - (b) The nature of the work to be performed;
 - (c) Time since the conviction;
 - (d) Age of the candidate at the time of offense;
 - (e) Seriousness and specific circumstances of the offense;
 - (f) The number of offenses;
 - (g) Whether the applicant has pending charges;
 - (h) Any relevant evidence of rehabilitation or lack thereof;
 - (i) Any other relevant information, including information submitted by the candidate or requested by the City.
11. The Personnel Department will assist affected departments, in assessing the suitability of candidates in accordance with paragraph 10 a through i above, to ensure consistency, fairness, and protection of employment opportunities

Name of Bidder: _____

File No 6681 To Furnish and Deliver Qty of One (1) Custom Built Heavy Duty Rescue & One (1) Custom Built 1250 GPM Foam Pumper- Thursday, January 8, 2015 @ 11:00 AM
and the public interest.

12. The City of Cambridge will notify the applicant of the decision and the basis of the decision in a timely manner.
13. CORI information shall not be disseminated or shared with any unauthorized employees or other, but shall be maintained in confidence consistent with the obligations of law.

Revised May 5, 2007

Name of Bidder: _____

ORDINANCE NUMBER 1312

Final Publication Number 3155. First Publication in the Chronicle on December 13, 2007.

City of Cambridge

In the Year Two Thousand and Eight

AN ORDINANCE

In amendment to the Ordinance entitled “Municipal Code of the City of Cambridge”

Be it ordained that Cambridge Municipal Code Chapter 2.112 is hereby amended by adding a new Section 2.112.060 entitled “CORI Screening by Vendors of the City of Cambridge” as follows:

Adding after Section 2.112.050 the following new sections:

SECTION 2.112.060

CORI SCREENING BY VENDORS OF THE CITY OF CAMBRIDGE

Sections:

2.112.061 Purpose

2.112.062 Definitions

2.112.063 CORI-Related Standards of the City of Cambridge

2.112.064 Waiver

2.112.065 Applicability

2.112.061 Purpose

These sections are intended to ensure that the persons and businesses supplying goods and/or services to the City of Cambridge deploy fair policies relating to the screening and identification of persons with criminal backgrounds through the CORI system.

2.112.062 Definitions

Unless specifically indicated otherwise, these definitions shall apply and control.

Awarding Authority means the City of Cambridge Purchasing Agent or designee.

Vendor means any vendor, contractor, or supplier of goods and/or services to the City of Cambridge.

2.112.063 CORI-Related Standards of the City of Cambridge

The City of Cambridge employs CORI-related policies, practices and standards that are fair to all persons involved and seeks to do business with vendors that have substantially similar policies, practices and standards. The City of Cambridge will do business only with vendors who, when required by law to perform CORI checks, employ CORI-related policies, practices, and standards that are consistent with policies, practices and standards employed by the City of Cambridge. The awarding authority shall consider any vendor’s deviation from policies, practices and standards employed by the City of Cambridge as grounds for rejection, rescission, revocation, or any other termination of the contract.

Name of Bidder: _____

2.112.064 Waiver

The City Manager may grant a waiver to anyone who or which has submitted a request for waiver if it is objectively reasonable; and the City Manager, or a delegate, shall report promptly in writing to the City Council all action taken with respect to every request for a waiver and the reasons for the decision.

2.112.065 Applicability

If any provision of these sections imposes greater restrictions or obligations than those imposed by any other general law, special law, regulation, rule, ordinance, order, or policy then the provisions of these sections shall control.

In City Council January 28, 2008.
Passed to be ordained by a yea and nay vote:-
Yeas 9; Nays 0; Absent 0.
Attest:- D. Margaret Drury, City Clerk.

A true copy;

ATTEST:-

D. Margaret Drury
City Clerk

Chapter 2.121

LIVING WAGE ORDINANCE

Sections:

2.121.010	Title and Purpose
2.121.020	Definitions
2.121.030	Living Wage
2.121.040	Waivers and Exceptions
2.121.050	Notification Requirements
2.121.060	Duties of covered Employers
2.121.070	Community Advisory Board
2.121.080	Enforcement
2.121.090	Severability
2.121.100	Effective Date

2.121.010 Title and Purpose.

This Chapter shall be known as the "Cambridge Living Wage Ordinance". The purpose of this ordinance is to assure that employees of the City of Cambridge and employees of City contractors, subcontractors and beneficiaries of tax abatements, loans, grants, subsidies and other assistance provided by the City earn an hourly wage that is needed to support a family of four.

2.121.020 Definitions.

For the purposes of this ordinance, the term:

(a) "Applicable Department" means the Personnel Department for employees of the City of Cambridge, the Purchasing Department, with the advice and assistance of the appropriate department which receives the services, for Covered Employers who contract or subcontract with the City of Cambridge, the School Department for employees, contractors and subcontractors of the School Department, and the City Manager's Office for any other Person who is a Beneficiary of assistance other than a contract or subcontract.

(b) "Assistance" means:

(1) any grant, loan, tax incentive, bond financing, subsidy, or other form of assistance valued at least \$10,000 that an employer receives by or through the authority or approval of the City of Cambridge, including, but not limited to, c. 121A tax abatements, industrial development bonds, Community Development Block Grant (CDBG) loans and grants, Enterprise Zone designations awarded after the effective date of this Chapter, and the lease of city owned land or buildings below market value; and

(2) any service contract, as defined herein, of at least \$10,000 with the City of Cambridge that is made with an employer to provide services pursuant to G.L.c. 30B or other public procurement laws, awarded, renegotiated or renewed after the effective date of this Chapter.

(3) any service subcontract, as defined herein, of at least \$10,000.

(c) "Beneficiary" means:

(1) any person who is a recipient of Assistance;

(2) any company or person that is a tenant or sub-tenant, leaseholder or sub-leaseholder of a recipient of Assistance, provided that said company or person employs at least 25 persons and occupies property or uses equipment or property that is improved or developed as a result of Assistance, after the effective date of this Chapter; and

(d) "Covered Employer" means the City of Cambridge or a Beneficiary of Assistance.

(e) "Covered Employee" means:

(1) a person employed by the City of Cambridge except for persons in those positions listed in Section 2.121.040(j) of this ordinance; and

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(2) a person employed by a Covered Employer, or a person employed by an independent contractor doing business with a Covered Employer, who would directly expend any of his or her time on the activities funded by the contract or the activities for which the Beneficiary received the Assistance, except for persons in those positions listed in Section 2.121.040(j) of this ordinance..

(f) "Living Wage" has the meaning stated in Section 2.121.030.

(g) "Person" means one or more of the following or their agents, employees, servants, representatives, and legal representatives: individuals, corporations, partnerships, joint ventures, associations, labor organizations, educational institutions, mutual companies, joint-stock companies, trusts, unincorporated organizations, trustees, trustees in bankruptcy, receivers, fiduciaries, and all other entities recognized at law by the Commonwealth of Massachusetts.

(h) "Service Contract" means a contract let to a contractor by the City of Cambridge for the furnishing of services, to or for the City, except contracts where services are incidental to the delivery of products, equipment or commodities. A contract for the purchase or lease of goods, products, equipment, supplies or other property is not a "service contract" for the purposes of this definition.

(i) "Service Subcontract" means a subcontract primarily for the furnishing of services, to or for a recipient of Assistance, except where services are incidental to the delivery of products, equipment or commodities. A contract for the purchase or lease of goods, products, equipment, supplies or other property is not a "service subcontract" for the purposes of this definition.

2.121.030 Living Wage.

(a) Applicability. Covered Employers shall pay no less than the Living Wage to their employees.

(b) Amount of wage. The Living Wage shall be calculated on an hourly basis and shall be no less than \$10.00, subject to adjustment as provided herein. The Living Wage shall be upwardly adjusted each year no later than March first in proportion to the increase at the immediately preceding December 31 over the year earlier level of the Annual Average Consumer Price Index for All Urban Consumers (CPI -U) Boston-Lawrence-Salem, MA - NH, as published by the Bureau of Labor Statistics, United States Department of Labor applied to \$10.00.

(c) No reduction in collective bargaining wage rates. Nothing in this Chapter shall be read to require or authorize any beneficiary to reduce wages set by a collective bargaining agreement.

(d) Cuts in non-wage benefits prohibited. No Beneficiary will fund wage increases required by this Chapter, or otherwise respond to the provisions of this Chapter, by reducing the health, insurance, pension, vacation, or other non-wage benefits of any of its employees.

2.121.040 Waivers and Exceptions.

(a) Waivers. A Covered Employer may request that the City Manager grant a partial or whole waiver to the requirements of this Chapter.

(b) General Waivers. Waivers may be granted where application of this Chapter to a particular form of Assistance is found by the City Solicitor to violate a specific state or federal statutory, regulatory or constitutional provision or provisions, and the City Manager approves the waiver on that basis.

(c) Hardship Waivers for certain not-for-profit employers. An employer, who has a contract with the City of Cambridge which is not subject to the provisions of G.L. c. 30B, may apply to the City Manager for a specific waiver where payment of the Living Wage by a not-for-profit Covered Employer would cause a substantial hardship to the Covered Employer.

(d) Chapter 30B contract waivers. Prior to issuing an invitation for bids for a procurement contract subject to the provisions of G.L. c. 30B, any Applicable Department may apply to the City Manager for a waiver of the application of the Living Wage to the contract where payment of the Living Wage by a Covered Employer would make it inordinately expensive for the City to contract for the services or would result in a significant loss of services, because the contracted work cannot be segregated from the other work of the Covered Employer.

(e) General Waiver Request Contents. All General Waiver requests shall include the following:

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- (1) The nature of the Assistance to which this Chapter applies;
- (2) The specific or official name of the Assistance and Assistance program, the statutory or regulatory authority for the granting of the Assistance, and a copy of that authority;
- (3) The conflicting statutory, regulatory, or constitutional provision or provisions that makes compliance with this Chapter unlawful, and a copy of each such provision; and
- (4) A factual explication and legal analysis of how compliance with this Chapter would violate the cited provision or provisions, and the legal consequences that would attach if the violation were to occur.

(f) Hardship Waiver Request Contents. All Hardship Waiver requests shall include the following:

- (1) The nature of the Assistance to which this Chapter applies;
- (2) A detailed explanation of why payment of the Living Wage would cause a substantial hardship to the Covered Employer; and
- (3) A statement of proposed wages below the Living Wage.

(g) Chapter 30B Contract Waiver Request Contents. A Chapter 30B contract waiver request shall include the following:

- (1) The nature of the Assistance to which this Chapter applies;
- (2) A detailed explanation of why the contracted work cannot be segregated from the other work of the bidding Covered Employers thereby making the cost of the contract with the payment of the Living Wage inordinately expensive or would result in a significant loss of services;

(h) Community Advisory Board review and recommendation regarding waiver requests. The Community Advisory Board, as described in Section 2.121.070 of this ordinance, shall consider waiver requests along with their supporting documentation and analysis, and may hold a public hearing to consider the views of the public before making a recommendation to the City Manager regarding the waiver request. For a hardship waiver, the Community Advisory Board shall offer an opportunity to be heard to employees of the Covered Employer. After reviewing the recommendation of the Community Advisory Board, the City Manager may approve and grant or deny all or part of a request. The City Manager may in his or her discretion grant a temporary hardship waiver pending the hearing before the Community Advisory Board. For Chapter 30B contract waivers, the Community Advisory Board shall make its recommendation to the City Manager no more than thirty days after it is notified of the request for a Chapter 30B contract waiver.

(i) Terms of exceptions. If an employer is subject to this Chapter as a result of its receipt of more than one kind of Assistance covered by this Chapter, and if the City Manager grants a waiver with respect to one form of Assistance, the City Manager need not find that this Chapter is inapplicable to the employer with respect to another form of Assistance received by the employer.

(j) Exceptions. The following positions will be excepted from the requirement of the payment of the Living Wage upon certification in an affidavit in a form approved by the Applicable Department and signed by a principal officer of the Covered Employer that the positions are as follows:

- (1) youth hired pursuant to a city, state, or federally funded program which employs youth as defined by city, state, or federal guidelines, during the summer, or as part of a school to work program, or in other related seasonal or part-time program;
- (2) work-study or cooperative educational programs;
- (3) trainees who are given a stipend or wage as part of a job training program that provides the trainees with additional services, which may include, but are not limited to, room and board, case management, or job readiness services.
- (4) persons working in a recognized supported employment program that provides workers with additional services, which may include, but are not limited to, room and board, case management, counseling, or job coaching;
- (5) positions where housing is provided by the employer;
- (6) employees who are exempt from federal or state minimum wage requirements; and
- (7) individuals employed by the City of Cambridge where the employment of such individuals is intended primarily to provide a benefit or subsidy to such individuals, although the City is compensating them for work performed.

2.121.050 Notification Requirements.

All Applicable Departments shall provide in writing an explanation of the requirements of this ordinance in all requests for bids for service contracts and to all persons applying for Assistance as defined by this ordinance. All persons who have signed a service contract with the City of Cambridge or a contract for Assistance shall forward a copy of such requirements to any person submitting a bid for a subcontract on the Assistance contract.

2.121.060 Duties of Covered Employers.

Name of Bidder: _____

(a) Notification Requirements. Covered employers shall provide each Covered employee with a fact sheet about this ordinance and shall post a notice about the ordinance in a conspicuous location visible to all employees. The fact sheet and poster shall be provided to the Covered Employer by the Applicable Department and shall include:

- (1) notice of the Living Wage amount;
- (2) a summary of the provisions of this ordinance;
- (3) a description of the enforcement provisions of the ordinance;

(4) the name, address, and phone number of a person designated by the Applicable Department to whom complaints of noncompliance with this ordinance should be directed.

(b) Contract for Assistance. At the time of signing a contract for assistance with the City of Cambridge or with a Beneficiary, the contract must include the following:

- (1) the name of the program or project under which the contract or subcontract is being awarded;
- (2) a local contact name, address, and phone number for the Beneficiary;
- (3) a written commitment by the Beneficiary to pay all Covered Employees not less than the Living Wage as subject to adjustment under this ordinance and to comply with the provisions of this ordinance;
- (4) a list of Covered Employees under the contract with the employees' job titles;
- (5) a list of all subcontracts either awarded or that will be awarded to Beneficiaries with funds from the Assistance.

Upon signing any subcontracts, the Covered Employer shall forward a copy of the subcontract to the Applicable Department.

(c) Maintenance of payroll records. Each Covered Employer shall maintain payrolls for all Covered Employees and basic records relating thereto and shall preserve them for a period of three years. The records shall contain the name and address of each employee, the job title and classification, the number of hours worked each day, the gross wages, deductions made, actual wages paid, and copies of social security wage and withholding reports, and evidence of payment thereof and such other data as may be required by the Applicable Department from time to time.

(d) Applicable Department duties. The Applicable Department shall cause investigations to be made as may be necessary to determine whether there has been compliance with this Ordinance. The Applicable Department shall report the findings of all such investigations to the Community Advisory Board.

(e) Covered Employer to cooperate. The Covered Employer shall submit payroll records on request to the Applicable Department. The Covered Employer shall permit City representatives to observe work being performed upon the work site, to interview employees and to examine the books and records relating to the payrolls being investigated to determine payment of wages.

(f) City Assistance Reports. Each Applicable Department shall file a City Assistance Report with the City Manager and the Community Advisory Board by July 31 of each year. The report shall include, for each Assistance package or contract approved during the preceding fiscal year:

- (1) the name of the Applicable Department (awarding agency), the name of the specific program under which the Assistance was awarded, and the origin of funds for Assistance;
- (2) a description of the purpose or project for which the Assistance was awarded;
- (3) the name, address, and phone number of a local contact person for the Covered Employer;
- (4) the total cost to the City of Assistance provided to each Beneficiary, including both face-value of Assistance, as well as revenue not collected as a result of the Assistance.

2.121.070 Community Advisory Board.

(a) Purpose. The purpose of the Community Advisory Board shall be to review the effectiveness of this Ordinance at creating and retaining Living Wage jobs, to make recommendations to the City Manager regarding the granting of Waivers to Covered Employers, to review the implementation and enforcement of this ordinance, and to make recommendations from time to time in connection therewith.

(b) Composition. The Community Advisory Board shall be composed of nine members and shall include representatives of labor unions, community organizations and the business community. All members will be appointed by the City Manager. Members of the Board shall serve a three-year term. Whenever a vacancy shall occur the City Manager shall appoint a replacement within thirty days of said vacancy.

(c) Meetings. The Community Advisory Board shall meet quarterly and in special session as required. All meetings of the Board shall be open to the public and will allow for public testimony on the uses of the City Assistance generally, and on specific instances of Assistance or proposed Assistance as received or sought by individual enterprises.

Name of Bidder: _____

(d) Conflict of Interest. No member of the Community Advisory Board shall participate in any proceeding concerning a Beneficiary, a Covered Employer or a Covered Employee, or applicant for waiver or exemption, if the member or any member of his or her immediate family has a direct or indirect financial interest in the outcome of said proceeding.

2.121.080 Enforcement.

(a) Enforcement powers. In order to enforce this Chapter, the Applicable Department may, with the approval and assistance of the City Solicitor, issue subpoenas, compel the attendance and testimony of witnesses and production of books, papers, records, and documents relating to payroll records necessary for hearing, investigations, and proceedings. In case of failure to comply with a subpoena, the City may apply to a court of appropriate jurisdiction for an order requiring the attendance and testimony of witnesses and the productions of books, papers, records, and documents. Said court, in the case of a refusal to comply with any such subpoena, after notice to the person subpoenaed, and upon finding that the attendance or testimony of such witnesses or the production of such books, papers, records, and documents, as the case may be, is relevant or necessary for such hearings, investigation, or proceedings, may issue an order requiring the attendance or testimony of such witnesses or the production of such documents and any violation of the court's order may be punishable by the court as contempt thereof.

(b) Complaint procedures. An employee who believes that he or she is a Covered Employee or an applicant for a position to be filled by a Covered Employee who believes that his or her employer is not complying with requirements of this Chapter applicable to the employer may file a complaint with the Applicable Department or with the Community Advisory Board. Complaints of alleged violations may also be filed by concerned citizens or by the City Council. Complaints of alleged violations may be made at any time, but in no event more than three years after the last date of alleged violation, and shall be investigated promptly by the Applicable Department. Statements written or oral, made by an employee, shall be treated as confidential and shall not be disclosed to the Covered Employer without the consent of the employee.

(c) Investigations and hearings. The Applicable Department shall investigate the complaint, and may, in conjunction with the City Solicitor, and in accordance with the powers herein granted, require the production by the employer of such evidence as required to determine compliance. Prior to ordering any penalty the applicable Department shall give notice to the employer and conduct a hearing. If at any time during these proceedings, the employer voluntarily makes restitution of the wages not paid to the employee making the complaint and to any similarly situated employees, by paying all back wages owed plus interest at the average prior year Massachusetts passbook savings bank rate, or otherwise remedies the violation alleged if the violation involves matters other than wages, then the Applicable Department shall thereafter dismiss the complaint against the employer.

(d) Remedies. In the event that the Applicable Department, after notice and hearing, determines that any Covered Employer has failed to pay the Living Wage rate or has otherwise violated the provisions of this Chapter, the Applicable Department may order any or all of the following penalties and relief:

(1) Fines up to the amount of \$300 for each Covered Employee for each day that the Covered Employer is in violation of this Ordinance, except if the violation was not knowing and willful, then the total fine shall not exceed the amount of back wages plus interest owed;

(2) Suspension of ongoing contract and subcontract payments;

(3) Ineligibility for future City Assistance for up to three years beginning when all penalties and restitution have been paid in full. In addition, all Covered Employers having any principal officers who were principal officers of a barred beneficiary shall be ineligible under this section; and

(4) Any other action deemed appropriate and within the discretion and authority of the city.

Remedies in this section shall also apply to the party or parties aiding and abetting in any violation of this chapter.

(e) Private right of action. Any Covered Employee, or any person who was formerly employed by a Beneficiary, may bring an action to enforce the provisions of this Chapter to recover back pay and benefits, attorneys fees and costs, by filing suit against a Beneficiary in any court of competent jurisdiction.

(f) Remedies herein non-exclusive. No remedy set forth in this Chapter is intended to be exclusive or a prerequisite for asserting a claim for relief to enforce the right granted under this Chapter in a court of law. This Chapter shall not be construed to limit an employee's right to bring a common law cause of action for wrongful termination.

(g) Retaliation and discrimination barred. A Covered Employer shall not discharge, reduce the compensation or otherwise retaliate against any employee for making a complaint to the City, otherwise asserting his or her rights under this Chapter, participating in any of its proceedings or using any civil remedies to enforce his or her rights under the Chapter. The City shall investigate allegations of retaliation or discrimination and shall, if found to be true, after notice and a hearing, order appropriate relief as set out in paragraphs (c) and (d) herein

Name of Bidder: _____

2.121.090 Severability.

In the event any provision of this ordinance shall be held invalid or unenforceable by any court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provisions hereof.

2.121.100 Effective Date.

This law shall be effective sixty (60) after final passage.

The Living Wage Ordinance (2.121) provides, at 1.121.030(b) that the wage shall be upwardly adjusted each year no later than March 1st in proportion to the increase in the Annual Average Consumer Price Index for the prior calendar year for All Urban Consumers (CPI-U) in the Boston area, as published by the federal Bureau of Labor Statistics.

For calendar year 1999, the CPI-U increased by 2.5%. Therefore the new living wage, as of March 1, 2000 is \$10.25.

For calendar year 2000, the CPI-U increased by 4.3%. Therefore the new living wage, as of March 1, 2001 is \$ 10.68.

For calendar year 2001, the CPI-U increased by 4.3%. Therefore the new living wage, as of March 1, 2002 is \$11.11.

For calendar year 2002, the CPI-U increased by 2.6% . Therefore the new living wage, as of March 1, 2003 is \$11.37.

The City Council has voted to amend the section of the Living Wage Ordinance (1.121.030 (b) that provides the method for calculating cost of living increases each year. As a result of this change, the living wage as of March 30, 2003 is \$11.44.

For calendar year 2003, the CPI-U increased by 3.76%. Therefore the new living wage, as of March 1, 2004 is \$11.87.

For calendar year 2004, the CPI-U increased by 2.7%. Therefore the new living wage, as of March 1, 2005 is \$12.19.

For calendar year 2005, the CPI-U increased by 3.3%. Therefore the new living wage, as of March 1, 2006 is \$12.59.

For calendar year 2006 the CPI-U increased by 3.1 %. Therefore the new living wage, as of March 1, 2007 is \$12.98.

For calendar year 2007 the CPI-U increased by 1.9 %. Therefore the new living wage, as of March 1, 2008 is \$13.23.

For calendar year 2008 the CPI-U increased by 3.5 %. Therefore the new living wage, as of March 1, 2009 is \$13.69.

For calendar year 2009 the CPI-U decreased by .67 %. Therefore the new living wage, as of March 1, 2010 will remain at \$13.69.

For calendar year 2010 the CPI-U increased by 1.57%. Therefore the new living wage, as of March 1, 2011 is \$13.90.

For calendar year 2011 the CPI-U increased by 2.71%. Therefore the new living wage, as of March 1, 2012 is \$14.28.

For calendar year 2012 the CPI-U increased by 1.58%. Therefore the new living wage, as of March 1, 2013 is \$14.51.

For calendar year 2013 the CPI-U increased by 1.37%. Therefore the new living wage, as of March 1, 2014 is \$14.71.

Name of Bidder: _____

**City of Cambridge
Articles of Agreement**

SAMPLE SAMPLE SAMPLE SAMPLE

**Commodity:
File Number:**

This agreement is made and entered into this _____, by and between the **City Of Cambridge** ("the CITY"), a municipal corporation organized and existing under the laws of the Commonwealth of Massachusetts, and _____, existing under the laws of the State of _____ ("the Contractor").

Address:

Telephone, Fax, E-mail:

Article I. Definition. "This Contract" as used herein shall mean these Articles of Agreement and "the bid documents," which include, but are not limited to, the instructions to bidders, the Contractor's bid or proposal, the specifications, the general conditions, the requirements, the applicable addenda, and all documents and forms submitted with the Contractor's bid or proposal that were accepted by the City.

Article II. Duration. The Contractor shall commence the performance of this contract for the period beginning on _____ and ending on _____.

Article III. Terms. The Contractor agrees to provide the services all in accordance with the bid documents of (bid opening date) or (proposal if appropriate).

Contract Value:

Article IV. Payment. The City agrees to pay to Contractor the sum set forth in the Contractor's bid or proposal. **Contractor shall invoice department to which it provided the service, not the Purchasing Department.**

Article V. Termination. The following shall constitute events of default under this Contract requiring immediate termination: a) any material misrepresentation made by the Contractor, b) any failure by the Contractor to perform any of its obligations under this Contract including, but not limited to, the following: (i) failure to commence performance of this Contract at the time specified in this Contract due to a reason or circumstance within the Contractor's reasonable control, (ii) failure to perform this Contract with sufficient personnel and equipment or with sufficient material to ensure the completion of this Contract within the specified time due to a reason or circumstance within the Contractor's reasonable control, (iii) failure to perform this Contract in a manner reasonably satisfactory to the City, (iv) failure to promptly re-perform within reasonable time the services that were rejected by the City as erroneous or unsatisfactory, (v) discontinuance of the services for reasons not beyond the Contractor's reasonable control, (vi) failure to comply with a material term of this Contract, including, but not limited to, the provision of insurance and nondiscrimination, and (vii) any other acts specifically and expressly stated in this Contract as constituting a basis for termination of this Contract.

Except as otherwise provided in the Articles of Agreement, the City may terminate the contract upon seven days notice.

Article VI. Damages. From any sums due to the Contractor for services, the City may keep for its own the whole or any part of the amount for expenses, losses and damages as directed by the Purchasing Agent, incurred by the City as a consequence of procuring services as a result of any failure, omission or mistake of the Contractor in providing services as provided in this Contract.

Article VII. Conflict. In the event there is a conflict between these Articles and the bid documents, the bid documents shall supersede these articles.

Name of Bidder: _____

Article VIII. Governing laws and ordinances. This Contract is made subject to all the laws of the Commonwealth and the Ordinances of the City and if any such clause thereof does not conform to such laws or ordinances, such clause shall be void (the remainder of the Contract shall not be affected) and the laws or ordinances shall be operative in lieu thereof.

Article IX. Performance Security. Upon execution of this Contract by the Contractor, the Contractor shall furnish to the City security for the faithful performance of this Contract in the amount of 100% of the value of the bid in the form of a performance bond issued by a surety satisfactory to the city or in the form of a certified check.

Article X. Equal Opportunity. the Contractor in the performance of all work under this contract will not discriminate on the grounds of race, color, sex, age, religious creed, disability, national origin or ancestry, sexual orientation, marital status, family status, military status, or source of income in the employment practices or in the selection or retention of subcontractors, and in the procurement of materials and rental of equipment. The city may cancel, terminate or suspend the contract in whole or in part for any violation of this article.

Article XI. Assignability. the Contractor shall not assign, sell, subcontract or transfer any interest in this contract without prior written consent of the city.

In witness whereof the parties have hereto and to three other identical instruments set their hands the day and year first above written.

Approved as to Form:

The Contractor:

Nancy E. Glowa
City Solicitor

Signature and Title

Richard C. Rossi
City Manager

Amy L. Witts
Purchasing Agent

Name of Bidder: _____