OFFICE OF THE CITY ATTORNEY
DAWN McINTOSH, City Attorney
411 West Ocean Boulevard, 9th Floor
Long Beach, CA 90802-4664

PURCHASE AGREEMENT

36600

THIS AGREEMENT is made and entered, in duplicate, as of June 12, 2023, for reference purposes only, pursuant to a minute order adopted by the City Council of the City of Long Beach at its meeting held on June 6, 2023, by and between the CITY OF LONG BEACH, a municipal corporation ("City"), and SOUTH COAST FIRE EQUIPMENT, INC., a California corporation ("Seller") , with a place of business at 2020 S. Baker Avenue, Ontario, California, 91761.

WHEREAS, City seeks to purchase nine Pierce Enforcer Triple Combination Fire Engine pumper trucks, and one Pierce Enforcer Triple Combination Rescue Engine pumper truck, with related equipment and accessories for the Long Beach Fire Department ("Equipment"); and

WHEREAS, Seller has agreed to sell City the Equipment; and

WHEREAS, City has selected Seller in accordance with City's administrative procedures using a Request for Proposals ("RFP"), attached hereto as Exhibit "A-1", attached hereto and incorporated herein by this reference; and

NOW, THEREFORE, in consideration of the mutual terms and conditions stated herein, the parties agree as follows:

1. Equipment.

A. The nine Pierce Enforcer Triple Combination Fire Engine pumper trucks, and one Pierce Enforcer Triple Combination Rescue Engine pumper truck, with related equipment and accessories for the Long Beach Fire Department (referred to as "Equipment") which is the subject matter of this Agreement is identified and described in Exhibit "A-2" attached hereto and incorporated herein by this reference. Seller warrants that Seller owns the Equipment and has the right to transfer title of the Equipment to City; Seller shall defend, indemnify and hold City harmless from any breach of this warranty. City shall be entitled to all warranties provided by the manufacturer of the Equipment.

B. In consideration of City's payment hereunder, Seller shall provide the Equipment.

2. Purchase Price.

A. The total amount of this Agreement shall not exceed Eleven Million Three Hundred Twenty-Eight Thousand, Five Hundred Fifty-Five Dollars ($11,328,555), at the rates and charges shown in Exhibit "B", attached hereto and incorporated by this reference.

B. City shall pay Seller net 30 days after delivery and acceptance of the Equipment.

3. Term. The term of this Agreement shall begin at 12:01 a.m. on June 12, 2023 and shall terminate by completion of purchase and delivery of the Equipment, after final payment is made by the City.

4. Warranty. In addition to the terms outlined in Exhibit "A-1":

A. City shall have the benefit of the manufacturer's warranties on the Equipment. Seller warrants that the Equipment is in good working order and free from defect at the time of delivery.

B. Vendor warrants that Vendor owns the Equipment and has the right to transfer title of the Equipment to City; Vendor shall defend, indemnify and hold City harmless from any breach of this warranty. City shall be entitled to all warranties provided by the manufacturer of the Equipment. All warranties shall accrue to the City of Long Beach.

C. Vendor warrants that the Equipment is delivered or the work performed hereunder shall conform to the specifications, drawings, samples or other description specified by the City and shall be fit and sufficient for the purpose intended, merchantable, of good material and workmanship, in good working order and free from defect or faulty workmanship for a period of ninety (90) days. When defective goods, machinery, or equipment or faulty workmanship is discovered which requires repair or replacement pursuant to this warranty, Vendor shall provide

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all labor, materials, parts and equipment to correct such defect at no expense to the City.

5. Delivery. Vendor shall ensure that the Equipment is delivered to the location specified in Exhibit "A" and delivered no later than the delivery date Exhibit "B", unless otherwise agreed to by the City in writing. If at any time Vendor has reason to believe that a delivery or deliveries will not be made as agreed upon, written notice of the anticipated delay shall be given to the City.

6. Right to Changes. The City reserves the right at any time to make changes in drawings and specifications, in methods of shipment and packaging and in place of delivery as to any articles covered by this Agreement. In such event there will be made an equitable adjustment in price and time of performance mutually satisfactory to Vendor and the City; but any claim by Vendor for such an adjustment must be made within thirty (30) days of such change.

7. Notice. Notice shall be in writing and personally delivered or deposited in the U.S. Postal Service, first class, registered or certified, return receipt, postage prepaid, to Seller at the address first stated above, and to City at 411 West Ocean Boulevard, Long Beach, California 90802 Attn: City Manager. Notice shall be deemed given on the date of personal deliver or on the date shown on the return receipt, whichever first occurs. Notice of change of address shall be given as other notices.

8. Assignment. Seller shall not, except for moneys due and payable hereunder, assign its rights or delegate its duties hereunder, or any interest herein, or any portion hereof, without the prior written approval of City. Any attempted assignment or delegation shall be void, and any assignee or delegate shall acquire no right or interest by reason of such attempted assignment or delegation. Furthermore, Seller shall not subcontract any portion of the performance required hereunder without the prior written approval of City.

9. Termination. The City may terminate this Agreement, in whole or in part, immediately upon notice to Vendor in the event of any of the following events:

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A. The City fails to receive funding or appropriation from the City Council at levels sufficient to pay for the goods to be purchased;

B. Federal, state, or provincial laws or regulations prohibit the purchase or change the City's requirements; or

C. Vendor commits any material breach of this Agreement or the additional terms agreed to between the parties.

In the event the City exercises its right to terminate under this Section, the City shall give the vendor

10. Law. This Agreement shall be governed by and construed pursuant to the laws of the State of California (except those provisions of California law pertaining to conflicts of laws). Any action involving this Agreement shall be brought in the Los Angeles County Superior Court, Long Beach Judicial District. Vendor shall cause all work performed in connection with construction of the Project to be performed in compliance with (1) all applicable laws, ordinances, rules and regulations of federal, state, county or municipal governments or agencies (including, without limitation, all applicable federal and state labor standards, including the prevailing wage provisions of sections 1770 et seq. of the California Labor Code); and (2) all directions, rules and regulations of any fire marshal, health officer, building inspector, or other officer of every governmental agency now having or hereafter acquiring jurisdiction. If any part of this Agreement is found to be in conflict with applicable laws, that part will be inoperative, null and void insofar as it is in conflict with any applicable laws, but the remainder of the Agreement will remain in full force and effect.

11. Prevailing Wages.

A. Vendor agrees that all public work (as defined in California Labor Code section 1720) performed pursuant to this Agreement (the "Public Work"), if any, shall comply with the requirements of California Labor Code sections 1770 et seq. City makes no representation or statement that the Project, or any portion thereof, is or is not a "public work" as defined in California Labor Code

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section 1720.

B. In all bid specifications, contracts and subcontracts for any such Public Work, Vendor shall obtain the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in this locality for each craft, classification or type of worker needed to perform the Public Work, and shall include such rates in the bid specifications, contract or subcontract. Such bid specifications, contract or subcontract must contain the following provision: "It shall be mandatory for the contractor to pay not less than the said prevailing rate of wages to all workers employed by the contractor in the execution of this contract. The contractor expressly agrees to comply with the penalty provisions of California Labor Code section 1775 and the payroll record keeping requirements of California Labor Code section 1771."

12. Insurance. As a condition precedent to the effectiveness of this Agreement, Vendor shall procure and maintain, at Vendor's expense for the duration of this Agreement, from insurance companies that are admitted to write insurance in California and have ratings of or equivalent to A:V by A.M. Best Company or from authorized non-admitted insurance companies subject to Section 1763 of the California Insurance Code and that have ratings of or equivalent to A:VIII by A.M. Best Company, the following insurance:

A. Commercial general liability insurance (equivalent in scope to ISO form CG 00 01 11 85 or CG 00 01 10 93) in an amount not less than $1,000,000 per each occurrence and $2,000,000 general aggregate. This coverage shall include but not be limited to broad form contractual liability, cross liability, independent contractors liability, and products and completed operations liability. City, its boards and commissions, and their officials, employees and agents shall be named as additional insureds by endorsement (on City's endorsement form or on an endorsement equivalent in scope to ISO form CG 20 10 11 85 or CG 20 26 11 85), and this insurance shall contain no special limitations on the scope of protection

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given to City, its boards and commissions, and their officials, employees and agents. This policy shall be endorsed to state that the insurer waives its right of subrogation against City, its boards and commissions, and their officials, employees and agents.

B. Workers' Compensation insurance as required by the California Labor Code and employer's liability insurance in an amount not less than $1,000,000. This policy shall be endorsed to state that the insurer waives its right of subrogation against City, its boards and commissions, and their officials, employees and agents.

C. Professional liability or errors and omissions insurance in an amount not less than $1,000,000 per claim.

D. Commercial automobile liability insurance (equivalent in scope to ISO form CA 00 01 06 92), covering Auto Symbol 1 (Any Auto) in an amount not less than $500,000 combined single limit per accident.

Any self-insurance program, self-insured retention, or deductible must be separately approved in writing by City's Risk Manager or designee and shall protect City, its officials, employees and agents in the same manner and to the same extent as they would have been protected had the policy or policies not contained retention or deductible provisions.

Each insurance policy shall be endorsed to state that coverage shall not be reduced, non-renewed or canceled except after thirty (30) days prior written notice to City, shall be primary and not contributing to any other insurance or self-insurance maintained by City, and shall be endorsed to state that coverage maintained by City shall be excess to and shall not contribute to insurance or self-insurance maintained by Vendor. Vendor shall notify City in writing within five (5) days after any insurance has been voided by the insurer or cancelled by the insured.

If this coverage is written on a "claims made" basis, it must provide for an extended reporting period of not less than one hundred eighty (180) days, commencing on the date this Agreement expires or is terminated, unless Vendor

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guarantees that Vendor will provide to City evidence of uninterrupted, continuing coverage for a period of not less than three (3) years, commencing on the date this Agreement expires or is terminated.

Vendor shall require that all sub-contractors or contractors that Vendor uses in the performance of these services maintain insurance in compliance with this Section unless otherwise agreed in writing by City's Risk Manager or designee.

Prior to the start of performance, Vendor shall deliver to City certificates of insurance and the endorsements for approval as to sufficiency and form. In addition, Vendor shall, within thirty (30) days prior to expiration of the insurance, furnish to City certificates of insurance and endorsements evidencing renewal of the insurance. City reserves the right to require complete certified copies of all policies of Vendor and Vendor's sub-vendors and contractors, at any time. Vendor shall make available to City's Risk Manager or designee all books, records and other information relating to this insurance, during normal business hours.

Any modification or waiver of these insurance requirements shall only be made with the approval of City's Risk Manager or designee. Not more frequently than once a year, City's Risk Manager or designee may require that Vendor, Vendor's sub-vendors and contractors change the amount, scope or types of coverages required in this Section if, in his or her sole opinion, the amount, scope or types of coverages are not adequate.

The procuring or existence of insurance shall not be construed or deemed as a limitation on liability relating to Vendor's performance or as full performance of or compliance with the indemnification provisions of this Agreement.

13. Taxes. Vendor shall cooperate with the City in all matters relating to self-accrual of use tax. Vendor shall contact the City Treasurer for additional information regarding self-accrual.

14. Miscellaneous.

A. In connection with performance of this Agreement and federal

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laws, rules and regulations, Seller shall not discriminate in employment or in the performance of this Agreement on the basis of race, religion, national origin, color, age, sex, sexual orientation, gender identity, AIDS, HIV status, handicap or disability.

B. This Agreement was created as a joint effort of both parties and neither it nor any part of it shall be construed against one party as the drafter.

C. This Agreement, including Exhibits, shall not be amended, nor any provision or breach hereof waived except in a writing signed by the parties which expressly refers to this Agreement.

D. This Agreement, including Exhibits, constitutes the entire understanding between the parties and supersedes all other agreements, oral or written, or preprinted terms and conditions of the City or Seller's Purchase Order to the extent they are inconsistent with this Agreement, with respect to the subject matter herein.

E. In the event of any conflict or ambiguity between this Agreement and any Exhibit, the provisions of this Agreement shall govern.

F. If there is any legal proceeding between the parties to enforce or interpret this Agreement or to protect or establish any rights or remedies hereunder, the prevailing party shall be entitled to its costs and expenses, including reasonable attorney's fees.

G. The acceptance of any Equipment or the payment of any money by City shall not operate as a waiver of any provision of this Agreement, or of any right to damages or indemnity stated herein. The waiver of any breach of this Agreement shall not constitute a waiver of any other or subsequent breach of this Agreement.

H. Termination of this Agreement shall not affect rights or liabilities of the parties which accrued prior to termination and shall not extinguish any warranties.

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I. Seller shall not use the name of City, its officials or employees in any advertising or solicitation for business nor as a reference without the prior written approval of City's City Manager.

J. This Agreement is intended by the parties to benefit themselves only and is not in any way intended or designed to or entered for the purpose of creating any benefit or right for any person or entity of any kind that is not a party to this Agreement.

K. In performing hereunder, Seller is and shall act as an independent contractor and neither Seller nor its employees, agents, suppliers or subcontractors shall act as or be deemed employees, representatives or agents of City.

L. Seller shall comply with all applicable federal, state and local laws and regulations during performance hereunder.

M. The terms and conditions of this Agreement are severable. If any term or condition is held invalid, void or unenforceable, the remaining terms and conditions shall be given effect.

N. The division of provisions hereof into sections and the captions on those sections is for convenience only and shall not be considered in construing this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this document to be duly executed with all of the formalities required by law as of the date first stated above.

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SOUTH COAST FIRE EQUIPMENT, INC.,
a California corporation

June 22, 2023

By Kevin M. Newell
Name KEVIN M. NEWELL
Title PRESIDENT

June 22, 2023

By Angel D. Newell
Name Angel D. Newell
Title Secretary

EXECUTED PURSUANT TO SECTION 301 OF THE CITY CHARTER.

"Seller"

CITY OF LONG BEACH, a municipal corporation

June 23, 2023

By Linda F. Tatum
City Manager

"City"

This Agreement is approved as to form on June 22, 2023.

DAWN MCINTOSH, City Attorney

By _____
Deputy

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EXHIBIT "A-1"

Request for Proposals Number
FM 22-175 Fire Engine Pumpers

City of Long Beach

Request for Proposals Number FM 22-175
Fire Engine Pumpers

Overview

Summary

Fire Engine Pumpers – Seeking proposals for the purchase of 10 Fire Engine pumpers per attached specifications as normal scheduled replacements to the City of Long Beach fleet.

Key Dates

Release Date: 12/21/2022

Questions Due to the City: 3:00PM 1/11/2023

Proposals Due: 11:00AM 1/31/2023

The City reserves the right to modify these dates at any time, with appropriate notice to prospective Contractors.

Proposal Information

Instructions for what to include in your proposal and how to submit it are detailed in Section 4.

Proposals must be submitted electronically via LongBeachBuys.com.

Official Contact

Michelle King
rfppurchasing@longbeach.gov
All communication with the City related to this RFP must be directed to the contact listed above.

Contents

1 The Opportunity

1.1 Project Summary

Seeking proposals for 10 Fire Engine Pumpers to include 9 standard pumpers and 1 rescue body pumper. Desired specifications to meet Long Beach Fire Department standards are included as attachments.

1.2 Background

The City of Long Beach (City) has its own in-house Fire Department consisting of numerous stations located throughout the City. This RFP is seeking proposals to replace a large portion of our current front-line fleet for emergency response.

The current front-line pumper fleet is beyond its useful life cycle and there is an immediate need to replace these units to ensure there is no lack of service to the public and mutual aid response status throughout the State. On-time delivery is critical for this project to reduce service downtime.

1.3 Goals

- Increase service delivery with new units
- Meet or exceed vendor stated delivery time frame
- Complete inspections on-time as listed in Performance Metrics (2.2.1)

1.4 Award Terms

The term of this contract will be from the date executed by both parties and until final fulfillment of all aspects of the contract specifications and issued purchase orders.

2 Scope of Work

2.1 General Description of Services

The City desires to engage a vendor with a collaborative approach to design and build a well-constructed, reliable, safe and operation appropriate updated pumper fleet consisting of 10 Fire Engine Pumpers to include 9 standard pumpers and 1 rescue body pumper. Desired specifications to meet Long Beach Fire Department standards are included as attachments.

Radio and Equipment Outfitting

Radio and equipment outfitting must be completed by 911 Vehicle, of Anaheim, CA as detailed in specifications (no exceptions). Complete specifications are included in Appendix 1 (9 Fire Engine Pumpers) and Appendix 2 (1 Rescue Body pumper).

2.1.2 General Design and Construction

a) 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.
b) All proposers 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.
c) 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.
d) The proposer shall make accurate statements as to the apparatus weight and dimensions.

2.1.3 Quality and Workmanship

a) 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.
b) 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.
c) The manufacturer shall be required to have an American Welding Society certified welding inspector in plant during working hours to monitor weld quality.

2.1.4 Delivery

a) 10 Fire Engine pumpers delivered ready for service.
b) All units will to be driven to 911 vehicle of Anaheim, CA from the factory to be outfitted.
c) Pre-delivery inspection (PDI) must be completed at awarded vendors local service facility before delivery to the City.
d) Final Delivery Location: City's Fleet Services Bureau at 2600 Temple Ave, Long Beach, Ca, 90806.
e) The City must be contacted for delivery appointment at least 48 hours prior, so staff is available for acceptance.

f) To ensure proper break in of all components while still under warranty, apparatus shall be delivered under its own power - rail or truck freight is not acceptable.
g) 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.

2.1.5 Manuals and Service Information

a) The manufacturer shall supply at time of delivery, complete operation and maintenance manuals covering the complete apparatus as delivered and must include electronic (soft) copy.
b) A permanent plate shall be mounted in the driver's compartment which specifies the quantity and type of fluid required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.

2.1.6 Safety Video

a) An apparatus safety video on a flash drive shall be provided at time of delivery. Format and content to be worked out with City representatives prior to delivery, and City final approval required.
b) This video should address all key safety considerations for personnel to follow when they are driving, operating, and maintaining the apparatus. Safety procedures for the following should be included on the video: vehicle pre trip inspection, chassis operation, pump operation and maintenance.

2.1.7 Performance and test requirements

a) 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.
b) 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.
c) Vehicle shall adhere to the following parameters:
    I. 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.
    II. 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.
    III. 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.

a) 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).

2.1.8 Service and warranty support (Dealership)

a) To ensure full service after delivery, the selling proposer/dealership must be capable of providing service when required.
b) The proposer/dealership shall show that the company is in position to render prompt service and to furnish replacement parts.
c) Each proposer/dealership must be able to display that they are actively in the fire apparatus service business by operating in conjunction with a factory authorized service center and parts repository capable of satisfying the warranty service requirements and parts requirements of the vehicle(s) being purchased. Minimum in-stock parts inventory should be provided.
d) The proposer/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 50 miles of the City's Fleet Services Bureau, the final delivery location.

2.1.9 Service and Warranty Support (Manufacturer)

a) 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 proposer shall provide detailed documentation of service and replacement part resources.
b) Parts identification shall be provided to both the dealer and the City through an online 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.
c) The manufacturer must also maintain a 24 hour/ 7 day a week, toll free emergency hot line.
d) The manufacturer shall employ a staff of adequate size specifically dedicated to providing customer support and parts for the fielded fleet of vehicles it has produced.
e) The manufacturer must be capable of providing both in-house and on-site service for the apparatus.

f) The manufacturer shall offer regional factory hands-on repair and maintenance training classes.
g) 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.

2.1.10 Single Source Manufacturer

a) A single source apparatus manufacturer is desired. The definition of single source is a manufacturer that designs and manufactures their products using an integrated approach, including the chassis, cab weldment, cab, pumphouse (including the sheet metal enclosure, valve controls, piping, and operators' panel) and body being designed, fabricated, and assembled on the proposer's premises.
b) The electrical system (hardwire or multiplex) shall be both designed and integrated by the same apparatus manufacturer. The warranties relative to these major components (excluding component warranties such as engine, transmission, axles, pump, etc.) must be from a single source manufacturer and not split between manufacturers (i.e., body, pumphouse, cab weldment and chassis).
c) The proposer shall state the location of the factory where the apparatus is to be built.

2.1.11 National Fire Protection Association (NFPA) Standards

- This unit shall comply with all current NFPA standards.
- Certification of slip resistance of all stepping, standing, and walking surfaces shall be supplied with delivery of the apparatus.
- All horizontal surfaces designated as a standing or walking surface that are greater than 48.00" above the ground must be defined by a 1.00" wide line along its outside perimeter.
- Perimeter markings and designated access paths to destination points shall be identified on the customer approval print and are shown as approximate.
- Actual location(s) shall be determined based on materials used and actual conditions at final build. Access paths may pass through hose storage areas and opening or removal of covers, or restraints may be required. Access paths may require the operation of devices and equipment
- A plate that is highly visible to the driver while seated shall be provided. This plate shall show the overall height, length, and gross vehicle weight rating.
- The manufacturer shall have programs in place for training, proficiency testing and performance for any staff involved with certifications.

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

2.1.12 NFPA Compliancy

Apparatus proposed by the proposer 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".

2.1.13 Pump Test

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

2.1.14 Vehicle Inspection Program Certification

a) To assure the vehicle is built to current NFPA 1901 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.
    I. 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).
b) 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.

2.1.15 Inspection Trip(s)

a) The proposer shall provide sufficient factory inspection trips for the City team to ensure the trucks are built in line with City's timeline and needs. We expect this to be 3-6 trips for 5 City Representatives. The inspection trip(s) shall be scheduled at times mutually agreed upon between the manufacturer's representative and the customer.
b) All costs such as travel, lodging and meals shall be the responsibility of the proposer.
c) Reasonable accommodations will be provided in accordance with the City's travel policy. Any expenses beyond requirements for travel, lodging and meals shall be the responsibility of the City. Awarded contractor will comply with the City's Gift Policy.

2.1.16 Approval Drawing

a) A drawing of the proposed apparatus shall be provided for approval before construction begins.
b) The sales representative shall also have a copy of the same drawing.
c) 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.
d) 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.

2.1.17 Final Drawing

a) There shall be a revised drawing of the apparatus with all the changes made during production provided at pickup.
b) This is a multiple unit order. The City shall receive 2 hard copy drawings total for the 9-truck order.

2.1.18 Drawing, Compartment Layout

A basic drawing shall be provided for the interior body compartments. This drawing shall be provided for graphic representation only and shall include such things as shelves, trays, reels, dividers, air control panels, air bottle storage bins, poly boxes & etc.

2.1.19 Electrical Wiring Diagrams

a) Three (3) flash drives containing "As-Built" electrical wiring diagrams specifically prepared for the chassis and body shall be provided. The diagrams shall consist of information pertaining to the 12 VDC systems only.
    I. 2 flash drives shall be shipped with the loose equipment with each truck.
    II. 1 flash drive shall be included with the job folder at apparatus builders' facility for future reference.

b) All diagram files shall include the following capabilities:
    I. The capability of viewing each separate diagram.
    II. The capability of zooming in on any section of each separate diagram.
    III. The capability of printing each separate diagram.
    IV. The capability of printing each zoomed in area of each separate diagram.

c) Each flash drive shall include the following items:
    I. Title page, identifying the job number and chassis model.
    II. Table of contents.

III. Truck specific electrical compartment and instrument layouts for the chassis.
IV. Truck specific electrical compartment layouts for the body.
V. Applicable drawings from the appropriate standard wiring diagrams.
VI. All truck specific wiring diagrams (special drawings).
VII. Harness drawings for all wiring harnesses used on the chassis.
VIII. Harness drawings for all wiring harnesses used on the body.
IX. All truck input and output programming sheets (multiplexed trucks only).

There shall be no hard copies of these diagrams required for this unit.

2.2 Contract Management

Contract Deliverables: All 10 pumpers must be delivered completely outfitted and ready for service within the agreed upon time period after receipt of the purchase order. Please state delivery time frame in proposal.

APPENDICES
Nine (9) Fire Engine Pumpers, See Appendix A
One (1) Rescue Body pumper, See Appendix B

Communication and Management: The City will designate one point of contact from the Fleet services Bureau to make all final decisions and be the Contract Manager. The City Team will consist of designated representatives from the Fleet Services Bureau and the Fire Department. This team will collaborate with designated vendor representative(s) to help ensure a smooth and quality project completion.

Performance Reports: Progress pictures and/or drawings with progress update e-mails shall be provided by vendor on a monthly basis. If any supply chain issues are relevant, they must be stated monthly.

Inspection Trips:

MEETING	DESCRIPTION	TARGET
1. Pre-Construction Meeting	Meeting to finalize exact specification prior to starting build process. Entire spec will be reviewed with representatives from Fleet and Fire	2 weeks from receipt of purchase order
2. Mid Construction Inspection	Factory inspection with City representatives to review and approve progress of builds at mid- point pre- paint	6-9 months after receipt of purchase order

3. Final Inspection	Factory Inspection with City representatives to review and approve final build of several units before they leave the factory for delivery to 911 Vehicle for outfitting.	9-12 months after receipt of purchase order

Contract Payment: The City issues payment based upon services rendered. After a contract is finalized and work is performed, the Contractor should invoice the City. The City will remit payment within 30 calendar days of being billed. This purchase will be lease financed by the City and payments will be released per unit completion and proof of registration showing correct lien-holder information, only after the final inspection has been completed and the equipment delivered to the City

3 How We Choose

3.1 Minimum Qualifications

- Compliance with all current construction standards, including but not limited to, National Fire Protection Association (NFPA) Standards, Federal Motor vehicle Safety Standards (FMVSS), and American Welding Society Standards
- Local dealership support within 50 miles of the City's, Fleet Services, 2600 Temple Avenue, Long Beach, CA 90806.
- Not having been debarred by Federal, State, or local governments

3.2 Evaluation Criteria

Proposals shall be consistently evaluated based upon the following criteria:

CRITERIA
1. Organizational Capacity & Experience • Years in operation demonstrating a proven track record of safe, well-built equipment • References
2. Method of Approach • Reasonableness of Completion Commitment • Quality of Materials and Construction • Warranty • Local Dealer Support Services • Ability to meet specifications
3. Communications and Reporting
4. Reasonableness of Cost

4 Proposal Instructions & Content

4.1 Timelines & Instructions

MILESTONE	TIME (PACIFIC) & DATE	LOCATION / ADDITIONAL INFORMATION
Release date	12/21/2022	
Questions due to the City	1/11/2023 3:00PM	• Submit all inquiries via email to rfppurchasing@longbeach.gov
Posting of the Q&A	1/18/2023	• Responses to the questions will be posted on LongBeachBuys.com.
Proposals due	1/31/2023 11:00AM	• Proposals should be submitted electronically via LongBeachBuys.com. • Late proposals, or proposals submitted through other channels will not be accepted. • Proposers are responsible for submitting their proposals completely and on time. o Proposers will receive an e-bid confirmation number with a time stamp from LongBeachBuys.com indicating that the proposal was submitted successfully. The City will only receive proposals that were transmitted successfully. o For technical support, email or call the City during normal business hours at LBPurchasing@longbeach.gov or (562) 570-6200.
Evaluation of Narrative & Cost Proposals	1/31/23 to 2/03/23	• An Evaluation Committee will review Narrative & Cost Proposals to select the proposal that best meets the needs of the City. • Evaluations will be conducted using a methodology derived from the evaluation criteria listed in Section 3.2.
Interviews/ Demos/ Site Visits	2/8/23	• Additional information and/or viewing of previous equipment delivered as reference may be requested for final clarification • The City may interview or request demos from none, one, some or all Proposers.

Negotiation & Contractor Selection	02/15/23	• Selected Contractor(s) will be notified in writing. • Any award is contingent upon the successful negotiation of final contract terms. If contract negotiations cannot be concluded successfully, the City reserves the right to negotiate a contract with another Contractor or withdraw the RFP. • Negotiations shall be confidential and not subject to disclosure to competing Contractors unless and until an agreement is reached.
Estimated Contract Execution	4/1/23	
Proposer Debrief	After Contractor is Selected	• Successful and unsuccessful Proposers are encouraged to request phone call or in person meeting with the City to discuss the strengths and weaknesses of their proposal. The intent of the debrief is to provide the Proposer with constructive feedback to equip them with information to effectively meet the City's needs and be successful in future proposals.

4.2 Proposal Content

Complete proposals will include the following. Proposers are encouraged to use this table as a checklist to ensure all components are included in their proposal.

	PROPOSAL	
☐	Narrative Proposal	The Narrative Proposal should provide a straightforward, concise delineation of capabilities to satisfy the RFP. Guidance on preparing a Narrative Proposal is detailed in Section 4.3.
☐	Cost Proposal	The Cost Proposal should be prepared using bid specification as well as providing all vendor specific specification sheets and additional data as necessary. Any deviations from desired specifications listed in Appendix A & B must be noted.

	PROPOSAL APPENDICES	
☐	Financial Stability	Proposers should include one or more of the following financial statements to provide the City with enough information to determine financial stability of the Proposer and subcontractor. • Financial Statement or Annual Report • Business tax return • Statement of income and balance sheet
☐	Other Addenda (if applicable)	Colored displays, promotional materials, and other collateral are not necessary or desired. However, if a complete response cannot be provided without referencing supporting documentation, it may be provided as an addendum clearly cited in the Narrative or Cost Proposal.
	MANDATORY ATTACHMENTS | *The following are included as Attachments in Long Beach Buys. They must be completed and signed by the individual legally authorized to bind the Proposer.*	
☐	A. Appendix A – Specifications	
☐	B. Appendix B – Specifications (Rescue)	
☐	C. Authorization & Certification	
☐	D. Equal Benefits Ordinance (EBO) Form	
☐	E. Debarment, Suspension, Ineligibility and Voluntary Exclusion Certificate	
	Attachments Which May be Submitted Upon Award | *Upon award, Awarded Contractors will be required to submit the following. We encourage you to take note of these requirements, and where possible, include available information as part of your proposal to expedite processing.*	
☐	F. W-9 Form	
☐	G. Proof of Registration with the California Secretary of State	
☐	H. Certificates of Insurance when requested by the City	
☐	I. Business License (not required to submit bid, required upon award)	
☐	**Contact Information** | *Ensure your organization's profile is up to date in Long Beach Buys, including an email address, phone number, and for any classifications you may qualify for.*	

4.3 Narrative Proposal Template

Proposers should develop a narrative proposal that includes all of the following information.

Organizational Capacity & Experience

PROPOSER CONTACT INFORMATION		
Organization	Company Name	
	Company Address	
	Federal Tax ID Number	
	Website	
Authorized Representative	Name	
	Title	
	Email Address	
	Phone Number	
Other Point of Contact (if required)	Name	
	Title	
	Email Address	
	Phone Number	
PROPOSER CAPACITY & EXPERIENCE		
What type of enterprise is the organization?		☐ Non-Profit ☐ Sole Proprietorship ☐ General Partnership ☐ Corporation *State and Date of incorporation:* _____ ☐ Limited Liability Company ☐ Other _____
Please describe why the organization is qualified to provide the services described in this RFP (1-2 paragraphs).		
Please describe the length of time the organization has been providing the services described in this RFP sentences.		
How many employees does the organization have in total and residing in Long Beach?		
Where are the representative(s) that would service the City's account located?		

Who are the key staff involved in the project? For each, please a name, title, and resume either as an attachment or 1 paragraph description.		
REFERENCES		
Reference 1	Company	
	Project Manager	
	Phone Number	
	Project Description	
	Project Start and End Dates	
Reference 2	Company	
	Project Manager	
	Phone Number	
	Project Description	
	Project Start and End Dates	
Reference 3	Company	
	Project Manager	
	Phone Number	
	Project Description	
	Project Start and End Dates	
Reference 4	Company	
	Project Manager	
	Phone Number	
	Project Description	
	Project Start and End Dates	
Reference 5	Company	
	Project Manager	
	Phone Number	
	Project Description	
	Project Start and End Dates	

SUB-CONTRACTOR CONTACT INFORMATION	
Does the proposal include subcontractors?	☐ Yes
	☐ No

If applicable, provide the following for all subcontractors included in this proposal.		
Organization	Company Name	
	Company Address	
Authorized Representative	Name	
	Title	
	Email Address	
	Phone Number	
Other Point of Contact (if required)	Name	
	Title	
	Email Address	
	Phone Number	
SUBCONTRACTOR CAPACITY & EXPERIENCE		
What type of enterprise is the organization?		☐ Non-Profit ☐ Sole Proprietorship ☐ General Partnership ☐ Corporation *State and Date of incorporation:* _____ ☐ Limited Liability Company ☐ Other _____
Which specific requirements of this RFP will the subcontractor perform?		
Please describe why the organization is qualified to provide the services described in this RFP.		
Please describe the length of time the organization has been providing the services described in this RFP.		
How many employees does the organization have nationally, locally, and residing in Long Beach?		
Where are the representative(s) that would service the City's account located?		

Methods of Approach

1. Please describe your proposed product.
2. Please explain the logic model for how you will achieve the target outcomes/outputs of the RFP.
3. Please summarize your proposed workplan with timelines for key milestones.
4. Please state how your proposal will meet the objective or criteria of this RFP.
5. Please outline what your company will need from the City to implement the contract successfully.
6. Please describe available local to Long Beach service and warranty support.

Communications & Reporting

1. Performance Reports: Please describe how you will provide performance updates, such as progress pictures and/or drawings, supply chain issues, etc.
2. Please explain how you will coordinate with the City to meet the objectives of the RFP.
3. The City requires that the Awarded Contractor provide proof of payment of any subcontractors used for this project. If the proposal includes subcontractors, please describe the plan for how the City will be notified of such payments.

5 Terms & Conditions

5.1 Acronyms/Definitions

1. Awarded Contractor: The organization/individual that is awarded a contract with the City of Long Beach for the services identified in this RFP.
2. City: The City of Long Beach and any department or agency identified herein.
3. Contractor / Proposer: Organization/individual submitting a proposal in response to this RFP.
4. Department / Division: City of Long Beach, Financial Management, Fleet Services Bureau

5. Evaluation Committee: An independent committee comprised solely of representatives of the City established to review proposals submitted in response to the RFP, evaluate the proposals, and select a Contractor.
6. May: Indicates something that is not mandatory but permissible.
7. RFP: Request for Proposals.
8. Shall / Must: Indicates a mandatory requirement. Failure to meet a mandatory requirement may result in the rejection of a proposal as non-responsive.
9. Should: Indicates something that is recommended but not mandatory. If the Proposer fails to provide recommended information, the City may, at its sole option, ask the Proposer to provide the information or evaluate the proposal without the information.
10. Subcontractor: Third party not directly employed by the Proposer who will provide services identified in this RFP.
11. Any acronyms or terms used in the Scope of Work or Additional Requirements from Funding Source.

5.2 Solicitation Terms & Conditions

1. The City reserves the right to alter, amend, or modify any provisions of this RFP, or to withdraw this RFP, at any time prior to the award of a contract pursuant hereto, if it is in the best interest of the City to do so.
2. The City reserves the right to request clarification of any proposal term from Proposers.
3. The City may contact the references provided; contact any Proposer to clarify any response; contact any current users of a Proposer's services; solicit information from any available source concerning any aspect of a proposal; and seek and review any other information deemed pertinent to the evaluation process.
4. The level and term of documentation required from the Proposer to satisfy the City will be commensurate with the size and complexity of the contract and Proposers should submit accordingly. If the information submitted by the Proposer, or available from other sources, is insufficient to satisfy the City as to the Proposer's contractual responsibility, the City may request additional information from the Proposer or may deem the proposal non-responsive.
5. The City reserves the right to waive informalities and minor irregularities in proposals received.

6. The City reserves the right to reject any or all proposals received prior to contract award.
7. The City's determination of the Proposer's responsibility, for the purposes of this RFP, shall be final.
8. Unless otherwise specified, the City prefers to award to a single Contractor but reserves the right to award contracts to multiple contractors.
9. The City shall not be obligated to accept the lowest priced proposal but will make an award in the best interests of the City after all factors have been evaluated.
10. If the City receives a single responsive, responsible proposal, the City may request an extension of the proposal acceptance period and/or conduct a price or cost analysis on such proposal. The Proposer shall promptly provide all cost or pricing data, documentation and explanation requested by the City to assist such analysis. By conducting such analysis, the City shall not be obligated to accept the single proposal. The City reserves the right to reject such proposal or any portion thereof.
11. Any irregularities or lack of clarity in the RFP should be brought to the Purchasing Division designee's attention as soon as possible so that corrective addenda may be furnished to Proposers.
12. Proposals must include any and all proposed terms and conditions, including, without limitation, written warranties, maintenance/service agreements, license agreements, lease purchase agreements and the Proposer's standard contract language. The omission of these documents may render a proposal non-responsive.
13. Alterations, modifications, or variations to a proposal may not be considered unless authorized by the RFP or by addendum or amendment.
14. Proposals which appear unrealistic in the terms of technical commitments, lack of technical competence, or are indicative of failure to comprehend the complexity and risk of this contract, may be rejected.
15. Proposals may be withdrawn by written notice received prior to the proposal opening time.
16. The price and amount of this proposal must have been arrived at independently and without consultation, communication, agreement, or disclosure with or to any other Contractor or prospective Contractor.

17. No attempt may be made at any time to induce any firm or person to refrain from submitting a proposal or to submit any intentionally high or noncompetitive proposal. All proposals must be made in good faith and without collusion.

18. Prices offered by Proposers in their proposals are an irrevocable offer for the term of the contract and any contract extensions. The Awarded Contractor agrees to provide the purchased services at the costs, rates and fees as set forth in their proposal in response to this RFP. No other costs, rates or fees shall be payable to the Awarded Contractor for implementation of their proposal.

19. The City is not liable for any costs incurred by Proposers prior to entering into a formal contract. Costs of developing the proposals or any other such expenses incurred by the Proposer in responding to the RFP, are entirely the responsibility of the Proposer, and shall not be reimbursed in any manner by the City.

20. Proposal will become public record after the award of a contract unless the proposal or specific parts of the proposal can be shown to be exempt by law. Each Proposer may clearly label all or part of a proposal as "CONFIDENTIAL" provided that the Proposer thereby agrees to indemnify and defend the City for honoring such a designation. The failure to so label any information that is released by the City shall constitute a complete waiver of any and all claims for damages caused by any release of the information.

21. A proposal submitted in response to this RFP must identify any subcontractors and outline the contractual relationship between the Proposer and each subcontractor. An official of each proposed subcontractor must sign and include as part of the proposal submitted in response to this RFP, a statement to the effect that the subcontractor has read and will agree to abide by the Proposer's obligations.

22. If the Contractor elects to use subcontractors, the City requires that the Awarded Contractor provide proof of payment of any subcontractors used for this project. Proposals shall include a plan by which the City will be notified of such payments.

23. Each Proposer must disclose any existing or potential conflict of interest relative to the performance of the contractual services resulting from this RFP. Any such relationship that might be perceived or represented as a conflict should be disclosed. The City reserves the right to disqualify any Proposer on the grounds of actual or apparent conflict of interest.

24. Each Proposer must include in its proposal a complete disclosure of any alleged significant prior or ongoing contract failures, any civil or criminal litigation or investigation pending which involves the Proposer or in which the Proposer has been judged guilty or liable. Failure to comply with the terms of this provision will disqualify any proposal. The City reserves the right to reject any proposal based upon the Proposer's prior history with the City or with any other party, which documents, without limitation, unsatisfactory performance, adversarial or contentious demeanor, significant failure(s) to meet contract milestones or other contractual failures.

25. The City reserves the right to negotiate final contract terms with any Proposers selected. The contract between the parties will consist of the RFP together with any modifications thereto, and the Awarded Contractor's proposal, together with any modifications and clarifications thereto that are submitted at the request of the City during the evaluation and negotiation process. In the event of any conflict or contradiction between or among these documents, the documents shall control in the following order of precedence: the final executed contract, the RFP, any modifications and clarifications to the Awarded Contractor's proposal, and the Awarded Contractor's proposal. Specific exceptions to this general rule may be noted in the final executed contract.

26. The City will not be responsible for or bound by any oral communication or any other information or contact that occurs outside the official communication process specified herein, unless confirmed in writing by the City Contact.

27. Any contract resulting from this RFP shall not be effective unless and until approved by the City Council / City Manager, as applicable.

28. The City will not be liable for Federal, State, or Local excise taxes.

29. Execution of Attachment A of this RFP shall constitute an agreement to all terms and conditions specified in the RFP, including all contract terms and conditions therein, except such terms and conditions that the Proposer expressly excludes.

30. Proposer understands and acknowledges that the representations above are material and important and will be relied on by the City in evaluation of the proposal. Any Proposer misrepresentation shall be treated as fraudulent concealment from the City of the true facts relating to the proposal.

31. Proposals shall be kept confidential until a contract is awarded.

32. No announcement concerning the award of a contract as a result of this RFP may be made without the prior written approval of the City.

Proposers are advised that any contract awarded pursuant to this procurement process that exceeds $100,000 shall be subject to the applicable provisions of Long Beach Municipal Code Section 2.73 et seq, the Equal Benefits Ordinance.

33. All Proposers shall complete and return, with their bid, the Equal Benefits Ordinance Compliance form contained in Attachment D, if applicable. Unless otherwise specified in the procurement package, Proposers do not need to submit with their bid supporting documentation proving compliance. However, supporting documentation verifying that the benefits are provided equally shall be required if the proposer is selected for award of a contract.

5.3 Contract Terms & Conditions

1. The Awarded Contractor will be the sole point of contract responsibility. The City will look solely to the Awarded Contractor for the performance of all contractual obligations which may result from an award based on this RFP, and the Awarded Contractor shall not be relieved for the non-performance of any or all subcontractors.

2. The Awarded Contractor must maintain, for the duration of its contract, insurance coverages as required by the City. Work on the contract shall not begin until after the Awarded Contractor has submitted acceptable evidence of the required insurance coverages.

3. The Long Beach Municipal Code (LBMC) requires all businesses operating in Long Beach to pay a business license tax. In some cases, the City may require a regulatory permit and/or evidence of a State or Federal license. Prior to issuing a business license, certain business types will require the business license application and/or business location to be reviewed by the Development Services, Fire, Health, and/or Police Departments. Additional information is available at www.longbeach.gov/finance/business_license.

4. All work performed in connection with construction shall be performed in compliance with all applicable laws, ordinances, rules and regulations of federal, state, county or municipal governments or agencies (including, without limitation, all applicable federal and state labor standards, including the prevailing wage provisions of Sections 1770 et seq. of the California Labor Code), and (b) all directions, rules and regulations of any fire marshal, health officer, building inspector, or other officer of every governmental agency now having or hereafter acquiring jurisdiction.

5. Awarded Contractor shall indemnify, protect and hold harmless City, its Boards, Commissions, and their officials, employees and agents ("Indemnified Parties"), from and against any and all liability, claims, demands, damage, loss, obligations, causes of action, proceedings, awards, fines, judgments, penalties, costs and expenses, including attorneys' fees, court costs, expert and witness fees, and other costs and fees of litigation, arising or alleged to have arisen, in whole or in part, out of or in connection with (1) Awarded Contractor's breach or failure to comply with any of its obligations contained in this Contract, including any obligations arising from the Awarded Contractor's compliance with or failure to comply with applicable laws, including all applicable federal and state labor requirements including, without limitation, the requirements of California Labor Code Section 1770 et seq. or (2) negligent or willful acts, errors, omissions or misrepresentations committed by Awarded Contractor, its officers, employees, agents, subcontractors, or anyone under Awarded Contractor's control, in the performance of work or services under this Contract (collectively "Claims" or individually "Claim").

6. In addition to Awarded Contractor's duty to indemnify, Awarded Contractor shall have a separate and wholly independent duty to defend Indemnified Parties at Awarded Contractor's expense by legal counsel approved by City, from and against all Claims, and shall continue this defense until the Claims are resolved, whether by settlement, judgment or otherwise. No finding or judgment of negligence, fault, breach, or the like on the part of Awarded Contractor shall be required for the duty to defend to arise. City shall notify Awarded Contractor of any Claim, shall tender the defense of the Claim to Awarded Contractor, and shall assist Awarded Contractor, as may be reasonably requested, in the defense.

7. If a court of competent jurisdiction determines that a Claim was caused by the sole negligence or willful misconduct of Indemnified Parties, Awarded Contractor's costs of defense and indemnity shall be (1) reimbursed in full if the court determines sole negligence by the Indemnified Parties, or (2) reduced by the percentage of willful misconduct attributed by the court to the Indemnified Parties.

8. Any requests for reasonable price adjustments must be submitted 60 days prior to the Contract annual anniversary date. Requests for adjustment in cost of labor and/or materials must be justified based upon verifiable criteria such as the Consumer Price Index, US City Averages, or other relevant indices.

9. If the Awarded Contractor elects to use subcontractors, Awarded Contractor agrees to require its subcontractors to indemnify Indemnified Parties and to provide insurance coverage to the same extent as Awarded Contractor.

10. If the Awarded Contractor elects to use subcontractors, the Awarded Contractor shall not allow any subcontractor to commence work until all insurance required of subcontractor is obtained.

11. The provisions of this section shall survive the expiration or termination of this Contract.

5.4 Additional Requirements

N/A

5.5 Protest Procedures

Who May Protest

Only a Proposer who has actually submitted a proposal is eligible to protest a contract awarded through a Request for Proposals (RFP). A Proposer may not rely on the protest submitted by another Proposer but must pursue its own protest.

Time for Protest

The City will post a notice of the intent to award a contract at least ten (10) business days before an award is made. The notice will be available to all Proposers who submitted a proposal via the City's electronic bid notification system at http://www.longbeach.gov/purchasing. A Proposer desiring to submit a protest for a proposal must do so within five (5) business days of the electronic notification of intent to award. The City Purchasing Agent must receive the protest by the close of business on the fifth (5th) business day following posting of notification of intent to award the contract. Proposers are responsible for registering with the City's electronic bid notification system and maintaining an updated Contractor profile. The City is not responsible for Proposers' failure to obtain notification for any reason, including but not limited to failure to maintain updated email addresses, failure to open/read electronic messages and failure of their own computer/technology equipment. The City's RFP justification memo will be available for review by protestors once the notification of intent to award has been posted via the City's electronic bid notification system.

Form of Protest

The protest must be in writing and signed by the individual who signed the proposal or, if the Proposer is a corporation, by an officer of the corporation, and addressed to the City Purchasing Agent. Protests must be submitted via the email address above. They must include a valid email address and phone number. Protests must set forth a complete and detailed statement of the grounds for the protest and include all relevant information to support the grounds stated and must refer to specific portions of the RFP and attachments upon which the protest is based. Once the protest is received by the

City Purchasing Agent, the City will not accept additional information on the protest unless the City requests it.

City Response to Protest

The City Purchasing Agent or designee will respond with a decision regarding the protest within five (5) business days of receipt of protest to the email address provided in the protest. This decision shall be final.

Limitation of Remedy

The procedure and time limits set forth herein are mandatory and are the Proposer's sole and exclusive remedy in the event of a protest. The Proposer's failure to comply with these procedures shall constitute a waiver of any right to further pursue a protest, including filing a Government Code Claim or initiation of legal proceedings.

EXHIBIT "A-2"

Scope of Work

	Meets Request	
	Yes	No
SPECIFICATIONS FOR A TRIPLE COMBINATION 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 should conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor.	X	
EXCEPTIONS These specifications reflect the type of fire apparatus that is desired at this time. Proposers shall indicate in the "yes/no" column if their proposal meets request on each item. If "no" is indicated, additional comments and justification with potential mitigating alternative solutions should be provided. If a product brand name is specified and is commercially available to all proposers, an exception to such items is not desirable.	X	
MAXIMUM OVERALL HEIGHT The maximum overall height of the apparatus shall be 113".	X	
WHEELBASE The wheelbase of the vehicle shall be no greater than 172.50.	X	
GVW RATING The gross vehicle weight rating shall be a minimum of 44,000.	X	
FRAME The chassis frame shall be built with 2 steel channels bolted to 5 cross members or more. The side rails shall be heat-treated steel measuring 10.25" x 3.50" x 0.375". Each rail shall have a section modulus of 16.00 cubic inches, yield strength of 120,000 psi, and a resisting bending moment (rbm) of 1,921,069 inch-pounds.	X	
FRAME REINFORCEMENT A full-length mainframe "C" liner shall be provided. The liner shall be an internal "C" design, heat-treated steel measuring 9.38" x 3.13" x .25". Each reinforcement member shall have a section modulus of 3.90 cubic inches, yield strength of 120,000 psi and resisting bending moment (rbm) of 938,762 in-lb.	X	

	Meets Request	
	Yes	No
In addition, a L-shaped steel channel reinforcement shall be located under each mainframe rail.		
FRONT NON-DRIVE AXLE The front axle shall be of the independent suspension design with a ground rating of 19,500 lb.	X	
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.	X	
The center cross members and side plates shall be constructed out of 80,000-psi yield strength steel.	X	
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.	X	
There shall be 9 grease fittings supplied, 1 on each control arm pivot and 11 on the steering gear extension.	X	
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.	X	
Camber at load shall be zero degrees for optimum tire life.	X	
The ball joint bearing shall be of low friction design and be maintenance free.	X	
Toe links that are adjustable for alignment of the wheel to the center of the chassis shall be provided.	X	
The wheel ends must have little to no bump steer when the chassis encounters a hole or obstacle.	X	
The steering linkage shall provide proper steering angles for the inside and outside wheel, based on the vehicle wheelbase.	X	
The axle shall have a turning angle of up to 45 degrees.	X	
FRONT SUSPENSION An independent front suspension shall be provided with a minimum ground rating of 19,500 lb.	X	

	Meets Request	
	Yes	No
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.	X	
Each wheel shall have a torsion bar type spring. In addition, each front wheel end shall also have energy absorbing jounce bumpers to prevent bottoming of the suspension.	X	
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.		
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.		
The independent suspension shall have been put through a durability test that simulated a minimum of 140,000 miles of inner city driving.		
FRONT SHOCK ABSORBERS Heavy-duty telescoping shock absorbers shall be provided on the front suspension.	X	
FRONT OIL SEALS Oil seals with viewing window shall be provided on the front axle.	X	
FRONT TIRES The front tires shall be Michelin 385/65R22.50, X Multi HL Z tread, rated for 22,000 lb. maximum axle load and 75 mph maximum speed.	X	
The tires shall be mounted on Alcoa 22.50" x 12.25" polished aluminum disc type wheels with a 10 stud, 11.25" bolt circle.	X	
REAR AXLE The rear axle shall be a Meritor™, Model RS-23-186, with a capacity of 24,000 lb.	X	
TOP SPEED OF VEHICLE NFPA 1901, 2016 edition requires limits on the top speed of vehicles. NFPA 4.15.2 requires that the maximum top speed of fire apparatus with a GVWR over 26,000 lb. shall not exceed either 68 mph or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower. NFPA 4.15.3 requires that if the combined water tank and foam agent tank on the fire apparatus exceed 1250 gallons or the GVWR of the vehicle is over 50,000 lb., the maximum top speed of the apparatus shall not exceed either 60 mph or the manufacturer's maximum fire service	X	

	Meets Request	
	Yes	No
speed rating for the tires installed on the apparatus, whichever is lower. It is the intention of the standard to improve safety by limiting the speed of all apparatus to 68 mph.	X	
A rear axle ratio shall be furnished to allow the vehicle to reach an approximate top speed of 68 MPH.	X	
REAR SUSPENSION The rear suspension shall be a Reyco model 79KB with a ground rating of 24,000 lb. Spring hangers and mounting components shall be cast. The suspension utilizes 2 attaching points with variable rate spring cams and rubber bushed adjustable torque arms.	X	
REAR OIL SEALS Oil seals shall be provided on the rear axle(s).	X	
REMOTE GREASE FITTING There shall be a remote grease fitting plumbed to an area accessible for maintenance for the rear suspension. It shall be located below the body rear of the drive axle	X	
REAR TIRES Rear tires shall be four (4) Michelin 12R22.50 radials, 16 ply all season XDN2 tread, rated for 27,120 lb. maximum axle load and 75 mph maximum speed.	X	
The tires shall be mounted on Alcoa 22.50" x 8.25" polished aluminum disc wheels with a 10 stud 11.25" bolt circle.	X	
TIRE PRESSURE MANAGEMENT There shall be a RealWheels LED AirSecure™ tire alert pressure management system provided, that shall monitor each tire's pressure. A sensor shall be provided on the valve stem of each tire for a total of 6 tires.	X	
The sensor shall calibrate to the tire pressure when installed on the valve stem for pressures between 10 and 200 psi. The sensor shall activate an integral battery-operated LED when the pressure of that tire drops 5 to 8 psi.	X	
Removing the cap from the sensor shall indicate the functionality of the sensor and battery. If the sensor and battery are in working condition, the LED shall immediately start to flash.	X	

	Meets Request	
	Yes	No
FRONT HUB COVERS Stainless steel hub covers shall be provided on the front axle. An oil level viewing window shall be provided.	X	
HUB COVERS (REAR) A pair of stainless-steel high-hat hub covers shall be provided on rear axle hubs. The covers shall be manufactured by Real Wheels, Inc, and shall come with the standard warranty.	X	
CHROME LUG NUT COVERS Chrome lug nut covers shall be supplied on front and rear wheels.	X	
FRONT AND REAR MUD FLAPS Mud flaps with a custom logo shall be installed behind the front and rear wheels of the apparatus.	X	
WHEEL CHOCKS There shall be 1 pair of Worden Safety Products, Model HWG-SB, wheel chocks provided.	X	
Heavy Duty, large, molded aluminum wheel chock with solid bottom, natural cast aluminum finish.	X	
WHEEL CHOCK BRACKETS There shall be 1 pair of Worden Safety model U815T mounting wheel chock brackets provided. The brackets shall be mounted one each side, behind the rear axle.	X	
ANTI-LOCK BRAKE SYSTEM The vehicle shall be equipped with a Wabco 4S4M, anti-lock braking system. The ABS shall provide a four (4) channel anti-lock braking control on both the front and rear wheels. A digitally controlled system that utilizes microprocessor technology shall control the anti-lock braking system. Each wheel shall be monitored by the system. When any wheel begins to lockup, a signal is shall be sent to the control unit. This control unit then shall reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.	X	
AUTOMATIC TRACTION CONTROL An anti-slip feature shall be included with the ABS. The Automatic Traction Control shall be used for traction in poor road and weather conditions. The Automatic Traction Control shall act as an electronic differential lock that shall not allow a driving wheel to spin, thereby supplying traction at all times. The ABS electronic control unit (ECU) shall	X	

	Meets Request	
	Yes	No
work with the engine ECU, sharing information concerning wheel slip. Engine ECU shall use information to control engine speed, allowing only as much throttle application as required for the available traction, regardless of how much the driver is asking for. An "off road traction" switch shall be provided on the instrument panel. Activation of the switch shall allow additional tire slip to let the truck climb out and get on top of deep snow or mud.		
BRAKES The service brake system shall be full air type.	X	
The front brakes shall be Knorr/Bendix disc type with a 17.00" ventilated rotor for improved stopping distance.	X	
The brake system shall be certified, third party inspected, for improved stopping distance.	X	
The rear brakes shall be Meritor™, Disc Plus, Model EX225, disc operated with automatic slack adjusters and a 17.00" ventilated rotor for improved stopping distance.	X	
BRAKE SYSTEM AIR COMPRESSOR The air compressor shall be a Cummins/WABCO with 25.9 cubic feet per minute output.	X	
BRAKE SYSTEM The brake system shall include: • Brake treadle valve • Heated automatic moisture ejector on air dryer • Total air system minimum capacity of 4,272 cubic inches • 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, with an automatic spring brake application at 40 psi • A pressure protection valve to prevent all air operated accessories from drawing air from the air system when the system pressure drops below 80 psi (550 kPa) • 1/4 turn drain valves on each air tank	X	
The air tank shall be primed and painted to meet a minimum 750-hour salt spray test.	X	

	Meets Request	
	Yes	No
To reduce the effects of corrosion, the air tank shall be mounted with stainless steel brackets (no exception).	X	
BRAKE SYSTEM AIR DRYER The air dryer shall be WABCO System Saver 1200 with spin-on coalescing filter cartridge and 100-watt heater.	X	
BRAKE LINES Color-coded nylon brake lines shall be provided. The lines shall be wrapped in a heat protective loom where necessary in the chassis.	X	
AIR INLET 1 air inlet with male coupling shall be provided. It shall allow air to be supplied to the apparatus brake system through a shoreline hose. The air inlet shall be recessed into the driver's side cab step riser. A check valve shall be provided to prevent reverse air flow. The inlet shall discharge into the "wet" tank of the brake system. A mating female coupling shall also be provided with the loose equipment.	X	
AIR OUTLET 1 air outlet shall be installed with a female coupling located on the driver side pump panel. This system shall tie into the "wet" tank of the brake system, include an 85-psi pressure protection valve in the outlet line to prevent the brake system from losing all air, and include a quarter turn shut off valve mounted at the tank. The valve and all hoses shall be mounted to the tank as high as possible to ensure maximum clearance and protect the lines from being damaged by brush and rocks during odd-road operations.	X	
RECESSED BOX FOR AIR FITTING 1 air inlet shall have an aluminum treadplate recessed box provided. The box(es) shall allow the air fitting to be recessed inside the stepwell to prevent damage in the forward driver side stepwell.	X	
REMOTE AIR TANK DRAIN There shall be a single remote drain valve provided to drain all air supply reservoirs at the same time. The drain valve shall be actuated from the side of the apparatus. The drain valve shall be located Forward of the driver side axle. Automatic valves shall be provided to isolate the reservoirs from one another when the drain is closed.	X	

	Meets Request	
	Yes	No
COMPRESSION FITTINGS ONLY Any nylon tube on the apparatus that is pneumatic shall be plumbed with compression type fittings where applicable. Push lock fittings shall not be acceptable for any pneumatic nylon tube plumbing.	X	
ENGINE The chassis shall be powered by an electronically controlled engine as described below:		

Make:	Cummins
Model:	X12
Power:	500 hp at 1900 rpm
Torque:	1700 lb.-ft at 1000 rpm
Governed Speed:	2000 rpm
Emissions Level:	EPA 2021
Fuel:	Diesel
Cylinders:	6
Displacement:	729 cubic inches (11.9L)
Starter:	Delco 39MT™
Fuel Filters:	Spin-on style primary filter with water separator and water-in-fuel sensor. Secondary spin-on style filter.

	X	
The engine shall include On-board diagnostics (OBD), which provides self-diagnostic and reporting. The system shall give the owner or repair technician access to state of health information for various vehicle sub systems. The system shall monitor vehicle systems, engine and after treatment. The system shall illuminate a malfunction indicator light on the dash console if a problem is detected.	X	
REMOTE MOUNTED ENGINE FILTERS The engine fuel and oil filters shall be remote mounted for ease of maintenance.	X	
HIGH IDLE A high idle switch shall be provided, inside the cab, on the instrument panel, that shall automatically maintain a preset 1000 engine rpm. A switch shall be installed, at the cab instrument panel, for activation/deactivation.	X	
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	X	

	Meets Request	
	Yes	No
switch. The light shall illuminate when the above conditions are met. The light shall be labeled "OK to Engage High Idle."		
ENGINE BRAKE A Jacobs® engine brake is to be installed with the controls located on the instrument panel within easy reach of the driver.	X	
The driver shall be able to turn the engine brake system on/off and have a high, medium, and low setting.	X	
The engine brake shall activate when the system is on and the throttle is released.	X	
The high setting of the brake application shall activate and work simultaneously with the variable geometry turbo (VGT) provided on the engine.	X	
The engine brake shall be installed in such a manner that when the engine brake is slowing the vehicle the brake lights are activated.	X	
The ABS system shall automatically disengage the auxiliary braking device, when required.	X	
CLUTCH FAN A fan clutch shall be provided. The fan clutch shall be automatic when the pump transmission is in "Road" position, and constantly engaged when in "Pump" position.	X	
ENGINE AIR INTAKE The engine air intake shall be located above the engine cooling package. It shall draw fresh air from the front of the apparatus through the radiator grille.	X	
The ember separator is designed to prevent road dirt and recirculating hot air from entering the engine.	X	
The ember separator shall be easily accessible by tilting the cab.	X	
EXHAUST SYSTEM The exhaust system shall include a Single Module™ aftertreatment device to meet current EPA standards. The exhaust system shall be stainless steel from the turbo to the inlet of the aftertreatment device and shall be 5.00" in diameter. An insulation wrap shall be provided on all exhaust pipes between the turbo and aftertreatment device to minimize the heat loss to the aftertreatment device. The exhaust shall terminate horizontally ahead of the right-side rear wheels. A tailpipe diffuser shall be provided to reduce the temperature of the exhaust as it exits. Heat deflector shields shall be provided to isolate chassis and body components from the heat of the tailpipe diffuser.	X	

	Meets Request	
	Yes	No
EXHAUST MODIFICATION 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 diffuser shall be 7.00". There shall be a clearance of 4.00" completely 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.	X	
RADIATOR The radiator and the complete cooling system shall meet or exceed NFPA and engine manufacturer cooling system standards.	X	
For maximum corrosion resistance and cooling performance, the entire radiator core shall be constructed using long life aluminum alloy. The radiator core shall consist of aluminum fins, having a serpentine design, brazed to aluminum tubes. No solder joints or leaded material of any kind shall be acceptable in the core assembly.	X	
The radiator core shall have a minimum front area of 1060 square inches.	X	
Supply tank shall be made of heavy-duty glass-reinforced nylon and the return tank shall be mode of aluminum. Both tanks shall be crimped onto the core assembly using header tabs and a compression gasket to complete the radiator core assembly. There shall be a full steel frame around the inserts to enhance cooling system durability and reliability.	X	
The radiator shall be compatible with commercial antifreeze solutions.	X	
The radiator assembly shall be isolated from the chassis frame rails with rubber isolators to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven terrain.	X	
The radiator shall include a de-aeration/expansion tank. For visual coolant level inspection, the radiator shall have a built-in sight glass. The radiator shall be equipped with a 15-psi pressure relief cap.	X	
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.	X	
Shields or baffles shall be provided to prevent recirculation of hot air to the inlet side of the radiator.	X	

	Meets Request	
	Yes	No
COOLANT LINES Gates, or Goodyear, rubber hose shall be used for all engine coolant lines installed by the chassis manufacturer.	X	
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.	X	
RADIATOR SKID PLATE A lower radiator skid plate shall be supplied for protection. The skid plate shall be constructed of 0.25" steel plate.	X	
FUEL TANK A 65-gallon fuel tank shall be provided and mounted at rear of 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).	X	
A .75" drain plug shall be provided in a low point of the tank for drainage.	X	
A fill inlet shall be located on the left hand and right-hand sides of the body and be covered with a hinged, spring-loaded, stainless-steel door that is marked "Ultra Low Sulfur - Diesel Fuel Only."	X	
A .50" diameter vent shall be provided running from top of tank to just below fuel fill inlets.	X	
The tank shall meet all FHWA 393.67 requirements including a fill capacity of 95 percent of tank volume.	X	
Servicing the fuel tank pick-up tubes and fuel gauge sending unit shall be capable of being accomplished by draining fuel and dropping tank.	X	
All fuel lines shall be provided as recommended by the engine manufacturer.	X	
DIESEL EXHAUST FLUID TANK 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.	X	
A 0.50" drain plug shall be provided in a low point of the tank for drainage.	X	
A fill inlet shall be located on the driver's side of the body and be covered with a hinged, spring loaded, brushed stainless steel door that is marked "Diesel Exhaust Fluid Only".	X	

	Meets Request	
	Yes	No
The tank shall meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing.	X	
The tank shall include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.	X	
FUEL PRIMING PUMP A Cummins automatic electronic fuel priming pump shall be integrated as part of the engine.	X	
FUEL COOLER An air to fuel cooler shall be installed in the engine fuel return line.	X	
FUEL FILL DOOR A brushed stainless steel fuel fill door shall be installed.	X	
FUEL CAP A Velvac® brass fuel cap shall be provided.	X	
FUEL SEPARATOR The engine shall be equipped with a Racor in-line spin-on fuel and water separator in addition to the engine fuel filters.	X	
TRANSMISSION An Allison 6th generation, Model EVS 4000P, electronic, torque converting, automatic transmission shall be provided.	X	
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.	X	
2 PTO openings shall be located on left side and top of converter housing (positions 8 o'clock and 1 o'clock).	X	
A transmission temperature gauge with an amber light and buzzer shall be installed on the cab instrument panel.	X	
TRANSMISSION SHIFTER A 6-speed push button shift module shall be mounted to right of driver on console. Shift position indicator shall be indirectly lit for after dark operation.	X	
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.	X	

	Meets Request	
	Yes	No
TRANSMISSION COOLER A Modine plate and fin transmission oil cooler shall be provided using engine coolant to control the transmission oil temperature.	X	
DOWNSHIFT MODE (W/ENGINE BRAKE) The transmission shall be provided with an aggressive downshift mode.	X	
This shall provide earlier transmission downshifts to 3rd gear from 6th gear, resulting in improved engine braking performance.	X	
DRIVELINE Drivelines shall be a heavy-duty metal tube and be equipped with Spicer® 1810 universal joints.	X	
The shafts shall be dynamically balanced before installation.	X	
A splined slip joint shall be provided in each driveshaft where the driveline design requires it. The slip joint shall be coated with Glidecoat® or equivalent.	X	
STEERING Dual Sheppard, Model M110, steering gears, with integral heavy-duty power steering, shall be provided. For reduced system temperatures, the power steering shall incorporate an air to oil cooler and an Eaton, Model VN20, hydraulic pump with integral pressure and flow control. All power steering lines shall have wire braded lines with crimped fittings.	X	
A tilt and telescopic steering column shall be provided to improve fit for a broader range of driver configurations.	X	
STEERING WHEEL The steering wheel shall be 18.00" in diameter, have tilting and telescoping capabilities, and a 2-spoke design.	X	
LOGO AND CUSTOMER DESIGNATION ON HORN BUTTON The steering wheel shall have an emblem containing the fire apparatus manufacturer's logo and customer name. The emblem shall have 3 rows of text for the customer's department name. There shall be a maximum of 8 characters in the first row, 11 characters in the second row and 11 characters in the third row.	X	
The first row of text shall be: Long		
The second row of text shall be: Beach		

	Meets Request	
	Yes	No
The third row of text shall be: Fire Dept.		
AUTOMATIC CHASSIS LUBRICATION A Vogel Automatic Lubrication System shall be provided. The lubrication shall be supplied while the vehicle ignition switch is active to allow a uniform application of grease to the locations listed. The electronic control unit that forms part of the system shall activate the pump after an adjustable interval time. The unit shall control and monitor pump operation and report any faults via an indicator light on the driver's dashboard of the cab. The lubrication system reservoir, which requires a 15.00" wide x 14.50" high x 6.25" deep mounting area, shall be located to be determined at preconstruction on the apparatus. - Independent Suspension Control Arm Pivot Points - Rear Axle Slack Adjusters - Rear Axle Brake Cam Screws - Rear Suspension Spring Pins - Rear Suspension Shackle Pins - Walking Beam Pins Tandem axle, if applicable	X	
BUMPER A 1-piece, stainless steel bumper, minimum of 10.00" high, shall be attached to the front of the frame.	X	
A 9.00" channel shall be mounted directly behind the bumper for additional strength.	X	
The bumper shall be extended 10.00" from front face of cab.	X	
Gravel Pan A gravel pan, constructed of bright aluminum treadplate, shall be furnished between the bumper and cab face. The gravel pan shall be properly supported from the underside to prevent flexing and vibration of the aluminum treadplate.	X	
LIFT AND TOW MOUNTS 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.	X	
The lift and tow mounts with eyes shall be painted the same color as the frame.		
TOW EYES 2 chrome tow eyes shall be mounted through the front face of the bumper.		
The inner and outer edges of the tow eyes shall have a .25" radius.	X	
Tow eyes shall be mounted directly to the bumper frame.		

	Meets Request	
	Yes	No
Cutouts shall be provided in the front face of bumper to allow tow eyes to extend out the front.	X	
The tow eyes shall be designed and positioned to allow up to a 9,000 lb. straight horizontal pull in line with the centerline of the vehicle.	X	
The tow eyes shall not be used for lifting of the apparatus.	X	
TOW HOOKS 2 chromed steel tow hooks shall be installed under the bumper and attached to the front frame members.	X	
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.	X	
The tow hooks shall not be used for lifting of the apparatus.	X	
FRONT BUMPER NOTCH The front bumper shall be notched for recessing of the Q2B siren. The notch shall be designed so that the bumper is 1 continuous piece. The notch shall be welded in place for strength with a continuous top and bottom flange. All areas shall be polished for appearance. The siren shall be located on the left side of the bumper.	X	
CAB The cab shall be designed specifically for the fire service and manufactured by the chassis builder.	X	
The cab shall be built by the apparatus manufacturer in a facility located on the manufacturer's premises (no exception).	X	
For reasons of structural integrity and enhanced occupant protection, the cab shall be a heavy-duty design, constructed to the following minimal standards.	X	
The cab shall have 12 main vertical structural members located in the A-pillar (front cab corner posts), B-pillar (side center posts), C-pillar (rear corner posts), and rear wall areas. The A-pillar shall be constructed of solid A356-T5 aluminum castings. The B-pillar and C-pillar shall be constructed from 0.13" wall extrusions. The rear wall shall be constructed of two (2) 2.00" x 2.00" outer aluminum extrusions and two (2) 2.00" x 1.00" inner aluminum extrusions. All main vertical structural members shall run from the floor to 4.625" x 3.864" x 0.090" thick roof extrusions to provide a cage-like structure with the A-pillar and roof extrusions being welded into a 0.25" thick corner casting at each of the front corners of the roof assembly.	X	

	Meets Request	
	Yes	No
The front of the cab shall be constructed of a 0.13" firewall plate, covered with a 0.090" front skin (for a total thickness of 0.22"), and reinforced with a full width x 0.50" thick cross-cab support located just below the windshield and fully welded to the engine tunnel. The cross-cab support shall run the full width of the cab and weld to each A-pillar, the 0.13" firewall plate, and the front skin.	X	
The cab floors shall be constructed of 0.125" thick aluminum plate and reinforced at the firewall with an additional 0.25" thick cross-floor support providing a total thickness of 0.375" of structural material at the front floor area. The front floor area shall also be supported with two (2) triangular 0.30" wall extrusions that also provides the mounting point for the cab lift. This tubing shall run from the floor wireway of the cab to the engine tunnel side plates, creating the structure to support the forces created when lifting the cab.	X	
The cab shall be 96.00" wide (outside door skin to outside door skin) to maintain maximum maneuverability (no exception).	X	
The overall height (from the cab roof to the ground) of approximately 99.00". The overall height listed shall be calculated based on a truck configuration with the lowest suspension weight rating, the smallest diameter tires for the suspension, no water weight, no loose equipment weight, and no personnel weight. Larger tires, wheels, and suspension shall increase the overall height listed.	X	
The floor to ceiling height inside the crew cab shall be 54.50" in the center and outboard positions.	X	
The crew cab floor shall measure 46.00" from the rear wall to the back side of the rear facing seat risers.	X	
The medium block engine tunnel, at the rearward highest point (knee level), shall measure 61.50" to the rear wall. The big block engine tunnel shall measure 51.50" to the rear wall.	X	
The crew cab shall be a totally enclosed design with the interior area completely open to improve visibility and verbal communication between the occupants.	X	
The cab shall be a full tilt cab style.	X	
A 3-point cab mount system with rubber isolators shall improve ride quality by isolating chassis vibrations from the cab.	X	

	Meets Request	
	Yes	No
CAB ROOF DRIP RAIL For enhanced protection from inclement weather, a drip rail shall be furnished on the sides of the cab. The drip rail shall be painted to match the cab roof and bonded to the sides of the cab. The drip rail shall extend the full length of the cab roof.	X	
INTERIOR CAB INSULATION The cab shall include 1.00" insulation in the ceiling, 1.50" insulation in the side walls, and 2.00" insulation in the rear wall to maximize acoustic absorption and thermal insulation.	X	
FENDER LINERS Full circular inner fender liners in the wheel wells shall be provided.	X	
PANORAMIC WINDSHIELD A 1-piece safety glass windshield shall be provided with over 2,775 square inches of clear viewing area. The windshield shall be full width and shall provide the occupants with a panoramic view. The windshield shall consist of 3 layers: outer light, middle safety laminate, and inner light. The outer light layer shall provide superior chip resistance. The middle safety laminate layer shall prevent the windshield glass pieces from detaching in the event of breakage. The inner light shall provide yet another chip resistant layer. The cab windshield shall be bonded to the aluminum windshield frame using a urethane adhesive. A custom frit pattern shall be applied on the outside perimeter of the windshield for a finished automotive appearance.	X	
WINDSHIELD WIPERS 3 electric windshield wipers with washer shall be provided that meet FMVSS and SAE requirements.	X	
The washer reservoir shall be able to be filled without raising the cab.	X	
ENGINE TUNNEL Engine hood side walls shall be constructed of 0.375" aluminum. The top shall be constructed of 0.125" aluminum and shall be tapered at the top to allow for more driver and passenger elbow room.	X	
The engine hood shall be insulated for protection from heat and sound. The noise insulation keeps the dBA level within the limits stated in the current NFPA 1901 standards.	X	
The engine tunnel shall be no higher than 17.00" off the crew cab floor	X	

	Meets Request	
	Yes	No
CAB REAR WALL EXTERIOR COVERING The exterior surface of the rear wall of the cab shall be overlaid with bright aluminum treadplate that covers the entire rear wall.	X	
CAB LIFT A hydraulic cab lift system shall be provided consisting of an electric powered hydraulic pump, dual lift cylinders, and necessary hoses and valves.	X	
Hydraulic pump shall have a manual override for backup in the event of electrical failure.	X	
Lift controls shall be located in the driver side stepwell.	X	
The cab shall be capable of tilting 43 degrees to accommodate engine maintenance and removal.	X	
The cab shall be locked down by a 2-point normally closed spring-loaded hook type latch that fully engages after the cab has been lowered. The system shall be hydraulically actuated to release the normally closed locks when the cab lift control is in the raised position and cab lift system is under pressure. When the cab is completely lowered and system pressure has been relieved, the spring-loaded latch mechanisms shall return to the normally closed and locked position.	X	
The hydraulic cylinders shall be equipped with a velocity fuse that protects the cab from accidentally descending when the control is located in the tilt position.	X	
For increased safety, a redundant mechanical stay arm shall be provided that must be manually put in place on the left side between the chassis and cab frame when the cab is in the raised position. This device shall be manually stowed to its original position before the cab can be lowered.	X	
Cab Lift Interlock The cab lift system shall be interlocked to the parking brake. The cab tilt mechanism shall be active only when the parking brake is set, and the ignition switch is in the on position. If the parking brake is released, the cab tilt mechanism shall be disabled.	X	
GRILLE A bright finished aluminum mesh grille screen, inserted behind a grille surround, shall be provided on the front center of the cab. The grille surround shall be painted black #101.	X	

	Meets Request	
	Yes	No
MIRRORS A Retrac Aerodynamic, Model 613295, dual vision, motorized, west coast style mirror with chrome finish shall be mounted on each side of the front cab door with spring loaded retractable arms. The flat glass and convex glass shall be adjustable with a remote control within reach of the driver.	X	
DOORS To enhance entry and egress to the cab, the forward cab door openings shall be a minimum of 37.50" wide x 63.37" high. The crew cab doors shall be located on the sides of the cab and shall be constructed in the same manner as the forward cab doors. The crew cab door openings shall be a minimum of 34.30" wide x 63.37" high.	X	
The forward cab and crew cab doors shall be constructed of extruded aluminum with a nominal material thickness of 0.093". The exterior door skins shall be constructed from 0.090" aluminum.	X	
A customized, vertical, pull-down type door handle shall be provided on the exterior of each cab door. The finish of the door handle shall be chrome/black. The exterior handle shall be designed specifically for the fire service to prevent accidental activation and shall provide 4.00" wide x 2.00" deep hand clearance for ease of use with heavy gloved hands.	X	
Each door shall also be provided with an interior flush, open style paddle handle that shall be readily operable from fore and aft positions and be designed to prevent accidental activation. The interior handles shall provide 4.00" wide x 1.25" deep hand clearance for ease of use with heavy gloved hands.	X	
The cab doors shall be provided with both interior (rotary knob) and exterior (keyed) locks exceeding FMVSS standards. The keys shall be Model 751. The locks shall be capable of activating when the doors are open or closed. The doors shall remain locked if locks are activated when the doors are opened, then closed.	X	
A full length, heavy duty, stainless steel, piano-type hinge with a 0.38" pin and 11-gauge leaf shall be provided on all cab doors. There shall be double automotive-type rubber seals around the perimeter of the door framing and door edges to ensure a weather-tight fit.	X	
A chrome handle shall be provided on the inside of each cab door for ease of entry.	X	
A red webbed grab handle shall be installed on the crew cab door stop strap. The grab handles shall be securely mounted.	X	

	Meets Request	
	Yes	No
The bottom cab step at each cab door location shall be located below the cab doors and shall be exposed to the exterior of the cab.	X	
Door Panels The inner cab door panels shall be constructed out of brushed stainless steel. The door panels shall be designed and installed in 2 pieces. The cab door panels shall be removable without disconnecting door and window mechanisms.	X	
ELECTRIC OPERATED CAB DOOR WINDOWS All 4 cab doors shall be equipped with electric operated windows with flush mounted automotive style switches.	X	
The driver's side lower instrument panel shall also have 3 controls, officer's door window and both crew cab door windows.	X	
CAB STEPS A dual step shall be provided below each cab and crew cab door. The steps shall be designed with a grip pattern punched into bright aluminum treadplate material providing support, slip resistance, and drainage. The steps shall be a bolt-in design to minimize repair costs should they need to be replaced. The forward cab steps shall be a minimum 25.00" wide, and the crew cab steps shall be 21.50" wide with a 7.00" minimum depth. The step design raises the middle step higher and closer to the cab floor, resulting in a 11.50" distance from the step to cab floor in the cab and a 10.25" distance from the step to cab floor in the crew cab. Stepping distances from the ground to first step shall be approximately 14.00" and from first step to middle step shall be approximately 12.00".	X	
The vertical surface of the upper step well shall be aluminum treadplate.	X	
The first step shall be lit by a white 12-volt DC LED light provided on the step.	X	
CAB EXTERIOR HANDRAILS A 1.25" diameter slip-resistant, knurled aluminum handrail shall be provided adjacent to each cab and crew cab door opening to assist during cab ingress and egress.	X	
STEP LIGHTS There shall be 6 white LED step lights with chrome housing installed for cab and crew cab access steps. • 1 light for the left access steps. • 2 lights for the left side crew cab access steps. • 2 lights for the right-side crew cab access steps.	X	

	Meets Request	
	Yes	No
• 1 light for the right-side access step.		
In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed 10 inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same 10-inch distance below the light.	X	
The lights shall be activated when the battery switch is on, and the adjacent door is opened.	X	
FENDER CROWNS Stainless steel fender crowns shall be installed at the cab wheel openings.	X	
GRAB HANDLE(S) There shall be 4 black offset rubber covered grab handle(s) mounted to be determined at pre-construction to assist in entering the cab and/or crew cab. The grab handle(s) shall be securely mounted.	X	
BEHIND RIGHT SIDE CAB DOOR WINDOW TINT The window behind the right-side front cab door shall be tinted privacy dark gray.	X	
RIGHT SIDE ROLLUP CREW CAB DOOR WINDOW TINT The rollup window in the right-side crew cab door shall be tinted privacy dark gray.	X	
LEFT SIDE ROLLUP CREW CAB DOOR WINDOW TINT The rollup window in the left side crew cab door shall be tinted privacy dark gray.	X	
STORAGE COMPARTMENT Provided under the forward-facing crew cab seats shall be a transverse compartment. The compartment shall be divided into upper and lower sections by a removable divider located at the cab floor. The upper section shall be 13.75" wide x 9.00" high x full width (transverse) of the crew cab. The lower section shall be 15.00" wide x 24.50" high x 15.00" deep on both sides. The compartment shall extend from the bottom of the cab to top of the seat riser.	X	
There shall be 2 double pan doors painted to match the cab exterior with a locking D-Ring latch with #751 key, 1 on each side of the cab with a web strap for each exterior door provided as a door stop. The clear door opening of each compartment door shall be 10.25" wide x 32.00" high.	X	
The exterior access shall be provided with a brushed stainless steel scuff plate on the lower door frame.	X	

	Meets Request	
	Yes	No
There shall be 1 drop down door, painted to match the cab interior with 2 non-locking flush pull latches with no louvers on the forward face of the seat riser.	X	
The compartment interior shall be painted spatter gray.	X	
Compartment Light There shall be 4 white LED strip lights, 1 horizontally mounted in each lower and upper exterior compartment. The lights shall be controlled by an automatic door switch.	X	
CAB ROOF COVERING The horizontal surface of the cab roof shall be sprayed with UL-LX® polyurethane/polyurea elastomer abrasive resistant material. There shall be an area on the rear crew cab roof that shall be 42.00" from side to side and 20.00" front to back left painted job color for lettering.	X	
The UL-LX abrasive resistant material shall be dark gray.	X	
2 strips of aluminum treadplate, 16.00" wide, shall be installed on each side of the cab and crew cab. The covering shall extend from the rear edge of the crew cab to just behind the lightbar. Edges and fastening screws shall be properly caulked to prevent water from leaking under aluminum. Side warning lights shall not be mounted on top of treadplate.	X	
CAB INSULATION The underside of the crew cab floor shall be perforated foil faced insulation shall be over a closed cell foam affixed with pressure sensitive adhesive and further secured with mechanical fasteners to maximize acoustic absorption and thermal insulation.	X	
ACCESS DOORS There shall be 2 double pan doors painted to match the cab exterior with a locking, black finish D-Ring latch with #751 key, 1 on each side of the cab, provided over the front wheel well. A web strap for each exterior door shall be provided as a door stop. The clear door opening shall be 17.00" wide x 23.50" high.	X	
STORAGE COMPARTMENT ON CAB ROOF A storage compartment shall be provided on the crew cab roof. The compartment shall be located to the rear of the cab roof and centered side to side.	X	
The compartment shall be approximately 60.00" wide x 48.00" deep x 10.00" high with a top opening door. Door shall have a hinge on the front side and shall be held open with gas cylinder strut. The door shall lap the compartment sides and latch with 2 butterfly latches at the rear.	X	

	Meets Request	
	Yes	No
The compartment and door shall be constructed of aluminum treadplate.	X	
The compartment shall be bolted to the cab roof with .25" spacers to allow air flow between the compartment and cab roof.	X	
WEDGE FOOTREST A wedge footrest shall be provided in each rear facing seat riser in place of the rear facing heaters. They shall be constructed of bright aluminum treadplate. Each footrest shall be removable.	X	
CAB DASH The driver side dash, switch panel located to the right of the driver, and center console shall be constructed of aluminum and painted fire smoke gray.	X	
The officer side dash shall be a flat top design with an upper beveled edge to provide easy maintenance and shall be constructed out of aluminum and painted to match the cab interior.	X	
The instrument gauge cluster shall be surrounded with a high impact ABS plastic contoured to the same shape of the instrument gauge cluster.	X	
MOUNTING PLATE ON ENGINE TUNNEL Equipment installation provisions shall be installed on the engine tunnel.	X	
A .25" smooth aluminum plate shall be bolted to the top surface of the engine tunnel. The plate shall follow the contour of the engine tunnel and shall run the entire length of the engine tunnel. The plate shall be spaced off the engine tunnel .50" to allow for wire routing below the plate.	X	
The mounting surface shall be painted to match the cab interior.	X	
CAB INTERIOR The cab interior shall be constructed of primarily metal (painted aluminum) to withstand the severe duty cycles of the fire service.	X	
The engine tunnel shall be padded and covered, on the top and sides, with dark silver gray 36-ounce leather grain vinyl resistant to oil, grease, and mildew.	X	
For durability and ease of maintenance, the cab interior side walls shall be painted aluminum. The rear wall shall be painted aluminum.	X	

	Meets Request	
	Yes	No
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.	X	
Forward portion of cab headliner shall permit easy access for service of electrical wiring or other maintenance needs.	X	
All wiring shall be placed in metal raceways. Routing through holes in tubing shall not be accepted due to chaffing that installation shall cause.	X	
CAB INTERIOR UPHOLSTERY The cab interior upholstery shall be 36 oz dark silver gray vinyl.	X	
CAB INTERIOR PAINT The cab interior metal surfaces, excluding the rear heater panels, shall be painted fire smoke gray, vinyl texture paint.	X	
The rear heater panels shall be painted black, vinyl textured paint.	X	
CAB FLOOR 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.	X	
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 0.25" thick closed cell foam (no water absorption) which offers a sound dampening material for reducing sound levels.	X	
The rubber floor material shall have aluminum treadplate overlay. The aluminum treadplate floor shall entirely cover the rubber floor material.	X	
The vertical surface of the upper step wells in the crew cab shall also be covered with floor mat overlaid with aluminum treadplate.	X	
DEFROST/AIR CONDITIONING SYSTEM A ceiling mounted combination heater, defroster and air conditioning system shall be installed in the cab above the engine tunnel area.	X	
Cab Defroster A 54,000 BTU heater-defroster unit with 690 SCFM of air flow shall be provided inside the cab. The heater-defrost shall be installed in the forward portion of the cab ceiling. Air outlets shall be strategically located in the cab header extrusion per the following:	X	

	Meets Request	
	Yes	No
• 1 adjustable shall be directed towards the left side cab window • 1 adjustable shall be directed towards the right-side cab window • 6 fixed outlets shall be directed at the windshield	X	
The defroster shall be capable of clearing 98 percent of the windshield and side glass when tested under conditions where the cab has been cold soaked at 0 degrees Fahrenheit for 10 hours, and a 2 ounce per square inch layer of frost/ice has been able to build up on the exterior windshield. The defroster system shall meet or exceed SAE J382 requirements.	X	
Cab/Crew Auxiliary Heater There shall be no auxiliary heater provided in the rear facing seat risers.	X	
Air Conditioning A condenser shall be a minimum 59,644 BTU output that meets and exceeds the performance specification shall be mounted on the radiator. Mounting the condenser below the cab or body would reduce the performance of the system and shall not be acceptable.	X	
The air conditioning system shall be capable of cooling the average cab temperature from 100 degrees Fahrenheit to 75 degrees Fahrenheit at 50 percent relative humidity within 30 minutes. The cooling performance test shall be run only after the cab has been heat soaked at 100 degrees Fahrenheit for a minimum of 4 hours.	X	
The evaporator unit shall be installed in the rear portion of the cab ceiling over the engine tunnel. The evaporator shall include 1 high performance heating core, 1 high performance cooling core with (1) plenum directed to the front and 1 plenum directed to the rear of the cab. The rear plenum shall be covered with a formed plastic cover.	X	
The evaporator unit shall have a 52,000 BTU at 690 SCFM rating that meets and exceeds the performance specifications.	X	
Adjustable air outlets shall be strategically located on the forward plenum cover per the following:	X	
• 4 shall be directed towards the seating position on the left side of the cab • 4 shall be directed towards the seating position on the right side of the cab	X	
Adjustable air outlets shall be strategically located on the rear plenum cover per the following:		
• Minimum of 5 shall be directed towards crew cab area	X	

	Meets Request	
	Yes	No
A high efficiency particulate air (HEPA) filter shall be included for the system. Access to the filter cover shall be secured with 4 screws.	X	
The air conditioner refrigerant shall be R-134A and shall be installed by a certified technician.	X	
Climate Control An automotive style controller shall be provided to control the heat and air conditioning system within the cab. The controller shall have 3 functional knobs for fan speed, temperature, and air flow distribution (front to rear) control.	X	
The system shall control the temperature of the cab and crew cab automatically by pushing the center of the fan speed control knob. Rotate the center temperature control knob to set the cab and crew cab temperature.	X	
The AC system shall be manually activated by pushing the center of the temperature control knob. Pushing the center of the air flow distribution knob shall engage the AC for max defrost, setting the fan speeds to 100 percent and directing all air flow to the overhead forward position.	X	
The system controller shall be located within panel position #12.	X	
Gravity Drain Tubes 2 condensate drain tubes shall be provided for the air conditioning evaporator. The drip pan shall have 2 drain tubes plumbed separately to allow for the condensate to exit the drip pan. No pumps shall be provided.	X	
SUN VISORS There shall be 2 vinyl covered sun visors provided. The sun visors shall be located above the windshield with 1 mounted on each side of the cab.	X	
There shall be a black plastic thumb latch provided to help secure each sun visor in the stowed position.	X	
GRAB HANDLES A black rubber covered grab handle shall be mounted on the door post of the driver and officer's side cab door to assist in entering the cab. The grab handles shall be securely mounted to the post area between the door and windshield.	X	

	Meets Request	
	Yes	No
ENGINE COMPARTMENT LIGHTS There shall be 1 Whelen, Model 3SC0CDCR, 12-volt DC, 3.00" white LED light(s) with Whelen, Model 3FLANGEC, chrome flange kit(s) installed under the cab to be used as engine compartment illumination.	X	
These light(s) shall be activated automatically when the cab is raised.		
ACCESS TO ENGINE DIPSTICKS For access to the engine oil and transmission fluid dipsticks, there shall be a door on the engine tunnel, inside the crew cab. The door shall be on the rear wall of the engine tunnel, on the vertical surface.	X	
The engine oil dipstick shall allow for checking only. The transmission dipstick shall allow for both checking and filling.	X	
The door shall have a rubber seal for thermal and acoustic insulation. 1 flush lift and turn latch shall be provided on the access door.	X	
MAP POCKET Installed on each front door shall be a map pocket. The pocket shall be 14.00" wide x 13.50" high x 1.50" deep and constructed of stainless steel. The inside sheet shall have half-moon cutouts.	X	
SEATING CAPACITY The seating capacity in the cab shall be 6.	X	
DRIVER SEAT A USSC Valor air suspension R-back seat shall be provided in the cab for the driver. For increased convenience, the seat shall include a manual control to adjust the horizontal position. To provide flexibility for multiple driver configurations, the seat shall have a reclining back, adjustable from 15 degrees back to 45 degrees forward.	X	
The seat shall be furnished with a 3-point, shoulder type seat belt.	X	
There shall be no additional contaminant mitigation vinyl covers shipped loose with the seat.	X	
OFFICER SEAT A USSC, P1A, SCBA air suspension seat shall be provided in the cab for the officer. For optimal comfort, the seat shall be provided with 17.00" deep cushion. For increased convenience, the seat shall include a manual control to adjust the height (3.00" travel) and horizontal position (4.25" travel).	X	

	Meets Request	
	Yes	No
The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 0.75" 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.	X	
The seat shall be furnished with a 3-point, shoulder type seat belt.	X	
Shipped loose with the seat shall be no additional contaminant mitigation vinyl covers.	X	
REAR FACING DRIVER SIDE OUTBOARD SEAT There shall be 1 rear facing, USSC Valor SCBA seat provided at the driver side outboard position in the crew cab. For optimal comfort, the seat shall be provided with a 15.00" deep cushion.	X	
The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 0.75" 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.	X	
The seat shall be furnished with a 3-point, shoulder type seat belt.	X	
There shall be no additional contaminant mitigation vinyl covers shipped loose with the seat.	X	
REAR FACING PASSENGER SIDE OUTBOARD SEAT There shall be 1 rear facing, USSC Valor seat provided at the passenger side outboard position in the crew cab. For optimal comfort, the seat shall be provided with a 15.00" deep cushion.	X	
The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 0.75" 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.	X	
The seat shall be furnished with a 3-point, shoulder type seat belt.	X	
There shall be no additional contaminant mitigation vinyl covers shipped loose with the seat.	X	
FORWARD FACING DRIVER SIDE OUTBOARD SEAT There shall be 1 forward facing, USSC Valor R-back foldup seat provided at the driver side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 17.00" deep cushion and an adjustable recline back. To ensure safe operation, the	X	

	Meets Request	
	Yes	No
seat shall be equipped with a sensor in the seat cushion and belt receptacle that shall activate an alarm indicating the seat is occupied but not buckled.		
The seat shall be furnished with a 3-point, shoulder type seat belt.	X	
There shall be no additional contaminant mitigation vinyl covers shipped loose with the seat.	X	
FORWARD FACING CENTER CABINET A forward-facing cabinet shall be provided in the crew cab at the center position. The cabinet shall be mounted flush to the ceiling and shall include the angled wireway. The front corners of the cabinet shall be chamfered.	X	
The cabinet shall be 34.00" wide x 20.00" high x 8.00" deep. There shall be a drop in door panel. A lip shall be provided at the lower opening that will secure the base of the panel and 2 Southco push button latches shall secure the top.	X	
A removable aluminum mounting plate shall be provided on the rear wall of the cabinet. The plate shall be mounted vertically on .50" spacer stand-offs and be painted to match the cab interior.	X	
The floor of the cabinet shall include ventilation knockouts.	X	
The cabinet and panel shall be constructed of aluminum treadplate.	X	
Cabinet Light There shall be 1 white LED strip light installed on the right side of the interior cabinet door opening and 1 white LED strip light installed on the left side of the interior cabinet door opening. The lighting shall be controlled by a rocker switch on exterior of the cabinet.	X	
FORWARD FACING PASSENGER SIDE OUTBOARD SEAT There shall be 1 forward facing, USSC, foldup high back seat provided in the passenger side outboard position in the crew cab. The seat back shall be a R-back style with an adjustable recline angle. For optimal comfort, the seat shall be provided with 17.00" deep cushion. To ensure safe operation, the seat shall be equipped with a sensor in the seat cushion and belt receptacle that shall activate an alarm indicating the seat is occupied but not buckled.	X	
The seat shall be furnished with a 3-point, shoulder type seat belt.	X	
There shall be no additional contaminant mitigation vinyl covers shipped loose with the seat.	X	

	Meets Request	
	Yes	No
REAR FACING CENTER CABINET A rear-facing cabinet shall be provided on the top rear of the engine tunnel. The rear of the cabinet shall be angled to match the engine tunnel.	X	
The cabinet shall be 34.00" wide x 10.00" high x 14.00" deep with 1 lift up door painted to match the cab interior with 2 non-locking lever latches. The door shall include 2 pneumatic stay arms to hold the door in the open position. The door opening shall be provided on the front of the cabinet, facing the crew cab. The clear door opening of the cabinet shall be 32.25" wide x 11.00" high.	X	
The cabinet shall include no adjustable shelves or trays in the cabinet interior.	X	
The cabinet shall include no louvers.		
The cabinet shall be constructed of smooth aluminum and painted to match the cab interior.	X	
Cabinet Light There shall be 1 white LED strip light installed horizontally above the interior cabinet door opening. The lighting shall be controlled by an automatic door switch.	X	
SEAT UPHOLSTERY All seat upholstery shall be leather grain gray vinyl resistant to oil, grease, and mildew. The cab shall have 6 seating positions.	X	
AIR BOTTLE HOLDERS All SCBA type seats in the cab shall have a "Hands-Free" auto clamp style bracket in its backrest. For efficiency and convenience, the bracket shall include an automatic spring clamp that allows the occupant to store the SCBA bottle by simply pushing it into the seat back. For protection of all occupants in the cab, in the event of an accident, the inertial components within the clamp shall constrain the SCBA bottle in the seat and shall exceed the NFPA standard of 9G. Bracket designs with manual restraints (belts, straps, buckles) that could be inadvertently left unlocked and allow the SCBA to move freely within the cab during an accident, shall not be acceptable.	X	
There shall be a quantity of 3 SCBA brackets.		
SEAT EMBROIDERY The seats in the cab and crew cab, including flip up seat backs, shall be provided with custom embroidery. The Fire Department shall determine what the embroidery shall be by providing pictures at the time of order.	X	

	Meets Request	
	Yes	No
The custom logo shall be provided in place of the standard OEM logo. Flip up seat backs the logo shall be provided on the center of the seat back.		
The embroidery shall be provided on 6 seats.	X	
SEAT BELTS		
All cab seating positions shall have red seat belts. To provide quick, easy use for occupants wearing bunker gear, the female buckle, and seat belt webbing length shall meet or exceed the current edition of NFPA 1901 and CAN/ULC - S515 standards.	X	
The 3-point shoulder type seat belts shall include height adjustment. This adjustment shall optimize the belts effectiveness and comfort for the seated firefighter. The 3-point shoulder type seat belts shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.	X	
The 3-point shoulder type belts shall also include the ReadyReach D-loop assembly to the shoulder belt system. The ReadyReach feature adds an extender arm to the D-loop location placing the D-loop in a closer, easier to reach location.	X	
Flip up seats shall include a 3-point shoulder type belts only.	X	
To ensure safe operation, the seats shall be equipped with seat belt sensors in the seat cushion and belt receptacle that shall activate an alarm indicating a seat is occupied but not buckled.	X	
HELMET BRACKET		
There shall be 2 helmet bracket(s) provided in the cab. Each bracket is capable of storing 2 Phenix First Due Series 1500 style helmets. The base dimensions shall be 13.00" x 22.00". The bracket(s) shall be painted black and located to be mounted at final.	X	
CAB DOME LIGHTS		
There shall be 4 Weldon 808* series, dual LED dome lights with black bezels provided. 2 lights shall be mounted above the inside shoulder of the driver and officer and 2 lights shall be installed and located, 1 on each side of the crew cab.	X	
The color of the LED's shall be red and white.	X	
The white LED's shall be controlled by the door switches and the lens switch.	X	
The color LED's shall be controlled by the lens switch.	X	

	Meets Request	
	Yes	No
ENHANCED SOFTWARE FOR CAB AND CREW CAB DOME LIGHTS The cab and crew cab dome lights shall remain on for zero seconds for improved visibility after the doors are closed or immediately if the vehicle's transmission is put into gear.	X	
ADDITIONAL OVERHEAD MAP LIGHT There shall be 1 additional rectangular based adjustable map light(s) with white LED's installed in the cab and mounted to the headliner above the Captain. Each light shall include a switch on the light housing.	X	
The light switch(es) shall be connected directly to the battery power.	X	
CAB SPOTLIGHT There shall be 2 Golight® Stryker ST™, Model 30**4ST, white LED spotlights located on the cab roof, mounted outside the forward lightbar. The spotlights shall be mounted to the surface of the cab roof.	X	
These lights may be load managed when the parking brake is applied.	X	
SPOTLIGHT CONTROLLER There shall be 1 wired dash mounted remote provided for each spotlight.	X	
Spotlight Controller Locations The remotes to control the spotlights shall be located 1 within reach of the driver and 1 within reach of the officer.	X	
CAB INSTRUMENTATION The cab instrument panel shall include gauges, an LCD display, 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.	X	
Gauges The gauge panel shall include the following 10 ivory faced gauges with chrome bezels to monitor vehicle performance: • Voltmeter gauge (volts): o Low volts (11.8 VDC)	X	

	Meets Request	
	Yes	No
▪ Amber caution indicator on the information center with intermittent alarm	X	
▪ Amber caution light on gauge assembly	X	
o High volts (15.5 VDC)	X	
▪ Amber caution indicator on the information center with intermittent alarm		
▪ Amber caution light on gauge assembly		
o Very low volts (11.3 VDC)	X	
▪ Red warning indicator on the information center with a steady alarm		
▪ Amber caution light on gauge assembly		
o Very high volts (16.0 VDC)		
▪ Red warning indicator on the information center with a steady alarm	X	
▪ Amber caution light on gauge assembly		
• Engine Tachometer (RPM)	X	
• Speedometer MPH (Major Scale), KM/H (Minor Scale)	X	
• Fuel level gauge (Empty - Full in fractions):	X	
o Low fuel (1/8 full)		
▪ Amber caution indicator on the information center with intermittent alarm		
▪ Amber caution light on gauge assembly		
o Very low fuel (1/32 full)		
▪ Red caution indicator on the information center with steady alarm		
▪ Amber caution light on gauge assembly		
• Engine Oil pressure Gauge (PSI):		
o Low oil pressure to activate engine warning lights and alarms	X	
▪ Red caution indicator on the information center with steady alarm		
▪ Amber caution light on gauge assembly		
• Front Air Pressure Gauges (PSI):	X	
o Low air pressure to activate warning lights and alarm		
▪ Red warning indicator on the information center with a steady alarm		
▪ Amber caution light on gauge assembly		
• Rear Air Pressure Gauges (PSI):		
o Low air pressure to activate warning lights and alarm	X	
▪ Red warning indicator on the information center with a steady alarm		
▪ Amber caution light on gauge assembly		
• Transmission Oil Temperature Gauge (Fahrenheit):		
o High transmission oil temperature activates warning lights and alarm	X	

	Meets Request	
	Yes	No
▪ Amber caution indicator on the information center with intermittent alarm ▪ Amber caution light on gauge assembly • Engine Coolant Temperature Gauge (Fahrenheit): o High engine temperature activates an engine warning light and alarms ▪ Amber caution indicator on the information center with intermittent alarm ▪ Amber caution light on gauge assembly • Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions): o Low fluid (1/8 full) ▪ Amber indicator light in gauge dial	X	
All gauges shall perform prove out at initial power-up to ensure proper performance.		
Indicator Lamps To promote safety, the following telltale indicator lamps shall be located on the instrument panel in clear view of the driver. The indicator lamps shall be "dead-front" design that is only visible when active. The colored indicator lights shall have descriptive text or symbols.	X	
The following amber telltale lamps shall be present: • 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) • Side roll fault (where applicable) • Front air bag fault (where applicable)		
The following red telltale lamps shall be present:	X	

	Meets Request	
	Yes	No
• Warning (stop sign symbol) • Seat belt • Parking brake • Stop engine • Rack down		
The following green telltale lamps shall be provided: • Left turn • Right turn • Battery on	X	
The following blue telltale lamp shall be provided: • High beam		
Alarms Audible steady tone warning alarm: A steady audible tone alarm shall be provided whenever a warning message is present.	X	
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.	X	
Alarm silence: Any active audible alarm shall be able to be silenced by holding the ignition switch at the top position for 3 to 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.	X	
Indicator Lamp and Alarm Prove-Out A system shall be provided which automatically tests telltale indicator lights and alarms located on the cab instrument panel. Telltale indicators and alarms shall perform prove-out at initial power-up to ensure proper performance.	X	
Control Switches 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.	X	

	Meets Request	
	Yes	No
Headlight/Parking light switch: A 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.	X	
Panel back lighting intensity control switch: A 3-position momentary rocker switch shall be provided. Pressing the top half of the switch, "Panel Up" increases the panel back lighting intensity and pressing the bottom half of the switch, "Panel Down" decreases the panel back lighting intensity. Pressing the half or bottom half of the switch several times shall allow back lighting intensity to be gradually varied from minimum to maximum intensity level for ease of use.	X	
Ignition switch: A 3-position maintained/momentary rocker switch shall be provided. The first switch position shall turn off and deactivate vehicle ignition. The second switch position shall activate vehicle ignition and shall perform prove-out on the telltale indicators and alarms for 3 to 5 seconds after the switch is turned on. A green indicator lamp is activated with vehicle ignition. The third momentary position shall temporarily silence all active cab alarms. An alarm "chirp" may continue as long as alarm condition exists. Switching ignition to off position shall terminate the alarm silence feature and reset function of cab alarm system.	X	
Engine start switch: A 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.	X	
Hazard switch shall be provided on the instrument panel or on the steering column.	X	
Heater, defroster, and air conditioning control panel.		
Windshield wiper control shall include low, high, and intermittent modes.	X	
Turn signal arm: A self-canceling turn signal with high beam headlight shall be provided.	X	
Parking brake control: An air actuated push/pull park brake control valve shall be provided.	X	
Chassis horn control: Activation of the chassis horn control shall be provided through the center of the steering wheel.	X	
High idle engagement switch: A momentary 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	X	

	Meets Request	
	Yes	No
engage. A green indicator lamp integral to the high idle engagement switch shall indicate when the high idle function is engaged.		
"OK to Engage High Idle" indicator lamp: A green indicator light shall be provided next to the high idle activation switch to indicate that the interlocks have been met to allow high idle engagement.	X	
Emergency switching shall be controlled by multiple individual warning light switches for various groups or areas of emergency warning lights. An Emergency Master switch provided on the instrument panel that enables or disables all individual warning light switches is included.	X	
An additional "Emergency Master" button shall be provided on the lower left-hand corner of the gauge panel to allow convenient control of the "Emergency Master" system from inside the driver's door when standing on the ground.	X	
Custom Switch Panels The design of cab instrumentation shall allow for emergency lighting and other switches to be placed within easy reach of the operator thus improving safety. There shall be positions for up to 4 switch panels in the lower instrument console and up to 6 switch panels in the overhead visor console. All switches have backlit labels for low light conditions.	X	
Diagnostic Panel 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 ABS systems to provide blink codes should a problem exist.	X	
The diagnostic panel shall include the following: • Engine diagnostic port • Transmission diagnostic port • ABS diagnostic port • Roll sensor diagnostic port • Command Zone USB diagnostic port • 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)	X	

	Meets Request	
	Yes	No
Dashboard Display A digital display shall be integral to the gauge panel. The display shall be capable of showing simple graphical images as well as text.	X	
The following are examples of data from the display: • Odometer • Trip mileage • PTO hours • Fuel consumption • Engine hours		
The display should also be capable of displaying INFO, CAUTION, and WARNING messages. Text messages shall automatically activate to describe the cause of an audible caution or warning alarm. The display shall be capable of displaying multiple text messages should more than one caution or warning condition exist.	X	
AIR RESTRICTION INDICATOR A high air restriction warning indicator light LCD message with amber warning indicator and audible alarm shall be provided.	X	
- Ammeter.		
"DO NOT MOVE APPARATUS" INDICATOR A flashing red indicator light, located in the driving compartment, shall be illuminated automatically per the current NFPA requirements. The light shall be labeled "Do Not Move Apparatus If Light Is On."	X	
The same circuit that activates the Do Not Move Apparatus indicator shall activate a pulsing alarm when the parking brake is released.	X	
DO NOT MOVE TRUCK MESSAGES Messages shall be displayed on the Command Zone™, color display located within sight of the driver whenever they Do Not Move Truck light is active. The messages shall designate the item or items not in the stowed for vehicle travel position (parking brake disengaged).	X	
The following messages shall be displayed (where applicable): • Do Not Move Truck • DS Cab Door Open (Driver Side Cab Door Open) • PS Cab Door Open (Passenger's Side Cab Door Open)	X	

	Meets Request	
	Yes	No
• 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) • 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		
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.	X	
SWITCH PANELS The built-in switch panels shall be located in the lower console or overhead console of the cab.	X	
The switches shall be rocker-type and include an integral indicator light. For quick, visual indication the switch shall be illuminated whenever the switch is active. A 2-ply, scratch resistant laser engraved Gravoply label indicating the use of each switch shall be placed below the switches. The label shall allow light to pass through the letters for improved visibility in low light conditions. Switches and light source are integral to the switch panel assembly.	X	
WIPER CONTROL 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, an intermittent wiper control and windshield washer switch. The control shall have a "return to park" provision, which allows the wipers to return to the stored position when not in use.	X	
SPARE CIRCUIT There shall be 4 pair of wires, including a positive and a negative, installed on the apparatus.	X	

	Meets Request	
	Yes	No
The above wires shall have the following features: • The positive wire shall be connected directly to the battery power. • The negative wire shall be connected to ground. • Wires shall be protected to 6 amps at 12 volts DC. • Power and ground shall terminate in the switch panel to be determined at pre-construction. • Termination shall be a Kussmaul part number 091-219-5, switch panel dual USB charger socket. • Wires shall be sized to 125 percent of the protection.	X	
This circuit(s) may be load managed when the parking brake is applied.	X	
SPARE CIRCUIT There shall be 1 pair of wires, including a positive and a negative, installed on the apparatus.	X	
The above wires shall have the following features: • The positive wire shall be connected directly to the battery power • The negative wire shall be connected to ground • Wires shall be protected to 30 amps at 12 volts DC • Power and ground shall terminate on the officer's side of the engine tunnel • Termination shall be with a 10-place bus bar with screws and removable cover • Wires shall be sized to 125% of the protection	X	
This circuit(s) may be load managed when the parking brake is set.	X	
SPARE CIRCUIT There shall be 4 pair of wires, including a positive and a negative, installed on the apparatus.	X	
The above wires shall have the following features: • The positive wire shall be connected directly to the battery power. • The negative wire shall be connected to ground. • Wires shall be protected to 15 amps at 12 volts DC. • Power and ground shall terminate 1) on the officer's dash, 1) on the driver's dash, one each side of the rear engine tunnel. • Termination shall be with 15-amp, power point plug with rubber cover. • Wires shall be sized to 125 percent of the protection.	X	

	Meets Request	
	Yes	No
This circuit(s) may be load managed when the parking brake is set.	X	
SPARE CIRCUIT There shall be 2 pair of wires, including a positive and a negative, installed on the apparatus.	X	
The above wires shall have the following features: • The positive wire shall be connected directly to the battery power • The negative wire shall be connected to ground • Wires shall be protected to 15 amps at 12 volts DC • Power and ground shall terminate on the officer's side of the engine tunnel • Termination shall be with heat shrinkable butt splicing • Wires shall be sized to 125 percent of the protection	X	
The circuit(s) may be load managed when the parking brake is set.	X	
OUTLINE, RED, MUX SWITCHING There shall be 2 switch panel rocker switches outlined in red for identification purposes. The location of the switches shall be to be determined.	X	
RADIO AM/FM WB/USB/BT There shall be 1 Aptiv, Heavy-Duty, AM/FM/WB with front panel USB port, integrated BlueTooth.	X	
FEATURES: Built-in Bluetooth® profile is selectable between Audio Streaming and/ or Hands-Free phone operation (utilizing the vehicle's audio system and a remote mic* - up to 10 devices can be easily stored in the radio memory for fast pairing) - FRONT PANEL USB PORT- gives a direct connect location for memory devices w/ USB interface, to play stored music and/or charge the device and have iPod® control through the radio - Back-lit Display Lighting - GREEN - PA Function (PA Microphone & Cable sold separately The stereo radio shall be mounted within reach of the officer. The quantity and location of the speakers shall be 1 pair of 5.25" speakers in the cab and 1 pair of 5.25" speakers in the crew cab. The type and location of the antenna shall be a roof-mounted rubber antenna located as far to the front and centered side to side as possible, on the lower portion of the cab roof.	X	
INFORMATION CENTER An information center employing a 7.00" diagonal touch screen color LCD display shall be encased in an ABS plastic housing.	X	

	Meets Request	
	Yes	No
The information center shall have the following specifications: • 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 • Grey with black accents • Sunlight Readable • Linux operating system • Minimum of 1000nits rated display • Display can be changed to an available foreign language • An LCD display integral to the cab gauge panel shall be included as outlined in the cab instrumentation area. • Programmed to read US Customary	X	
General Screen Design Where possible, background colors shall be used to provide "At a Glance" vehicle information. If information provided on a screen is within acceptable limits, a green background shall be used.	X	
If a caution or warning situation arises the following shall occur: • An amber background/text color shall indicate a caution condition • A red background/text color shall indicate a warning condition • 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 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 or symbol.	X	
Home/Transit Screen This screen shall display the following: • Vehicle Mitigation (if equipped)	X	

	Meets Request	
	Yes	No
• Water Level (if the water level system includes compatible communications to the information center) • Foam Level (if the foam level system includes compatible communications to the information center) • Seat Belt Monitoring Screen • Tire Pressure Monitoring (if equipped) • Digital Speedometer • Active Alarms		
On Scene Screen This screen shall display the following and shall be auto activated with pump engaged (if equipped): • Battery Voltage • Fuel • Oil Pressure • Coolant Temperature • RPM • Water Level (if equipped) • Foam Level (if equipped) • Foam Concentration (if equipped) • Water Flow Rate (if equipped) • Water Used (if equipped) • Active Alarms	X	
Virtual Buttons There shall be 4 virtual switch panel screens that match the overhead and lower lighting and HVAC switch panels.	X	

Page Screen
The page screen shall display the following and allow the user to progress into other screens for further functionality:
 	
• Diagnostics
  o Faults
  ▪ Listed by order of occurrence
  ▪ Allows to sort by system
  o Interlock
  ▪ Throttle Interlocks
  ▪ Pump Interlocks (if equipped)
	X	

	Meets Request	
	Yes	No
▪ Aerial Interlocks (if equipped) ▪ PTO Interlocks (if equipped) o Load Manager ▪ A list of items to be load managed shall be provided. The list shall provide a description of the load. ▪ The lower the priority numbers the earlier the device shall be shed should a low voltage condition occur. ▪ The screen shall indicate if a load has been shed (disabled) or not shed. ▪ "At a glance" color features are utilized on this screen. o Systems ▪ Command Zone • Module type and ID number • Module Version • Input or output number • Circuit number connected to that input or output • Status of the input or output • Power and Constant Current module diagnostic information ▪ Foam (if equipped) ▪ Pressure Controller (if equipped) ▪ Generator Frequency (if equipped) o Live Data ▪ General Truck Data • Maintenance o Engine oil and filter o Transmission oil and filter o Pump oil (if equipped) o Foam (if equipped) o Aerial (if equipped) • Setup o Clock Setup o Date & Time ▪ 12- or 24-hour format ▪ Set time and date o Backlight ▪ Daytime ▪ Nighttime ▪ Sensitivity		

	Meets Request	
	Yes	No
o Unit Selection o Home Screen o Virtual Button Setup o On Scene Screen Setup o Configure Video Mode ▪ Set Video Contrast ▪ Set Video Color ▪ Set Video Tint		
• Do Not Move o 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 ▪ 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) ▪ Deck Gun (if applicable) ▪ Light Tower (if applicable) ▪ Hatch Door (if applicable) ▪ Stabilizers (if applicable) ▪ Steps (if applicable)	X	
• Notifications o View Active Alarms ▪ Shows a list of all active alarms including date and time of the occurrence is shown with each alarm ▪ Silence Alarms - All alarms are silenced	X	
• Timer Screen • HVAC (if equipped) • Tire Information (if equipped) • Ascendant Set Up Confirmation (if equipped)	X	
Button functions and button labels may change with each screen.		

	Meets Request	
	Yes	No
VEHICLE DATA RECORDER There shall be a vehicle data recorder (VDR) capable of reading and storing vehicle information provided.	X	
The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A USB cable can be used to connect the VDR to a laptop to retrieve required information. The program to download the information from the VDR will be available to download on-line.	X	
The vehicle data recorder shall be capable of recording the following data via hardwired and/or CAN inputs: • Vehicle Speed - MPH • Acceleration - MPH/sec • Deceleration - MPH/sec • Engine Speed - RPM • Engine Throttle Position - % of Full Throttle • ABS Event - On/Off • Seat Occupied Status - Yes/No by Position • Seat Belt Buckled Status - Yes/No by Position • Master Optical Warning Device Switch - On/Off • Time - 24 Hour Time • Date - Year/Month/Day	X	
Seat Belt Monitoring System A seat belt monitoring system (SBMS) shall be provided on the color display. The SBMS shall be capable of monitoring up to 10 seating positions indicating the status of each seat position per the following: • Seat Occupied & Buckled = Green LED indicator illuminated • Seat Occupied & Unbuckled = Red LED indicator with audible alarm • No Occupant & Buckled = Red LED indicator with audible alarm • No Occupant & Unbuckled = No indicator and no alarm	X	
The seat belt monitoring screen shall become active on the color display when: • The home screen is active: o and there is any occupant seated but not buckled or any belt buckled with an occupant.	X	

	Meets Request	
	Yes	No
○ and there are no other Do Not Move Apparatus conditions present. As soon as all Do Not Move Apparatus conditions are cleared, the SBMS shall be activated.		
The SBMS shall include an audible alarm that shall warn that an unbuckled occupant condition exists when the apparatus is traveling at 15 mph and above.	X	
NFPA 1901, 2016 edition, section 14.1.3.9.1 states that the warning system shall consist of an audible warning device that can be heard at all seating positions designed to be occupied while the vehicle is in motion and a visual display visible to the driver or the officer showing the condition of each seating position.	X	
Vehicle Data Recordable Input When the VDR is active, the seat belt monitoring system alarm shall be silenced through the standard silence alarm switch. The alarm shall chirp in intervals to remind the operator that an alarm is still sounding.	X	
A second silence alarm switch shall be located in a cab switch panel on the captain's side.	X	
RADIO AND INTERCOM SYSTEM INCLUDING INSTALLATION BY 911 VEHICLE, ANAHEIM, CA	X	
Radio System • 2 Motorola APX8500 All Band Remote Head Radio • 2 Additional Speakers in cab for VHF & UHF Radio • 1 Panasonic CF-33 • 1 Panasonic CF-33 Port Replicator and Power Supply • 1 iKey 13.1 inch Hi -Bright Monitor and Keyboard with Touch Pad • 1 Cradle Point IBR900 Modem (supplied by City) • (CS)5 Antenna Kits / Configuring / Connections / Metering • 1 Multiband Antenna for Sierra Wireless Intercom System • 6 911 Vehicle Headsets w/volume and mic mute • 1 911Vehicle Dual Radio Intercom System • 6 In Cab Roof Jack Stations w/ volume mod4 Dash Mounted PTT switches • 1 Pump panel Intercom Station • 1 Tail Board Intercom Station • 500 Beldon 8723 4-Conductor Shielded Cable per ft. • 2 Mobile Radio Interfaces • Power Distribution		

	Meets Request	
	Yes	No
• 1 Misc. Parts and Materials (Panels, Mounts, Etc.) • 1 LVD for Battery and Ignition Powered Items • 1 Power Distribution Fuse Block 8 x 30 amps • 1 Ground Distribution Block and 15' Black 4 Ga. Cable • 1 Battery Switched Relay (intercom/radio ignition fuse block) • 1 Install 150 Amp Breaker in place of MIDI Fuse Other Equipment • 1 AM/FM/CD/Bluetooth Car Stereo4 In Cab Speakers & Antenna • 4 Pelican Flashlights (CS)1Launch Port iPad Charger (supplied by City) • 1 T.I.C. Camera Charger (supplied by City) • 1 Drager Charger (supplied by City) • 1 KNOX Box (supplied by City) • 4 Pac Set Holders installed on cab doors • 1 Build / Spray / Mount New Communications Cabinet Board • 1 Wire Chase for Power and Ground to Comm Cabinet • 1 Custom Console on Doghouse for MDC Mount and Wire Chase with rear drawer and cup holders • 2 Flashlight Mounting Plates • 1 Binder Storage Box and jacket/helmet platform behind Capt. Seat • 1 Dash mounted storage tray for clipboard • 2 Cup Holders on Dash for Capt. and Engineer • 1 Aluminum Angle Lip installed at Capt. Dash • 1 Helmet Holder installed on back seat headliner (supplied by City) • 2 Additional Handheld radio pockets for rear seat phone storage		
VEHICLE CAMERA SYSTEM There shall be a color vehicle camera system provided with the following: • 1 camera located at the rear of the apparatus, pointing rearward, displayed automatically with the vehicle in reverse. • 1 camera located on the right side of the apparatus, pointing rearward, displayed automatically with the right-side turn signal. • 1 camera located on the left side of the apparatus, pointing rearward, displayed automatically with the left side turn signal.	X	

	Meets Request	
	Yes	No
The camera images shall be displayed on a 7.00" LCD display located in the view of the driver in the custom dash, per instrument panel layout the display shall include manual camera activation capability and audio from the rear camera.	X	
The following components shall be included: • 1 M0700136DC Display • 1 SV-CW134639CAI rear camera • 2 CS134404CI Side cameras • All necessary cables	X	
VEHICLE CAMERA GUARD There shall be 1 aluminum treadplate guard(s) fastened over the vehicle camera(s) located over the camera.	X	
ELECTRICAL POWER CONTROL SYSTEM 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.	X	
Distribution centers located throughout the vehicle shall contain battery powered studs for supplying customer installed equipment thus providing a lower cost of ownership.	X	
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.	X	
Solid-State Control System 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, electronic control modules to include black housings, a power indicator and status indicator located near their point of use to	X	

	Meets Request	
	Yes	No
reduce harness lengths and improve reliability. The control system shall comply with SAE J1939-11 recommended practices.		
The control system shall operate as a master-slave system whereas the main control module instructs all other system components. The system shall contain patented Mission Critical software that maintains critical vehicle operations in the unlikely event of a main controller error. The system shall utilize a Real Time Operating System (RTOS) fully compliant with OSEK/VDX™ specifications providing a lower cost of ownership.	X	
For increased reliability and simplified use, the control system modules shall include the following attributes: • Green LED indicator light for module power • Red LED indicator light for network communication stability status • Control system self-test at activation and continually throughout vehicle operation • No moving parts due to transistor logic • Software logic control for NFPA mandated safety interlocks and indicators • Integrated electrical system load management without additional components • Integrated electrical load sequencing system without additional components • Customized control software to the vehicle's configuration • Factory and field programmable to accommodate changes to the vehicle's operating parameters	X	
To assure long life and operation in a broad range of environmental conditions, the solid-state control system modules shall meet the following specifications: • Module circuit board shall meet SAE J771 specifications • Operating temperature from -40C to +70C • Storage temperature from -40C to +70C • Vibration to 50g	X	
IP67 rated enclosure (Totally protected against dust and protected against the effect of temporary immersion between 15 centimeters and 1 meter)	X	
Operating voltage from 8 volts to 32 volts DC	X	
The main controller shall activate status indicators and audible alarms designed to provide warning of problems before they become critical.	X	

	Meets Request	
	Yes	No
Circuit Protection and Control Diagram 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.	X	
On-Board Electrical System Diagnostics The on-board information center shall include the following diagnostic information: • Text description of active warning or caution alarms • Simplified warning indicators • Amber caution indication with intermittent alarm • Red warning indication with steady tone alarm	X	
Advanced diagnostic feature shall be provided in this control system. From the Command Zone display or connected wireless device, these features allow the user to monitor the real-time status of every input or output on the vehicle. It also allows users logged in as an administrator to force on inputs or outputs to assist the troubleshooting process.	X	
TCU Module with Wi-Fi An in-cab module shall provide Wi-Fi wireless interface and data logging capability (no exception). The Wi-Fi interface shall comply with IEEE 802.11 b/g/n capabilities while communicating at 2.4 Gigahertz. The module shall communicate through a white Wi-Fi antenna allowing a line of site communication range of up to 300 feet with a roof mounted antenna.	X	
The module shall transmit a password protected web page to a Wi-Fi enabled device (i.e., most smart phones, tablets, or laptops) allowing two levels of user interaction. The firefighter level shall allow vehicle monitoring of the vehicle and firefighting systems on the apparatus. The technician level shall allow diagnostic access to inputs and outputs installed on the Command Zone™, control and information system.	X	
The TCU capability shall record faults from the engine, transmission, ABS and Command Zone™, control and information systems as they occur. No other data shall be recorded at the time the fault occurs. The data TCU shall provide up to 2 Gigabytes of data storage.	X	
The TCU shall provide a means to download the TCU information and update software in the device.	X	

	Meets Request	
	Yes	No
Indicator Light and Alarm Prove-Out System A system shall be provided which automatically tests basic indicator lights and alarms located on the cab instrument panel.	X	
Voltage Monitor System 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.	X	
The alarm shall activate if the system falls below 11.8 volts DC for more than 2 minutes.	X	
Dedicated Radio Equipment Connection Points There shall be 3 studs provided in the primary power distribution center located in front of the officer for two-way radio equipment. The studs shall consist of the following: • 12-volt 40-amp battery switched power • 12-volt 60-amp ignition switched power • 12-volt 60-amp direct battery power	X	
There shall also be a 12-volt 100-amp ground stud located in or adjacent to the power distribution center.	X	
EMI/RFI Protection 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.	X	
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 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.	X	
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	X	

	Meets Request	
	Yes	No
cable routing shall be given careful attention to minimize the potential for conducting and radiated EMI/RFI susceptibility.		
ELECTRICAL SYSTEM PROGNOSTICS There shall be a software-based vehicle tool provided to predict remaining life of the vehicle's critical fluid and events.	X	
The system shall send automatic indications to the information center and/or wireless enabled devices to proactively alert of upcoming service intervals.	X	
Prognostics shall include the following: • Engine oil and filter • Transmission oil and filter		
ELECTRICAL 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.	X	
Electrical wiring and equipment shall be installed utilizing the following guidelines: 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. 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. 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.	X	

	Meets Request	
	Yes	No
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). 5. All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area. 6. All electrical terminals in exposed areas shall have silicon applied completely over the metal portion of the terminal.		
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.	X	
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.	X	
The results of the tests shall be recorded and provided to the purchaser at time of delivery.	X	
BATTERY SYSTEM 6, 12 volt, Deka, Model 1231MF, maintenance free group 31 batteries that include the following features, each, shall be provided: • 1000 CCA (cold cranking amps) • 185 reserve capacity • High cycle • Ref CA of 1190 at 0 degrees Fahrenheit • 185 reserve capacity • Female threaded	X	
BATTERY SYSTEM There shall be a single starting system with an ignition switch and starter button provided and located on the cab instrument panel.	X	
MASTER BATTERY SWITCH There shall be a Blue Sea 9003E, red master battery switch provided within the cab within easy reach of the driver to activate the battery system.	X	
An indicator light shall be provided on the instrument panel to notify the driver of the status of the battery system.	X	

	Meets Request	
	Yes	No
BATTERY COMPARTMENTS Batteries shall be placed on non-corrosive mats and be stored in well ventilated compartments located under the cab.	X	
Heavy-duty battery cables shall be used to provide maximum power to the electrical system. Cables shall be color coded.	X	
Battery terminal connections shall be coated with anti-corrosion compound. Battery solenoid terminal connections shall be encapsulated with semi-permanent rubberized compound.	X	
JUMPER STUDS 1 set of battery jumper studs with plastic color-coded covers shall be included on the battery compartments.	X	
BATTERY CHARGER There shall be a Kussmaul. Auto Charge 4000	X	
The battery charger shall be wired to the AC shoreline inlet through an AC receptacle adjacent to this battery charger.	X	
There shall be a Kussmaul™, Model #091-189-12-3.5D digital display included.	X	
Battery charger shall be located in the cab behind the driver seat.	X	
The battery charger indicator shall be located in the driver's step area.	X	
SHORELINE There shall be 1 30-amp 120-volt AC twist lock inlet(s) NEMA L5-30 with gray cover(s) provided to operate the dedicated 120-volt AC circuits on the apparatus.	X	
The shoreline(s) shall be connected to the battery charger.	X	
A mating connector body shall also be supplied with the loose equipment.	X	
There shall be a label installed near the inlet(s) that state the following: • Line Voltage • Current Ratting (amps) • Phase • Frequency	X	
The shoreline receptacle shall be located in the driver side lower step well of cab.	X	

	Meets Request	
	Yes	No
JUMPER STUDS There shall be 1 set of battery jumper studs with plastic color-coded covers provided under the passenger side battery box.	X	
ALTERNATOR A Delco Remy®, Model 55SI, alternator shall be provided. It shall have a rated output current of 430 amps, as measured by SAE method J56. The alternator shall feature an integral regulator and rectifier system that has been tested and qualified to an ambient temperature of 257 degrees Fahrenheit (125 degrees Celsius). The alternator shall be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.	X	
ELECTRONIC LOAD MANAGER 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.	X	
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.	X	

The system shall include the following features:
• 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 activate before any electric loads are shed and deactivate with the service brake.
  o If enabled:
  ▪ "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.
	X	

The information center, where applicable, includes a "Load Manager" screen indicating the following:	X	

	Meets Request	
	Yes	No

• Load managed items list, with priority levels and item condition.
• Individual load managed item condition:
  o ON = not shed
  o SHED = shed		

SEQUENCER 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.	X	
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.	X	
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.	X	
When the emergency master switch is deactivated, the sequencer shall deactivate the warning light loads in the reverse order.	X	
Sequencing of the following items shall also occur, in conjunction with the ignition switch, at half-second intervals: • Cab Heater and Air Conditioning • Crew Cab Heater (if applicable) • Crew Cab Air Conditioning (if applicable) • Exhaust Fans (if applicable) • Third Evaporator (if applicable)	X	
HEADLIGHTS There shall be 4 JW Speaker®, Model 8800, 4" x 6" rectangular LED lights with heated lens mounted in the front quad style, chrome housing on each side of the cab grille: • the outside light on each side shall contain a part number 055***1 low beam module	X	

	Meets Request	
	Yes	No
• the inside light on each side shall contain a part number 055***1 high beam module • the headlights to include chrome bezels		
The low beam lights shall be activated when the headlight switch is on.	X	
The high beam and low beam lights shall be activated when the headlight switch and the high beam switch is activated.	X	
DIRECTIONAL LIGHTS There shall be 2 Whelen 600 series, LED combination directional/marker lights provided. The lights shall be located on the outside cab corners, next to the headlights.	X	
The color of the lenses shall be the same color as the LED's.	X	
INTERMEDIATE LIGHT There shall be 2 Weldon, Model 9186-8580-29, amber LED turn signal marker lights furnished, 1 each side, in the rear fender panel. The light shall double as a turn signal and marker light.	X	
CAB CLEARANCE/MARKER/ID LIGHTS There shall be 7 amber LED lights provided per the following:	X	
• 3 amber LED identification lights shall be installed in the center of the cab above the windshield. • 2 amber LED clearance lights shall be installed, 1 on each outboard side of the cab above the windshield as close to the outside of the apparatus as practical. • 2 amber LED clearance lights shall be installed, 1 on each side of the cab as high and far forward as practical.		
The lights shall be installed without guards.		
FRONT CAB SIDE DIRECTIONAL/MARKER LIGHTS There shall be 2 Truck-Lite®, Model 19036Y, amber LED lights installed to the outside of the chrome wrap around bezel, 1 on each side of the cab.	X	
The lights shall activate as marker lights with the headlight switch and directional lights with the corresponding directional circuit.	X	
REAR CLEARANCE/MARKER/ID LIGHTING There shall be 3 LED identification lights located at the rear installed per the following:	X	
• As close as practical to the vertical centerline		

	Meets Request	
	Yes	No
• Centers spaced not less than 6.00" or more than 12.00" apart • Red in color • All at the same height		
There shall be 2 LED lights installed at the rear of the apparatus used as clearance lights located at the rear of the apparatus per the following: • To indicate the overall width of the vehicle • 1 each side of the vertical centerline • As near the top as practical • Red in color • To be visible from the rear	X	
There shall be 2 LED lights installed on the side of the apparatus used as marker lights as close to the rear as practical per the following: • To indicate the overall length of the vehicle • 1 each side of the vertical centerline • As near the top as practical • All at the same height • All at the same height	X	
There shall be 2 red reflectors located on the rear of the truck facing to the rear. 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.	X	
There shall be 2 red reflectors located on the side of the truck facing to the side. 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.	X	
Per FMVSS 108 and CMVSS 108 requirements.	X	
REAR FMVSS LIGHTING The rear stop/tail and directional LED lighting shall consist of the following: • 2 Whelen®, Model M6BTT, red LED stop/taillights • 2 Whelen, Model M6T, amber LED arrow turn lights	X	
The lights shall be provided with color lenses.	X	
Each light shall be installed separately at the rear with Whelen, Model M6FC, chrome flanges.	X	

	Meets Request	
	Yes	No
2 Whelen Model M6BUW, LED backup lights shall be provided with a flange.	X	
LICENSE PLATE BRACKET There shall be 1 license plate bracket mounted on the rear of the body.	X	
A white LED light shall illuminate the license plate. A stainless-steel light shield shall be provided over the light that shall direct illumination downward, preventing white light to the rear.	X	
BACK-UP ALARM A PRECO, Model 1040, solid-state electronic audible back-up alarm that actuates when the truck is shifted into reverse shall be provided. The device shall sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum 10 dBA above surrounding environmental noise levels.	X	
REAR STEP BUZZER There shall be 2 buzzer button(s) located one each side of the rear body, below the handrail that shall be labeled 1-Stop, 2-Go and 3-Back.	X	
The button(s) shall activate the alarm in the cab.	X	
The switches shall be located within 62.00" to the ground.	X	
SYNCHRONIZE WARNING LIGHTS The sync wires to the following 2 lights located on the lower rear warnings and the upper M7 lights on the beacon housing to create a x pattern. on the apparatus shall be connected together to maintain the flash patterns of the lights.	X	
The lights located Tbd shall remain on phase 1 or flash together.	X	
The lights located Tbd shall be changed to phase 2 or flash opposite the lights selected above.	X	
CAB PERIMETER SCENE LIGHTS There shall be 4 TecNiq, Model T10-LC00-1, 15.00" lights with white LEDs and 45-degree stainless steel brackets provided per the following: • 1 under the driver's side cab access step • 1 under the passenger's side cab access step • 1 under the passenger's side crew cab access step • 1 under the driver's side crew cab access step	X	

	Meets Request	
	Yes	No
The lights shall be activated when the battery switch is on, when the respective door is open and by the same control selected for the body perimeter lights.	X	
PUMP HOUSE PERIMETER LIGHTS There shall be 2 TecNiq, Model T10-LC00-1, 15.00" white 12-volt DC LED weatherproof strip lights provided under the pump panel running boards, 1 each side.	X	
The lights shall be controlled by the same means as the body perimeter lights.	X	
BODY PERIMETER SCENE LIGHTS There shall be 2 TecNiq, Model T10-LC00-1, 15.00" 12-volt DC LED strip lights provided at the rear step area of the body, 1 each side shining to the rear.	X	
The perimeter scene lights shall be activated when a switch within reach of the driver is activated, a switch at the passenger's side pump panel is activated and a cab door is open.	X	
ADDITIONAL PERIMETER LIGHTS There shall be 4 TecNiq, Model T10-LC00-1, 1.25" high x 15.00" long white LED light(s) provided under the LS2, LS3, RS1 and RS3 compartments.	X	
These additional lights shall be controlled with the other body perimeter lights.	X	
ENHANCED SOFTWARE FOR PERIMETER LIGHTS All perimeter lights and scene lights shall be deactivated when the parking brake is released.	X	
The cab and crew cab perimeter lights shall dim after 10 seconds or immediately if the vehicle's transmission is put into gear.	X	
STEP LIGHTS There shall be 2 white LED step lights shall be provided at the rear to illuminate the tailboard/step area.	X	
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 10 inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same 10-inch distance below the light.	X	
These step lights shall be actuated with the perimeter scene lights.	X	
All other steps on the apparatus shall be illuminated per the current edition of NFPA 1901.	X	

	Meets Request	
	Yes	No
12 VOLT LIGHTING There shall be 1 Whelen® Model P*H2*, 17,750 lumens 12-volt DC light(s) with a combination of flood and spot optics provided on the front visor, centered.	X	
The housing(s) painted parts of this light assembly to be white. The light(s) shall be controlled by a switch at the driver's side switch panel.	X	
These light(s) may be load managed when the parking brake is applied.	X	
CUSTOM VISOR LIGHT BRACKET There shall be 1 custom visor light bracket attached to the cab brow. The bracket shall be fabricated to match customer provided image and shall be painted job color.	X	
12 VOLT DC SCENE LIGHTS There shall be 1 Whelen® Model P*H2*, 17,750 lumens 12-volt DC powered lights with white LEDs and a combination of flood and spot optics installed on the apparatus located on the driver's side rear of the cab stored above the roofline facing outboard.	X	
The light(s) to be installed on push upside mount outside pole length to be 20.00" long with a handle holder and sensor connecting the pole to the Do Not Move Truck Indicator circuit.	X	
The painted parts of this light assembly to be white.	X	
The lights shall be activated by a switch at the driver's side switch panel.	X	
The light(s) may be load managed when the parking brake is applied.	X	
be load managed when the parking brake is applied.		
DECK LIGHTS There shall be 2 Whelen®, Model MPBW, white 12-volt DC LED floodlights with stud bail mount provided at the rear of the hose bed, 1 each side.	X	
The lights shall be activated by a control from the driver side switch panel.	X	
WALKING SURFACE LIGHT There shall be Model FRP, 4" round black 12-volt DC LED floodlight(s) with bolt mount provided to illuminate the entire designated walking surface on top of the body.	X	
The light(s) shall be activated when the body step lights are on.	X	

	Meets Request	
	Yes	No
CITY/FREEWAY SWITCH IPO EMASTER There shall be 2 switches provided in the cab on the switch panel, 1 switch will be labeled CITY and one 1 switch shall be labeled FREEWAY. These switches shall be in place of the E-master switch.	X	
The CITY switch shall operate same as E-master switch and enable all warning lights.	X	
The FREEWAY switch shall operate as a E-master switch with special warning light operation. The Freeway switch shall activate the steady burn lower front warning, lower rear warning and upper rear warning lights.	X	
The FREEWAY switch shall deactivate the roof lights, the side warning lights, the flashing front warning lights, and Hi Beam flash if enabled.	X	
The deactivated warning lights can be manually reactivated if required.	X	
WATER TANK Booster tank shall have a capacity of 500 gallons and be constructed of polypropylene plastic by United Plastic Fabricating, Incorporated.	X	
Tank joints and seams shall be nitrogen welded inside and out.	X	
Tank shall be baffled in accordance with NFPA Bulletin 1901 requirements.	X	
Baffles shall have vent openings at both the top and bottom to permit movement of air and water between compartments.	X	
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.	X	
Transverse partitions shall extend from 4.00" off the bottom of the tank to the underside of the top cover.	X	
All partitions shall interlock and shall be welded to the tank bottom and sides.	X	
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.	X	
Tank top shall be sufficiently supported to keep it rigid during fast filling conditions.	X	
Construction shall include 2.00" polypropylene dowels spaced no more than 30.00" apart and welded to the transverse partitions. 2 of the dowels shall be drilled and tapped (.50" diameter, 13.00" deep) to accommodate lifting eyes.	X	

	Meets Request	
	Yes	No
A sump that will be sized dependent on the tank to pump plumbing shall be provided at the bottom of the water tank.	X	
Sump shall include a drain plug and the tank outlet.	X	
Tank shall be installed in a fabricated cradle assembly constructed of structural steel.	X	
Sufficient crossmembers shall be provided to properly support bottom of tank. Crossmembers shall be constructed of steel bar channel or rectangular tubing.	X	
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.	X	
Stops or other provision shall be provided to prevent an empty tank from bouncing excessively while moving vehicle.	X	
Mounting system shall be approved by the tank manufacturer.	X	
Fill tower shall be constructed of .50" polypropylene and shall be a minimum of 8.00" wide x 14.00" long.	X	
Fill tower shall be furnished with a .25" thick polypropylene screen and a hinged cover.	X	
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.	X	
TANK DRAIN A 2.00" tank drain shall be installed with a 2.00" ball valve located underneath the left front compartment that is properly labeled.	X	
SLEEVE, PLUMBING, THROUGH TANK 1 sleeve shall be provided in the water tank for a 3.00" pipe to the rear.	X	
HOSE BED The hose bed shall be fabricated of .125"-5052 aluminum with a nominal 38,000 psi tensile strength.	X	
Upper and rear edges of side panels shall have a double break for rigidity, a split tube finish shall not be acceptable.	X	
The upper inside area of the beavertails shall be covered with brushed stainless steel to prevent damage to painted surface when hose is removed.	X	

	Meets Request	
	Yes	No
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.	X	
The hose bed interior walls shall be painted to match the lower body color.	X	
Hose bed shall accommodate 350' of 1.75" (2 Stacks) 750' of 3" (4 Stacks) 750' of 3" (4 Stacks) 250' of 2.5" (2 Stacks) 250' of 1.75" (2 Stacks).	X	
HOSE BED DIVIDER 4 hose bed dividers shall be furnished for separating hose.	X	
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.	X	
Divider shall be fully adjustable by sliding in tracks, located at the front and rear of the hose bed.	X	
Divider shall be held in place by tightening bolts, at each end.	X	
Acorn nuts shall be installed on all bolts in the hose bed which have exposed threads.	X	
A cross-divider shall be provided 24" the front of the body. The divider shall be bolted to the side sheet.	X	
A cross-divider shall be provided just behind the fill tower. The divider shall be bolted to the side sheet.	X	
HOSE DEFLECTOR A 4.00" deep aluminum treadplate hose deflector shall be provided at the rear of the hose bed above the handrail. This deflector shall extend 4.00" to the rear and have an angle support.	X	
HOSE BED COVER A 2-section hose bed cover constructed of .125" bright aluminum treadplate shall be furnished. The cover shall be designed in two sections so that the rearward section slides over the forward section on channel tracks and sealed ball bearing nylon coated rollers. The cover shall positively latch in the rolled open and rolled closed positions. The cover shall be reinforced so that it can support the weight of a man walking on the cover.	X	

	Meets Request	
	Yes	No
The cover shall be hinged with full-length stainless-steel piano hinge along the forward edge to allow the cover to lift up once the rearward section is rolled over the forward section. The cover shall be able to hinge open to a minimum of 60 degrees.	X	
Chrome grab handles and gas filled cylinders shall be provided to assist in operating the cover.	X	
A mechanical safety bar shall be provided on both sides.	X	
The hose bed cover shall be connected to the Do Not Move Truck indicator. The light shall be activated if the cover is not in the stowed position and the parking brake is released.	X	
HOSE BED COVER A front hinged aluminum treadplate cover shall be provided. The cover shall extend only 16.00" into the hose bed from the front wall to a cross divider but cover the entire width. The cover shall be hinged with full-length stainless-steel piano hinge.	X	
The cover shall be reinforced so that it can support the weight of a man walking on the cover.	X	
Chrome grab handles and gas filled cylinders shall be provided to assist in opening and closing the cover. A socket and plunger style holder shall be provided to hold the cover in the closed position.	X	
HOSEBED END FLAP There shall be a red vinyl flap installed at the rear of the hose bed.	X	
The vinyl flap shall have nylon tie down straps, with quick release thumb spring buckles. Fasnap model 207668 stainless steel buckles shall be attached to the flaps. The vinyl end skirt shall be installed directly to the hose bed frame.	X	
Rubber coated hooks and stainless-steel footman loops shall secure the end skirt/bed cover to the main body.	X	
RUNNING BOARDS Running boards shall be fabricated of .125" bright aluminum treadplate.	X	
Each running board shall be supported by a welded 2.00" square tubing and channel assembly, which shall be bolted to the pump compartment substructure.	X	
Running boards shall be 12.75" deep and spaced .50" away from the pump panel.	X	
A splash guard shall be provided above the running board treadplate.	X	

	Meets Request	
	Yes	No
TAILBOARD The tailboard shall also be constructed of .125" bright aluminum treadplate and spaced .50" from the body, as well as supported by a structural steel assembly.	X	
The tailboard area shall be 16.00" deep.	X	
The exterior side shall be flanged down and in for increased rigidity of tailboard structure.	X	
REAR WALL, SMOOTH ALUMINUM/BODY MATERIAL The rear facing surfaces of the center rear wall shall be smooth aluminum.	X	
The bulkheads, the surface to the rear of the side body compartments, shall be smooth and the same material as the body.	X	
Any inboard facing surfaces below the height of the hose bed shall be aluminum diamond plate.	X	
REAR TOW EYES 2 tow eyes, which are an integral part of the body mounting substructure, shall be installed below the rear of the truck.	X	
The tow eyes shall be of adequate strength to allow the truck to be pulled from the eyes.	X	
RUNNING BOARD HOSE RESTRAINT A pair of 2.00" wide black nylon straps with Velcro fasteners shall be provided for each hose tray to secure the hose during travel. There shall be 2 hose trays located 1 in each side running board.	X	
HOSE TRAY 2 hose trays shall be recessed 1 in each side running board.	X	
Capacity of the tray shall be 9" Deep x 44" Long x 9" Wide.	X	
Rubber matting shall be installed on the floor of the tray to provide proper ventilation. Drain holes shall be provided.	X	
COMPARTMENTATION Body and compartments shall be fabricated of 0.125", 5052-H32 aluminum.	X	
Side compartments shall be an integral assembly with the rear fenders.	X	
Circular fender liners shall be provided for prevention of rust pockets and ease of maintenance.	X	

	Meets Request	
	Yes	No
Side compartment flooring shall be of the sweep out design with the floor higher than the compartment door lip.	X	
The side compartment door opening shall be framed by flanging the edges in 1.75" and bending out again 0.75" to form an angle.	X	
Drip protection shall be provided above the doors by means of bright aluminum extrusion, formed bright aluminum treadplate or polished stainless steel.	X	
The top of the compartment shall be covered with bright aluminum treadplate rolled over the edges on the front, rear, and outward side. These covers shall have the corners welded.	X	
Side compartment covers shall be separate from the compartment tops.	X	
Front facing compartment walls shall be covered with bright aluminum treadplate.	X	
All screws and bolts which protrude into a compartment shall have acorn nuts on the ends to prevent injury.	X	
UNDERBODY SUPPORT SYSTEM		
Due to the severe loading requirements of this pumper a method of body and compartment support suitable for the intended load shall be provided.	X	
The backbone of the support system shall be the chassis frame rails which is the strongest component of the chassis and is designed for sustaining maximum loads.	X	
Forward to the rear axle, the support system shall include "L"-shaped support members bolted to the chassis frame rails. These welded support members shall include vertical formed channels, horizontal structural channels, and support gussets. These parts extend from the chassis frame outward underneath the body.	X	
Rearward to the rear axle, the body support system shall include two rearward facing "L"-shaped support members bolted to the chassis frame rails. These support members shall be connected to the two-body supporting crossmembers forming a boxed foundation for the rear body support system.	X	
Steel upper platform decks shall be mounted on the top of these support members to create a floating substructure which shall result in a 500 lb. equipment support rating per lower compartment.	X	
All structural components of this system shall be made from high strength 50K steel plate material or structural steel componentry. The steel frames as well as the steel	X	

	Meets Request	
	Yes	No
vertical angles shall be treated with an epoxy E-coat to provide resistance to corrosion and chemicals as standard.		
The floating substructure shall be separated from the horizontal members with neoprene elastomer isolators. These isolators shall reduce the natural flex stress of the chassis from being transmitted to the body.	X	
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 3 transitional and rotational modes.	X	
The neoprene isolators shall be installed in a pattern which assimilates a 3-point mounting pattern to reduce the natural flex of the chassis being transmitted to the body.	X	
A design with body compartments hanging on the chassis in an unsupported fashion shall not be acceptable.	X	
AGGRESSIVE WALKING SURFACE All exterior surfaces designated as stepping, standing, and walking areas shall comply with the required average slip resistance of the current NFPA standards.	X	
LOUVERS Louvers shall be stamped into compartment walls to provide the proper airflow inside the body compartments and to prevent water from dripping into the compartment. Where these louvers are provided, they shall be formed into the metal and not added to the compartment as a separate plate.	X	
TESTING OF BODY DESIGN Body structural analysis shall be fully tested. Proven engineering and test techniques such as finite element analysis, strain gauging, and model analysis shall be performed with special attention given to fatigue, life and structural integrity of the body and substructure.	X	
Body shall be tested while loaded to its greatest in-service weight.	X	
The criteria used during the testing procedure shall include: • Raising opposite corners of the vehicle tires 9.00" to simulate the twisting a truck may experience when driving over a curb. • Making a 90-degree turn, while driving at 20 mph to simulate aggressive driving conditions. • Driving the vehicle at 35 mph on a washboard road.	X	

	Meets Request	
	Yes	No
• 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.		
Evidence of actual testing techniques shall be made available upon request.	X	
LEFT SIDE COMPARTMENTATION The left side compartmentation shall consist of five lap door compartments.	X	
A vertically hinged, single door compartment in the lower area ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 22.50" wide x 33.63" high x 25.88" deep in the lower 25.00" of the compartment and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 16.63" wide x 27.88" high.	X	
A horizontally hinged, single lift-up door compartment in the upper area, ahead of the rear wheels, shall be provided. The interior dimensions of this compartment shall be 58.00" wide x 32.88" high x 12.00" deep. The clear door opening of this compartment shall be a minimum of 53.25" wide x 27.00" high.	X	
A horizontally hinged, single lift-up door compartment in the upper area, behind the rear wheels, shall be provided. The interior dimensions of this compartment shall be 65.50" wide x 32.88" high x 12.00" deep. The clear door opening of this compartment shall be a minimum of 53.25" wide x 27.00" high.	X	
A vertically hinged, single door compartment in the lower area behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 31.75" wide x 34.63" high x 25.88" deep in the lower 26.00" of the compartment and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 28.63" wide x 28.88" high.	X	
A full height, vertically hinged, single door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 15.25" wide x 67.63" high x 12.00" deep. The clear door opening shall be a minimum of 12.13" wide x 62.88" high.	X	
The interior height of the compartments shall be measured from the compartment floor to the ceiling. The depth of the compartments shall be measured from the back wall to the inside of the door frame.	X	
Closing of the doors shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.	X	

	Meets Request	
	Yes	No
The vertically hinged doors shall be furnished with a positive door holder.	X	
The lift-up door shall be furnished with two gas-charged cylinders to assist in the opening of the door and to maintain the door in an open position. There shall be a field adjustable, three-position bracket mounted on the vertical side door opening that shall allow the door to be held open at 87°, 90°, or 93°.	X	
RIGHT SIDE COMPARTMENTATION The right-side compartmentation shall consist of three lap door compartments.	X	
A vertically hinged, single door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 22.50" wide x 32.63" high x 25.88" deep in the lower 25.00" of the compartment and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 16.63" wide x 27.88" high.	X	
A vertically hinged, single door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 31.75" wide x 33.63" high x 12.00" deep. A section of this compartment shall be 25.88" deep for the first 31.75" width x 26.00" height directly behind the rear wheels. The clear door opening shall be a minimum of 28.63" wide x 28.88" high.	X	
A vertically hinged, single door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 15.25" wide x 33.63" high x 12.00" deep. The clear door opening shall be a minimum of 12.13" wide x 28.88" high.	X	
The interior height of the compartments shall be measured from the compartment floor to the ceiling. The depth of the compartments shall be measured from the back wall to the inside of the door frame.	X	
Closing of the doors shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand. Each door shall be furnished with a positive door holder.	X	
SIDE COMPARTMENT DOORS All hinged compartment doors shall be lap style with double panel construction and shall be a minimum of 1.50" thick. The doors shall be made from the same material as the body. To provide additional door strength a "C" section reinforcement shall be installed between the outer and interior panels.	X	
Doors shall be provided with a closed cell rubber gasket around the surface that laps onto the body. A second heavy-duty automotive rubber molding with a hollow core shall	X	

	Meets Request	
	Yes	No
be installed on the door framing that seals onto the interior panel, to ensure a weather resisting compartment.		
All compartment doors shall have polished stainless steel continuous hinge with a pin diameter of .25" that is bolted or screwed on with stainless steel fasteners. (Hinges which are welded on shall not be acceptable.)	X	
All door locking mechanisms shall be fully enclosed within the door panels to prevent fouling of the lock in the event equipment inside shifts into the lock area.	X	
Doors shall be latched with recessed, polished stainless steel "D" ring handles and FMVSS approved door locking mechanisms.	X	
To prevent corrosion caused by dissimilar metals, compartment door handles shall not be attached to outer door panel with screws. A rubber gasket shall be provided between the "D" ring handle and the door.	X	
REAR COMPARTMENTATION A vertically hinged, double door compartment above the rear tailboard shall be provided.	X	
The interior dimensions of this compartment shall be 40.00" wide x 42.38" high x 25.88" deep. The interior height of the compartments shall be measured from the compartment floor to the ceiling. The depth of the compartments shall be measured from the back wall to the inside of the door frame.	X	
A louvered, removable access panel shall be furnished on the back wall of the compartment.	X	
The rear compartment shall be open into the rear side compartments.	X	
The clear door opening of this compartment shall be 32.00" wide x 37.63" high.	X	
Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.	X	
Each of the vertically hinged compartment doors shall be provided with a positive door holder.	X	

	Meets Request	
	Yes	No
REAR COMPARTMENT DOORS All hinged compartment doors shall be lap style with double panel construction and shall be a minimum of 1.50" thick. To provide additional door strength, a "C" section reinforcement shall be installed between the outer and interior panels.	X	
Doors shall be provided with a closed cell rubber gasket around the surface that laps onto the body. A second heavy-duty automotive rubber molding with a hollow core shall be installed on the door framing that seals onto the interior panel, to ensure a weather resisting compartment.	X	
All compartment doors shall have polished stainless steel continuous hinge with a pin diameter of .25", that is bolted or screwed on with stainless steel fasteners. (Hinges which are welded on shall not be acceptable.) A strip of dielectric isolation tape shall be provided between the hinge and door jamb.	X	
All door lock mechanisms shall be fully enclosed within the door panels to prevent fouling of the lock in the event equipment inside shifts into the lock area.	X	
Doors shall be latched with recessed, polished stainless steel "D" ring handles and Eberhard 106 locks.	X	
To prevent corrosion caused by dissimilar metals, compartment door handles shall not be attached to outer door panel with screws. A rubber gasket shall be provided between the "D" ring handle and the door.	X	
REVERSE HINGED DOOR The 1 compartment door, located LS5, shall have the hinge at the rear of the door.	X	
SCUFFPLATE ON INTERIOR OF COMPARTMENT DOOR(S) The 12 compartment doors shall include a brushed stainless steel scuff plate to cover the entire width and height on the inside panel of each door pan.	X	
Scuff plate shall be located all compartment doors.		
COMPARTMENT LIGHTING There shall be 7 compartment(s) with 2 white 12-volt DC LED compartment light strips. The dual light strips shall be centered vertically along each side of the door framing. There shall be 2 light strips per compartment. The dual light strips shall be in all body compartment(s).	X	

	Meets Request	
	Yes	No
Any remaining compartments without light strips shall have a 6.00" diameter Truck-Lite, Model: 79384 lights. Each light shall have a number 1076 one filament, two wire bulb.	X	
Opening the compartment door shall automatically turn the compartment lighting on.	X	
WORK LIGHTS, RECESSED IN COMPARTMENT DOOR 2 4-inch lights shall be provided in the door pans of on the horizontal hinged compartment doors. The lights shall be controlled by the automatic door switch.	X	
The total of 2 compartment door pans shall be provided with 2 4-inch lights.	X	
MOUNTING TRACKS There shall be 9 sets of tracks for mounting shelf(s) in LS1, LS2, LS3, LS4, LS5, RS1, RS2, RS3 and B1. These tracks shall be installed vertically to support the adjustable shelf(s) and shall be full height of the compartment. The tracks shall be painted to match the compartment interior.	X	
ADJUSTABLE SHELF There shall be Ten shelves with a capacity of 500lb provided.	X	
To be determined by full width of compartment. The shelf construction shall consist of 0.188" aluminum with 2.00: high sides.	X	
Each tray shall be painted spatter gray.	X	
Each shelf shall be infinitely adjustable by means of a threaded fastener, which slides in a track.	X	
DRAWER ASSEMBLY There shall be a total of 1 cabinet with six (6) drawers provided. The cabinet shall be installed as wide as possible in the LS5 compartment.	X	
All drawers in the cabinet shall be the same width and depth. The drawers in this cabinet shall be 21.00" deep and shall be as wide as possible up to a maximum of 24.00" wide. A full-width 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.	X	
The height of each drawer, starting with the first drawer at the top of the cabinet shall be: • The first drawer shall have a clear height of 2.00" with a face plate that is 3.00".	X	

	Meets Request	
	Yes	No
• The second drawer shall have a clear height of 2.75" with a face plate that is 3.00". • The third drawer shall have a clear height of 2.75" with a face plate that is 3.00". • The fourth drawer shall have a clear height of 2.75" with a face plate that is 3.00". • The fifth drawer shall have a clear height of 2.75" with a face plate that is 3.00". • The sixth drawer shall have a clear height of 7.75" with a face plate that is 8.00".		
Each drawer shall have a maximum capacity of 250 lb.		
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 shall completely enclose all of the drawers.	X	
MATTING, COMPARTMENT SHELVING Dri-Deck rubber compartment matting shall be provided in 14 shelves. The locations are, to be determined.	X	
The Dri-Déck shall be black, and .562" thick with holes in the decking to allow air to flow.		
RUB RAIL The bottom edge of the side compartments shall be trimmed with a brushed stainless steel rub rail. The rub rail shall be 2.00" high and extend 1.00" away from the body, with slanted ends to provide a pleasing appearance.	X	
These rub rails shall not be an integral part of the body construction, which allows replacement in the event of damage.	X	
BODY FENDER CROWNS Polished stainless steel fender crowns shall be provided around the rear wheel openings with a dielectric barrier shall be provided between the fender crown and the fender sheet metal to prevent corrosion.	X	
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. Rubber welting shall be provided between the body and crown.	X	
BODY FENDER LINER An unpainted brushed stainless fender liner shall be provided. The liners shall be removable to aid in the maintenance of rear suspension components.	X	

	Meets Request	
	Yes	No
HARD SUCTION HOSE 2 lengths of 4.00" clear corrugated PVC hard suction hose, 10' in length, shall be provided. The hose shall be equipped with a long handle female coupling on 1 end and a rocker lug male coupling on the other end. Couplings shall be hard coated aluminum.	X	
HOSE TROUGH A quantity of 1 hard suction hose trough(s) shall be compartment top mounted on a bracket, located on the left side.	X	
Trough(s) shall be constructed of aluminum painted job color.	X	
The hose(s) shall be held in place by hook and loop straps.	X	
An additional hose trough shall be provided and installed on the right side above the ladders.	X	
HANDRAILS The handrails shall be 1.25" diameter knurled aluminum to provide a positive gripping surface.	X	
Chrome plated end stanchions shall support the handrail. Plastic gaskets shall be used between end stanchions and any painted surfaces.	X	
Drain holes shall be provided in the bottom of all vertically mounted handrails.	X	
Handrails shall be provided to meet NFPA 1901 section 15.8 requirements. The handrails shall be installed as noted on the sales drawing.	X	
HANDRAILS 1 vertical handrail shall be located on each rear beavertail.	X	
HANDRAIL 1 full width horizontal handrail shall be provided below the hose bed at the rear of the apparatus.	X	
ADDITIONAL HANDRAIL 4 handrails, 7.00" long, shall be mounted to be determined.	X	
AIR BOTTLE STORAGE (DOUBLE) A quantity of 2 air bottle compartments, 15.25" wide x 7.75" tall x 26.00" deep, shall be provided on the left side forward of the rear wheels and on the left side rearward of the rear wheels. A brushed stainless-steel door with a Southco raised trigger C2 chrome lever latch shall be provided to contain the air bottle. The door shall be sized to allow	X	

	Meets Request	
	Yes	No
access to only one bottle at a time. A dielectric barrier shall be provided between the door hinge, hinge fasteners and the body sheet metal.	X	
Inside the compartment, black rubber matting shall be provided.	X	
EXTINGUISHER STORAGE A quantity of 2 extinguisher compartments shall be provided on the right side forward of the rear wheels and on the right-side rearward of the rear wheels. The extinguisher compartment shall be in the form of a 9.00" square tube and of adequate depth to accommodate different size extinguishers. A brushed stainless-steel door with a Southco raised trigger C2 chrome lever latch shall be provided to contain the extinguisher. A dielectric barrier shall be provided between the door hinge, hinge fasteners, and the body sheet metal.	X	
Inside the compartment, black rubber matting shall be provided. There shall also be a drain hole for each compartment.	X	
EXTENSION LADDER There shall be a 24' two-section aluminum Duo-Safety Series 900-A extension ladder provided.	X	
ROOF LADDER There shall be a 14' aluminum Duo-Safety Series 775-A roof ladder provided.	X	
LADDER BRACKETS The ladders shall be installed on the right side of the hose body in lined brackets and held in place by chrome plated, quarter-turn spring loaded clamps. The clamps shall be such that when the roof ladder is removed, the clamps can be moved a half turn to hold the extension ladder in place. The ladder brackets shall be adjustable up and down.	X	
FOLDING LADDER 1 10' aluminum Series 585-A Duo-Safety folding ladder shall be provided. The folding ladder shall be installed on the passenger side compartment top, mounted with an aluminum trough painted job color on the exterior and unpainted on the interior.	X	
A Velcro® strap shall be installed to hold the ladder in the trough.	X	
LADDER BOOT The ladders shall be furnished with a yellow vinyl ladder boot.	X	

	Meets Request	
	Yes	No
6' PIKE POLE 1 pike pole 6' long RH-6DA Nupla ventilation hook(s) with an aluminum D-grip handle shall be provided and located in the D-Handle storage behind the ladder rack.	X	
10' PIKE POLE 1 pike pole, 10' long with a Nupla Featherlight fiberglass handle shall be provided.	X	
PIKE POLE STORAGE There shall be 1 pike pole 8' or longer pike pole(s) with a .75" standard notch painted aluminum located behind the ladders on right side	X	
6 FT PIKE POLE There shall be 1 Fire Hooks Unlimited NY roof hook RH-6, 6-foot pike pole(s) with steel handles and pry end provided in the pike pole tube behind the ladders.	X	
PIKE POLES/FOLDING LADDER COMPARTMENT A compartment shall be provided behind the ladder brackets storage on the right side.	X	
The compartment shall be equipped with 4 aluminum tubes for storage of 4 pike poles and (1) aluminum trough for storage of (1) folding ladder.	X	
An aluminum treadplate door shall be provided at the rear with a flush lift and turn latch.	X	
The compartment shall be painted job color.	X	
TRASH HOOK STORAGE There shall be 1 stainless steel U-shaped trough(s) provided for storage of D-handle style trash hook(s). The trough(s) shall be installed behind the ladder rack.	X	
WARNING LABEL(S) There shall be 1 label(s), indicating "NO STEP", provided on top of the gravel pan.	X	
LABEL There shall be 2 label(s) provided one each side of the rear body, above the lubrication manifolds with the following information "Rear Shackle & Pin Lubrication".	X	
FOLDING STEPS FRONT OF BODY Folding steps shall be provided full height on the left side body compartments to provide access to the cargo bed. Steps shall be spaced evenly on the sales drawing. Actual quantity may vary due to pump panel interferences but shall meet the NFPA required maximum stepping height.	X	

	Meets Request	
	Yes	No
The Trident steps shall be bright finished, non-skid with a black tread coating on the stepping surface.	X	
The steps shall incorporate an LED light to illuminate the stepping surface.	X	
The steps can be used as a hand hold with two openings wide enough for a gloved hand.	X	
REAR FOLDING STEPS Bright finished, non-skid folding steps with a black tread coating on the stepping surface shall be provided at the rear. Each step shall incorporate an LED light to illuminate the stepping surface. The steps can be used as a hand hold with two openings wide enough for a gloved hand.	X	
I-ZONE BRACKETS - WILDLAND STYLE A pair of I-Zone brackets shall be provided and mounted at the rear of the apparatus, built into either side of the rear hose deflector step. The brackets shall be designed with adequate reinforcement to eliminate flexing of the body (oil canning) and not interfere with rear facing lights while carrying hose.	X	
The design of these I-Zone brackets shall have a 45-degree receiver and a removable extension piece that fits into the brackets for carrying hose.	X	
STEP, ADDITIONAL An 8.00" deep bright aluminum treadplate step shall be provided at the rear of the body above the rear compartment with 45-degree corners. There shall be 3 hand hold cut outs provided in the top of the step along the rearward edges.	X	
PUMP COMPARTMENT The pump compartment shall be separate from the hose body and compartments so that each may flex independently of the other. It shall be a fabricated assembly of steel tubing, angles and channels which supports both the fire pump and the side running boards.	X	
The pump compartment shall be mounted on the chassis frame rails with rubber biscuits in a four-point pattern to allow for chassis frame twist.	X	
Pump compartment, pump, plumbing and gauge panels shall be removable from the chassis in a single assembly.	X	

	Meets Request	
	Yes	No
PUMP MOUNTING Pump shall be mounted to a substructure which shall be mounted to the chassis frame rail using rubber isolators. The mounting shall allow chassis frame rails to flex independently without damage to the fire pump.	X	
PUMP CONTROL PANELS (LEFT SIDE CONTROL) All pump controls and gauges shall be located at the left side of the apparatus and properly identified.	X	
Layout of the pump control panel shall be ergonomically efficient and systematically organized.	X	
The pump operator's control panel shall be removable in 2 main sections for ease of maintenance:	X	
The upper section shall contain sub panels for the mounting of the pump pressure control device, engine monitoring gauges, electrical switches, and foam controls (if applicable). Sub panels shall be removable from the face of the pump panel for ease of maintenance. Below the sub panels shall be located all valve controls and line pressure gauges.	X	
The lower section of the panel shall contain all inlets, outlets, and drains.	X	
All push/pull valve controls shall have 1/4 turn locking control rods with polished chrome plated zinc tee handles. Guides for the push/pull control rods shall be chrome plated zinc castings securely mounted to the pump panel. Push/pull valve controls shall be capable of locking in any position. The control rods shall pull straight out of the panel and shall be equipped with universal joints to eliminate binding.	X	
IDENTIFICATION TAGS The identification tag for each valve control shall be recessed in the face of the tee handle.	X	
All discharge outlets shall have color coded identification tags, with each discharge having its own unique color. Color coding shall include the labeling of the outlet and the drain for each corresponding discharge.	X	
All line pressure gauges shall be mounted directly above the corresponding discharge control tee handles and recessed within the same chrome plated casting as the rod guide for quick identification. The gauge and rod guide casting shall be removable from the face of the pump panel for ease of maintenance. The casting shall be color coded to correspond with the discharge identification tag.	X	

	Meets Request	
	Yes	No
All remaining identification tags shall be mounted on the pump panel in chrome plated bezels.	X	
The pump panel on the right side shall be removable with lift and turn type fasteners.	X	
Trim rings shall be installed around all inlets and outlets.	X	
PUMP		
Pump shall be a Waterous CMU 1500 gpm 2 stage midship mounted centrifugal type.	X	
Pump shall be the class "A" type.	X	
Pump shall deliver the percentage of rated discharge at pressures indicated below:	X	
- 100% of rated capacity at 150 psi net pump pressure.	X	
-70% of rated capacity at 200 psi net pump pressure.	X	
-50% of rated capacity at 250 psi net pump pressure.	X	
Pump body shall be close-grained gray iron, bronze fitted, and horizontally split in 2 sections for easy removal of the entire impeller shaft assembly (including wear rings).	X	
Pump shall be designed for complete servicing from the bottom of the truck, without disturbing the pump setting or apparatus piping.	X	
Pump case halves shall be bolted together on a single horizontal face to minimize a chance of leakage and facilitate ease of reassembly. No end flanges shall be used.	X	
Discharge manifold of the pump shall be cast as an integral part of the pump body assembly and shall provide a minimum of 3, 3.50" openings for flexibility in providing various discharge outlets for maximum efficiency.	X	
The 3, 3.50" openings shall be located as follows: 1 outlet to the right of the pump, 1 outlet to the left of the pump, and 1 outlet directly on top of the discharge manifold.	X	
Impeller shaft shall be stainless steel, accurately ground to size. It shall be supported at each end by sealed, anti-friction ball bearings for rigid precise support. Impeller shall have flame plated hubs assuring maximum pump life and efficiency despite any presence of abrasive matter in the water supply.	X	
Bearings shall be protected from water and sediment by suitable stuffing boxes, flinger rings, and oil seals. No special or sleeve type bearings shall be used.	X	

	Meets Request	
	Yes	No
PUMP PACKING Stuffing boxes shall be of the conventional 2 piece, split-gland type, to permit adjustment or replacement of Grafoil packing without disturbing the pump. Water shall be fed into stuffing box lantern rings for proper lubrication and cooling when the pump is operating.	X	
Lantern rings shall be located at the inner ends of the stuffing boxes, to avoid having to remove them when replacing pump packing.	X	
Wear rings shall be bronze and easily replaceable to restore original pump efficiency and eliminate the need to replace the entire pump casing due to wear.	X	
PUMP TRANSMISSION The pump transmission shall be made of a 3-piece, aluminum, horizontally split casing. Power transfer to pump shall be through a high strength Morse HY-VO silent drive chain. By the use of a chain rather than gears, 50% of the sprocket shall be accepting or transmitting torque, compared to 2 or 3 teeth doing all the work.	X	
Drive shafts shall be 2.35" diameter hardened and ground alloy steel and supported by ball bearings. The case shall be designed to eliminate the need for water cooling.	X	
PUMPING MODE An interlock system shall be provided to ensure that the pump drive system components are properly engaged so that the apparatus can be safely operated. The interlock system shall be designed to allow stationary pumping only.	X	
AIR PUMP SHIFT Pump shift engagement shall be made by a 2-position sliding collar, actuated pneumatically (by air pressure), with a 3-position air control switch located in the cab. A manual back-up shift control shall also be located on the left side pump panel.	X	
2 indicator lights shall be provided adjacent to the pump shift inside the cab. 1 green light shall indicate the pump shift has been completed and be labeled "pump engaged". The second green light shall indicate when the pump has been engaged, and that the chassis transmission is in pump gear. This indicator light shall be labeled "OK to pump".	X	
The pump shift shall be interlocked to prevent the pump from being shifted out of gear when the chassis transmission is in gear to meet NFPA requirements.	X	
The pump shift control in the cab shall be illuminated to meet NFPA requirements.	X	

	Meets Request	
	Yes	No
TRANSMISSION LOCK-UP The direct gear transmission lock-up for the fire pump operation shall engage automatically when the pump shift control in the cab is activated.	X	
AUXILIARY COOLING SYSTEM 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. The heat exchanger shall be a separate unit. It shall be installed in the pump or engine compartment with the control located on the pump operator's control panel. The exchanger shall be plumbed to the master drain valve.	X	
TRANSFER VALVE Transfer valve design shall be of the latest ball type, of all bronze construction and incorporate a hydraulically balanced seal assembly, minimizing leakage around the ball and assuring maximum pump efficiency.	X	
Transfer valve shall operate smoothly and without sticking, even when exposed to sandy or dirty water.	X	
Transfer valve shall be operated electrically with a control switch mounted on the pump operator's control panel, with 2 indicator lights which shall indicate "pressure" or "volume".	X	
Transfer valve shall have the ability to change from series (pressure) operation to parallel (volume) operation without reducing the operating speed of the engine regardless of the operating pressure of the pump, thus always maintaining an effective fire stream at the nozzle.	X	
A manual override shall be provided in the event of electrical malfunction. The manual override system operates with the use of a removable hand crank located at the left side pump panel.	X	
Cylindrical type transfer valves shall not be acceptable.	X	
INTAKE RELIEF VALVE - PUMP There shall be 1 Elkhart Style 40 relief valve(s) installed on the suction side of the pump preset at 150 psig.	X	
The relief valve(s) shall have a working range of 75 psi to 250 psi.	X	
The outlet shall terminate below the frame rails with a 2.50" National Standard hose thread adapter and shall have a "do not cap" warning tag.	X	

	Meets Request	
	Yes	No
The relief valve pressure control shall be located behind the right-side pump panel with a stainless-steel access door.	X	
PRESSURE CONTROLLER A waterous adjustable relief valve, specially designed for fire service shall be provided.	X	
Valvealve shall be installed positive, quick acting, and include an instantaneous on/off control. When in the off position, the relief valve shall functionally be removed from the system. When turned back to the on position, the relief valve shall again monitor and maintain the previous pressure setting.	X	
Control for adjusting pressure shall be elliptical shaped for positive grip.	X	
A pressure transducer shall be installed in the inlet manifold on the pump	X	
An easily removable pilot valve strainer shall be provided and accessible from the pump operator's panel.	X	
2 indicator lights shall be furnished, showing the position of the relief valve.	X	
PRIMER SYSTEM A Waterous electric pump priming system conforming to standards outlined in the current edition of NFPA 1901 shall be furnished with the apparatus.	X	
1 VPO electric motor driven rotary vane primer shall be provided.	X	
1 VAP vacuum activated priming valve shall be plumbed to the main pump.	X	
1 momentary push-button control shall be located at the pump operator's panel.	X	
The push button control system control shall operate an electric priming motor and the priming valve shall automatically open during priming and close when the primer is deactivated.	X	
PUMP MANUALS There shall be a total of 2 pump manuals provided by the pump manufacturer and furnished with the apparatus. The manuals shall be provided by the pump manufacturer in the form of 2 electronic copies. Each manual shall cover pump operation, maintenance, and parts.	X	
PLUMBING, STAINLESS STEEL AND HOSE All inlet and outlet lines shall be plumbed with either stainless steel pipe, hydraulic type hose or synthetic rubber hose reinforced with hi-tensile polyester braid. All hoses shall	X	

	Meets Request	
	Yes	No
be equipped with brass or stainless-steel couplings. All stainless-steel hard plumbing shall be a minimum of a schedule 10 wall thickness.	X	
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.	X	
Plumbing manifold bodies shall be ductile cast iron or stainless steel.		
All piping lines are to be drained through a master drain valve or shall be equipped with individual drain valves. All drain lines shall be extended with a hose to drain below the chassis frame.	X	
All water carrying gauge lines shall be hydraulic or reinforced poly hose.	X	
All piping, hose and fittings shall have a minimum of a 700 PSI hydrodynamic pressure rating.	X	
FOAM SYSTEM PLUMBING All piping that is in contact with the foam concentrate or foam/water solution shall be stainless steel. The fittings shall be stainless steel or brass. Cast iron pump manifolds will be allowed.	X	
MAIN PUMP INLETS A 6.00" pump manifold inlet shall be provided on each side of the vehicle. The suction inlets shall include removable die cast zinc screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.	X	
SHORT SUCTION TUBE(S) The suction tube(s) on the water pump shall have short suction tube(s) installed to allow for installation of adapters, elbows, or intake valves without excessive overhang.	X	
INLET VALVES WITH INTAKE RELIEF VALVE There shall be 2 Task Force Tips (TFT) AX Series aluminum ball intake valve(s) provided at on the driver and passenger side.	X	
The inlet connection shall be 7HNP (4.0" Threaded Swivel Handle) with a matching cap and the outlet connection shall be NX (6.0" Threaded Swivel). There shall be an eight-position adjustable 30 degree swiveling detent elbow on the inlet side of the ball intake valve.	X	
The ball intake valve shall be controlled with a(n) standard crank on the right side.		

	Meets Request	
	Yes	No
If ball intake valve is to be controlled with a manual handwheel, the handwheel shall be controlled with a NFPA compliant slow-close hand wheel. A position indicator shall be provided to allow for a quick visualization of the status of the valve in the open, closed or transition position.	X	
If the ball intake valve is to be electrically controlled, the ball intake valve shall be controlled by a remote panel-mounted push-button switch with LED lights for a quick visualization of the status of the valve in the open, closed or transition position. The push button switch shall be mounted on the pump operator's panel.	X	
The ball intake valve shall be equipped with a slip joint adjustable pressure relief valve. The relief valve shall have a working range of 90 PSI to 300 PSI.	X	
A 3/4" TFT bleeder/drain valve shall be provided on the ball intake valve to exhaust excess air or water from the valve.	X	
For corrosion protection the aluminum casting shall have a hard coat anodized finish, with a powder coated internal and external finish. All the components facing the west side of the valve shall be constructed from stainless steel.	X	
MAIN PUMP INLET CAP The main pump inlets shall have National Standard Threads with a long handle chrome cap.	X	
VALVES All ball valves shall be Elkhart Unibody series. Seats shall be self-adjusting for minimum operating torque and maximum abrasion resistance. The Elkhart valves shall have an automatic locking feature to hold the ball in any throttle position at any operating pressure. The valve body design shall allow any actuator to be mounted to the body.	X	
The location of the valve for the 2 inlets shall be recessed behind the pump panel.	X	
INLET CONTROL The side auxiliary inlet(s) shall incorporate a quarter-turn ball valve with the control located at the inlet valve. The valve operating mechanism shall indicate the position of the valve.	X	
LEFT SIDE INLET There shall be 1 auxiliary inlet with a 2.50" valve at the left side pump panel, terminating with a 2.50" (F) National Standard hose thread adapter.	X	

	Meets Request	
	Yes	No
The auxiliary inlet shall be provided with a strainer, chrome swivel and plug.		
RIGHT SIDE INLET There shall be 1 auxiliary inlet with a 2.50" valve at the right-side pump panel, terminating with a 2.50" (F) National Standard hose thread adapter.	X	
The auxiliary inlet shall be provided with a strainer, chrome swivel and plug.	X	
ANODE, INLET A pair of sacrificial zinc anodes shall be provided in the water pump inlets to protect the pump from corrosion.	X	
INLET BLEEDER VALVE A 0.75" bleeder valve shall be provided for each side gated inlet.	X	
The valves shall be located behind the panel with a "T" swing style handle control extended to the outside of the panel.	X	
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.	X	
The water discharged by the bleeders shall be routed below the chassis frame rails.	X	
TANK TO PUMP The booster tank shall be connected to the intake side of the pump with stainless steel piping and a quarter turn 3.00" full flow line valve with the control remotely located at the operator's panel. Tank to pump line shall run straight (no elbows) from the pump into the front face of the water tank and angle down into the tank sump. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing.	X	
A check valve shall be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank.	X	
TANK REFILL A 2.50" combination tank refill and pump recirculation line shall be provided. The tank refill shall incorporate a quarter-turn ball valve with the control located at the pump operator's panel.	X	
DISCHARGE OUTLET CONTROLS 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.	X	

	Meets Request	
	Yes	No
If a handwheel control valve is used, the control shall be a minimum of a 3.9" diameter stainless steel handwheel with a dial position indicator built into the center of the handwheel.	X	
Any 3.00 inch or larger discharge valve shall be a slow-operating valve in accordance with NFPA 16.7.5.3.	X	
LEFT SIDE DISCHARGE OUTLETS There shall be 2 discharge outlets with a 2.50" valve on the left side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.	X	
LEFT SIDE OUTLET ELBOWS The 2.50" discharge outlets located on the left side pump panel shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45-degree elbow.	X	
The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).	X	
RIGHT SIDE DISCHARGE OUTLETS There shall be 2 discharge outlets with a 2.50" valve on the right side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.	X	
RIGHT SIDE OUTLET ELBOWS The 2.50" discharge outlets located on the right-side pump panel shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45-degree elbow.	X	
The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).	X	
REAR DISCHARGE OUTLET There shall be 2 discharge outlets piped to the rear of the hose bed, 1 each side, installed so proper clearance is provided for spanner wrenches or adapters. Plumbing shall consist of 2.50" piping along with a 2.50" full flow ball valve with the control from the pump operator's panel.	X	
REAR OUTLET ELBOWS The 2.50" discharge outlets located at the rear of the apparatus shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45-degree elbow.	X	

	Meets Request	
	Yes	No
The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).	X	
FRONT OF HOSE BED DISCHARGE OUTLET There shall be 2 discharge outlets located at the front of the hose bed, on 1 each side. Plumbing shall consist of 2.00" piping with a 2.00" full-flow ball valve controlled at the pump operator's panel. The discharges shall terminate with an 1.50" (M) National Standard hose thread adapter.	X	
DISCHARGECAPS/ INLET PLUGS Chrome plated, rocker lug, caps with S/S cables shall be furnished for all discharge outlets 1.00" thru 3.00" in size, besides the pre-connected hose outlets.	X	
Chrome plated, rocker lug, plugs with S/S cables shall be furnished for all auxiliary inlets 1.00" thru 3.00" in size.	X	
The caps and plugs shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).	X	
OUTLET BLEEDERS A .75", quarter turn type, 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.	X	
The valves shall be located behind the panel with a handwheel type control extended to the outside of the side pump panel. Bleeders shall be located in a horizontal line 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.	X	
ADAPTER There shall be 2 adapters with 1.50" FNST X 1.00 MNST. These adapters shall be installed on the rear discharges. A 1.00" cap and chain shall be provided with each adapter.	X	
REDUCER There shall be 2 adapters with 2.50" FNST x 1.50" MNST threads and a 1.50" chrome plated cap installed on the driver and passenger side rear discharges.	X	
DELUGE RISER A 3.00" deluge riser shall be installed above the pump in such a manner that a monitor can be mounted and used effectively. Piping shall be installed securely so no	X	

	Meets Request	
	Yes	No
movement develops when the line is charged. The riser shall be gated and controlled at the pump operator's panel.		
Any 3.00 inch or larger discharge valve shall be a slow-operating valve in accordance with NFPA 16.7.5.3.	X	
TELESCOPIC PIPING The deluge riser piping shall include an 18.00" Task Force Model XG18 Extend-A-Gun extension.	X	
This extension shall be telescopic to allow the deluge gun to be raised 18.00" increasing the range of operation.	X	
A position sensor shall be provided on the telescopic piping that shall activate the "do not move vehicle" light inside the cab when the monitor is in the raised position.	X	
DELUGE OUTLET SPECIAL INSTRUCTIONS The deluge gun outlet shall be located 113" from the ground.	X	
MONITOR An Akron Model 3423 monitor shall be properly installed on the deluge riser. This monitor shall include both a fixed mounting base and a portable base with 2 clappered 2.5" inlets.	X	
The monitor shall be painted to match the lower body.	X	
NOZZLE, DELUGE Akron model #2499 Quad Stacked pyrolite deluge tips shall be provided.	X	
The tip sizes shall be 1.375", 1.50", 1.75", and 2.00".	X	
This shall include an Akron 3488 pyrolite stream shaper.	X	
The deluge riser shall have male National Pipe Threads for mounting the monitor.	X	
CROSSLAY HOSE BEDS 2 crosslays with 1.50" outlets shall be provided. Each bed to be capable of carrying 200' of 1.75" double jacketed hose and shall be plumbed with 2.00" i.d. pipe and gated with a 2.00" quarter turn ball valve.	X	
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.	X	
The crosslay controls shall be at the pump operator's panel.	X	

	Meets Request	
	Yes	No
The center crosslay dividers shall be fabricated of 0.25" aluminum and shall provide adjustment from side to side. The divider shall be unpainted with a brushed finish.	X	
Vertical scuff plates constructed of stainless steel shall be provided at the front and rear ends of the bed on each side of vehicle.	X	
Crosslay bed flooring shall consist of removable perforated brushed aluminum.	X	
CROSSLAY/DEADLAY HOSE RESTRAINT There shall be red vinyl end flap provided across each end of the 2 crosslay/deadlay opening(s) to secure the hose during travel. Each vinyl end flap shall be permanently attached at the bottom of the crosslay/deadlay opening(s). They shall be attached with Hook and loop straps fasteners.	X	
CROSSLAY COVER A hinged .19" aluminum treadplate cover shall be installed over the crosslay hose beds. It shall include a latch at each end of the cover to hold it securely in place, a chrome grab handle at each end for opening and closing the cover and a foam rubber gasket where the cover comes into contact to a painted surface.	X	
The cover shall be provided with rubber latch hold open device.	X	
The hinge shall be to the front of the hose beds.	X	
CROSSLAY COVER HOLDER - RUBBER LATCH 2 rubber latches shall be provided, 1 each side, to hold the crosslay cover in the open position. A clip shall be mounted each side, on the back of the cab, to allow the rubber latches to hold the cover open.	X	
BOOSTER HOSE REELS 2 Hannay electric rewind aluminum booster hose reels shall be installed over the cargo area, one each side.	X	
A polished stainless-steel roller and guide assembly shall be mounted on each side of the apparatus.	X	
Discharge controls shall be provided at the pump operator's panel. Plumbing to the reels shall consist of 1.50" Aeroquip hose and 1.50" valves.	X	
Reel motors shall be protected from overload with 50-amp automatic reset circuit breakers.	X	
Each hose reel shall include the following rewind controls:	X	

	Meets Request	
	Yes	No
• 1 foot actuated, stirrup type, electric rewind control switch installed on the right-side pump panel. • 1 push-button switch provided for each reel.		
The stirrup and the 2 push-button switches shall be located in a location to be determined.	X	
Booster hose, 1.00" diameter and 300 feet long, with chrome plated Barway, or equal couplings shall be provided on each reel.	X	
Working pressure of the booster hose shall be a minimum of 800 psi.	X	
Capacity of the hose reels shall be 3 lengths of 1" x 100' hose.	X	
NOZZLE CUP AND BRACKET A Zico nozzle cup and chrome plated mounting bracket shall be provided for storage of the booster reel nozzle.	X	
There shall be 2 provided. The nozzle cup(s) shall have a 3-1/8" inside diameter and shall be located to be determined at final.	X	
FOAM CONCENTRATE PROPORTIONING SYSTEM An electronic direct injection foam system shall be provided as the means for the proportioning of foam concentrate into the water stream. An electronic, fully automatic, variable speed, direct injection, discharge side foam proportioning system shall be provided.	X	
This system shall be a single agent system capable of handling Class A foam concentrates, as well as most Class B foam concentrates.	X	
The foam system shall be plumbed to 5 discharges. The discharges capable of dispensing foam shall be both hose reels, rear crosslay, right side rear discharge, and the left rear hose bed discharge.	X	
The foam proportioning system operation shall be based on a direct measurement of water flows and remain consistent within the specified flow and pressure. The system shall be equipped with a digital electronic control display on the pump panel. Incorporated within the control display shall be a microprocessor, which receives input from the system flow meter while also monitoring the foam concentrate pump output. The microprocessor shall compare the values of the water flow versus the foam flow, to ensure the proportion rate is accurate.	X	
1 paddle wheel shall be installed to monitor all foam discharges.	X	

	Meets Request	
	Yes	No
Push button control for the form proportioning rate shall allow a ratio from .1 percent to 3 percent in .1 percent increments.	X	
The rated capacity of this system shall be 166 gpm at 3 percent and 1000 gpm at .5 percent.	X	
A 5-gpm positive displacement, 3-cylinder plunger type foam pump shall be powered by a 3/4 hp 12 vdc electric motor.	X	
1 check valve shall be installed in the plumbing to prevent foam from contaminating the water pump. The check valve shall be approved by the foam system manufacturer.	X	
FOAM TANK The foam tank shall be an integral portion of the polypropylene water tank. The cell shall have a capacity of 20 gallons of foam with the intended use of Class A foam. The foam cell shall not reduce the capacity of the water tank. The foam cell shall have a screen in the fill dome and a breather in the lid.	X	
FOAM TANK DRAIN The foam tank drain shall be a 1.00" drain valve located inside the pump compartment accessible through a door on the right-side pump panel.	X	
The following drawing(s) shall be provided for approval by the customer.	X	
PUMP OPERATOR'S PANEL DRAWING A detailed drawing to scale of the pump operator's panel shall be provided for the customer to review. The drawing shall include all the gauges, controls, switching, etc.., located on the pump operator's panel. The customer will be allowed to make changes and/or mark-ups to this approval drawing. The fire apparatus manufacturer shall make revisions (if needed) to the drawing per the customer changes and/or mark-ups as long as the changes are physically possible within a specific product line.	X	
The finalized and signed customer approved pump operator's panel drawing shall become part of the contract documents.	X	
Due to the way drain(s), bleeder(s), operational/maintenance tag(s) and NFPA required warning tag(s) are placed on pump panel(s), these items will NOT be shown on any pump panel approval drawing(s). These item(s) will be placed on pump panel(s) at the fire apparatus manufacturer discretion.	X	

	Meets Request	
	Yes	No
REMAINING PUMP PANEL(S) Detailed drawing(s) to scale of the remaining pump panel(s) shall be provided for the customer to review. The drawing(s) shall include all of the gauges, controls, switching, etc.., located on the pump panel(s). The customer will be allowed to make changes and/or mark-ups to these approval drawing(s). The fire apparatus manufacturer shall make revisions (If needed) to the drawing(s) per the customer changes and/or mark-ups as long as the changes are physically possible within a specific product line.	X	
The finalized and signed customer approved pump panel drawing(s) shall become part of the contract documents.	X	
Due to the way drain(s), bleeder(s), operational/maintenance tag(s) and NFPA required warning tag(s) are placed on pump panel(s), these items will NOT be shown on any pump panel approval drawing(s). These item(s) will be placed on pump panel(s) at the fire apparatus manufacturer discretion.	X	
COLOR CODED TAGS A detailed drawing/chart of the colors used on all of the inlet(s) and outlet(s) shall be provided for the customer to review. The customer will be allowed to make changes and/or mark-ups to this approval drawing/chart. The fire apparatus manufacturer shall make revisions (If needed) to the drawing per the customer changes and/or mark-ups as long as the changes are physically possible within a specific product line.	X	
The finalized and signed customer approved drawing/chart of the colors shall become part of the contract documents.	X	
SPECIAL TEXT/VERBIAGE TAGS A detailed drawing/chart of the text/verbiage used on all of the inlet(s) and outlet(s) shall be provided for the customer to review. The customer will be allowed to make changes and/or mark-ups to this approval drawing/chart. The fire apparatus manufacturer shall make revisions (If needed) to the drawing per the customer changes and/or mark-ups as long as the changes are physically possible within a specific product line.	X	
The finalized and signed customer approved drawing/chart of the text/verbiage shall become part of the contract documents.	X	
PUMP PANEL CONFIGURATION The pump panel configuration shall be arranged and installed in an organized manner that shall provide user-friendly operation.	X	

	Meets Request	
	Yes	No
PUMP AND GAUGE PANEL The pump and gauge panels shall be constructed of stainless steel with a brushed finish. A polished aluminum trim molding shall be provided on both sides of the pump panel.	X	
PUMP ACCESS		
Right Side Panel The right-side upper pump panel shall be removable.	X	
Panel Fastener The removable panels shall be secured with chrome swell latch.	X	
The left side pump panels shall be attached with screws.	X	
The right-side lower pump panel (drain bank) shall be attached with screws.	X	
PUMP COMPARTMENT LIGHTS There shall be 2 TecNiq, part number E18-LC00-1, 800 lumens 2.50" high x 4.50" long LED light(s) provided inside the pump enclosure.	X	
The lights shall be activated when the battery switch is on and by a lighted indicator switch on the pump panel. The switch to be labeled Pump Maintenance Light.	X	
The following shall be provided on the pump and gauge panels in a neat and orderly fashion:	X	
- Class 1 Enfo 4 System: With LED display of the engine oil pressure, engine temperature and engine rpm. A warning alarm shall be provided for these items.	X	
- Tachometer: Electric	X	
- Voltmeter	X	
Also provided at the pump panel shall be the following:	X	
- Master Pump Drain Control	X	
ENGINE THROTTLE A Fire Research (FRC) InfinityPRO model ETA400 series remote engine throttle shall be installed on the pump operator's panel. The case and control knob shall be machined from anodized aluminum, waterproof, and have dimensions not to exceed 2.50" diameter and 4.375" deep. The control knob shall be 2.00" in diameter with a serrated grip, no mechanical stops, and have a red idle push button in the center. Bid Specification 138 of 163 8-89-5-22	X	

	Meets Request	
	Yes	No
The remote engine throttle shall set the engine RPM to idle when the pump engaged interlock signal is recognized regardless of the control knob position. It shall use optical technology to detect the direction and speed of the control knob when it is rotated. The control knob shall program to be used in the clockwise rotation to increase engine speed and counterclockwise to decrease engine speed.	X	
THROTTLE READY GREEN INDICATOR LIGHT There shall be a green indicator light with label installed on the pump operators' panel that is activated when the pump is in Throttle Ready mode.		
OK TO PUMP INDICATOR LIGHT There shall be a green indicator light installed on the pump operators' panel that is activated when the pump is in Ok to Pump mode.	X	
FUEL GAUGE A fuel gauge shall be provided.	X	
COMPARTMENT IN PUMP PANEL A compartment shall be provided in the left side pump panel. The compartment shall be as large as possible. A stainless-steel access door shall be provided with D-handle latch.		
COMPARTMENT IN PUMP PANEL A compartment shall be provided in the right-side pump panel. The compartment shall be 38x11x7. A stainless-steel access door shall be provided with D-handle latch.	X X	
AIR HORN BUTTON An air horn control button shall be provided at the pump operator's control panel. This button shall be red in color and properly labeled and put within easy reach of the operator.	X	
STAINLESS STEEL SPEAKER GRILLE There shall be 2 polished stainless-steel grille/s, for a radio speaker/s, provided and installed on the front bulkhead of the body on the pump panel.	X	
The grille shall be constructed with automotive type louvers, so rain and road splash are deflected. The speaker size shall be determined at pre-construction.	X	
RADIO SPEAKER There shall be 2 Atkinson Dynamics, Model ADSF-25-Z, 25-Watt, flush mount speakers shall be provided and mounted at the pump panel. There shall be an on/off rocker	X	

	Meets Request	
	Yes	No
switch located next to the speakers. The wiring from the switch shall be terminated at in a location to be determined.		
VACUUM AND PRESSURE GAUGES The pump vacuum and pressure gauges shall be dry and manufactured by Ashcroft. The gauges shall be a 1009 series of gauge with the "Plus" needle dampener option installed to prevent needle bounce. The gauge case, ring and bourdon tube shall be S/S.	X	
The gauges shall be a minimum of 6.00" in diameter and shall have white faces with black lettering and a black needle. A "Pierce" logo shall be located in lower portion of the dial on the gauge face. The gauges shall have a pressure range of 30.00" 0-600 psi.	X	
The pump pressure and vacuum gauges shall be installed adjacent to each other at the pump operator's control panel.	X	
Test port connections shall be provided at the pump operator's panel and properly labeled. 1 shall be connected to the intake side of the pump, and the other to the discharge side of the pump. They shall have 0.25 in. standard pipe thread connections and polished stainless-steel plugs.	X	
LINE/PRESSURE GAUGES The individual "line" pressure gauges shall be dry and manufactured by Ashcroft. The gauges shall be a 1009 series of gauge with the "Plus" needle dampener option installed to prevent needle bounce. The gauge case, ring and bourdon tube shall be S/S.	X	
The gauges shall be a minimum of 2.50" in diameter and shall have white faces with black lettering and an Orange needle. A "Pierce" logo shall be located in lower portion of the dial on the gauge face. The gauge shall have a pressure range of 0-600 psi.	X	
The individual line pressure gauge(s) will be installed as close to the discharge outlet control as practical and properly labeled.	X	
WATER LEVEL GAUGE An Ernst sight tube water level indicator shall be mounted on the gauge panel with an unrestricted view for the operator.	X	
Gauge shall have an unbreakable Lexan tube.	X	

	Meets Request	
	Yes	No
FOAM LEVEL GAUGE An electronic foam level gauge shall be provided on the operator's panel that registers foam level by means of 5 colored LED lights. The lights shall be durable, ultra-bright 5 LED design viewable through 180 degrees. The foam level indicators shall be as follows: • 100 percent = Green • 75 percent = Yellow • 50 percent = Yellow • 25 percent = Yellow • Refill = Red	X	
The light shall flash when the level drops below the given level indicator to provide an eighth of a tank indication. To further alert the pump operator, the lights shall flash sequentially when the foam tank is empty.	X	
The level measurement shall be based on the sensing of head pressure of the fluid in the tank.	X	
The display shall be constructed of a solid plastic material with a chrome plated die cast bezel to reduce vibrations that can cause broken wires and loose electronic components. The encapsulated design shall provide complete protection from foam and environmental elements. An industrial pressure transducer shall be mounted to the outside of the tank. The display shall be able to be calibrated in the field and shall measure head pressure to accurately show the tank level.	X	
LIGHT SHIELD There shall be an aluminum treadplate stepping surface no less than 8.00" deep and properly reinforced to support a man's weight, installed over the pump operator's panel.	X	
• There shall be at least 2 Whelen part number 01-066D068-00 12-volt DC lights with white LEDs and black trim installed under the step to illuminate the controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus and the equipment provided on it. These lights shall be activated by the pump panel light switch. Additional lights shall be included every 18.00" depending on the size of the pump house.	X	
• There shall be 1 Whelen part number 01-066D068-00 12-volt DC light with white LEDs and black trim installed under this same step that is activated when the pump is shifted into gear from inside the cab.	X	

	Meets Request	
	Yes	No
There shall be a light activated above the pump panel light switch when the parking brake is applied. This is to afford the operator some illumination when first approaching the control panel.	X	
There shall be 1 TecHiq Model E10, 1.39" high x 6.39" wide step light with white LEDs and 45-degree stainless steel bracket provided above this step. The step light shall be activated by the pump panel light switch.	X	
There shall be 2 hand holds cut into the top of the stepping surface, 1 near the front and 1 near the rear of the shield.	X	
ADDITIONAL STEP/LIGHT SHIELD There shall be an aluminum treadplate stepping surface no less than 8.00" deep and properly reinforced to support a man's weight, installed over the right-side pump panel with the following components:	X	
• There shall be at least 2 Whelen part number 01-066D068-00, 12-volt DC lights with white LEDs and black trim installed under the step to illuminate the controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus and the equipment provided on it. The lights shall be activated by the pump panel light switch. Additional lights will be included every 18.00" depending on the size of the pump house.	X	
There shall be 1 TecNiq Model E10, 1.39" high x 6.39" long 12-volt DC step light with white LEDs and 45-degree stainless steel bracket provided above this step. The step light shall be activated by the pump panel light switch.	X	
There shall be 2 hand holds cut into the top of the stepping surface, 1 near the front and 1 near the rear of the shield.	X	
MICROPHONE & SPEAKER COMPARTMENT There shall be 1 special size microphone and speaker compartments, with a polished stainless-steel door, furnished adjacent to the pump operator's panel. Compartment size shall be 9"Wide x 12" High x 8" Deep.	X	
AIR HORN SYSTEM 1 Buell, Model 1063, air horn shall be recessed in the front bumper. The horn system shall be piped to the air brake system wet tank utilizing 0.38" tubing. A pressure protection valve shall be installed in-line to prevent loss of air in the air brake system.	X	
Air Horn Location The air horns shall be located on the right side of the bumper, outside of the frame rail.	X	

	Meets Request	
	Yes	No
Air Horn Control The air horn(s) shall be activated by the following: • Steering wheel horn ring with electric/air horn selector switch	X	
AIR HORN CONTROL The air horns shall be programmed to default when the ignition is "ON".	X	
ELECTRONIC SIREN There shall be a Federal, Model EQ2B-200, electronic siren with noise canceling microphone provided.	X	
This siren to be active when the battery switch is on.	X	
Electronic siren head shall be recessed in the driver side center switch panel.	X	
ELECTRONIC SIREN CONTROL The electronic siren shall be activated by the following: • The left side foot switch.	X	
SPEAKERS There shall be 2 Federal Signal DynaMax®, Model ES100, 100-watt speakers provided. The speakers shall use a Federal Signal, Model ESFMT-EF, recess mount with stainless steel grille. Each speaker shall be connected to the siren amplifier.	X	
The speakers shall be recessed in each side of the front bumper, inside of the frame rails.	X	
AUXILIARY MECHANICAL SIREN There shall be a Federal Signal Model Q2B mechanical siren furnished and installed in the front of the apparatus.	X	
The Q2B shall be chrome finish.	X	
The siren shall have a 2-gauge cable connected to a power solenoid that is connected by a 2-gauge cable ran battery direct to the primary chassis batteries and shall be labeled Q2B+ at the battery. The power solenoid shall only be enabled when the emergency master switch is on.	X	
The siren shall have a 2-gauge ground wire connected to the chassis battery stud. The cable shall be labeled Q2B- at the battery.	X	

	Meets Request	
	Yes	No
When the chassis battery switch is on, and the emergency master switch is on, the Q2B siren shall be activated by the following:		
The mechanical siren shall be recessed in the front bumper on the left side. The siren shall be supported by the bumper framework.	X	
MECHANICAL SIREN CONTROL The mechanical siren shall be activated by the following:		
• Left side foot switch. • Right side foot switch.	X	
A momentary chrome push button switch shall be included in the right-side dash panel to activate the siren brake.		
VERTICAL STYLE FOOT SWITCH BRACKET There shall be 1 vertical style bracket provided at the on floor on DS forward of Q2B foot switch side on cab the floor. The bracket shall be large enough to hold 1-foot switch.	X	
FRONT ZONE UPPER WARNING LIGHTS There shall be a 72.00" Whelen® Freedom™ IV LED lightbar mounted on the cab roof.	X	
The lightbar shall include the following: • 1 red flashing LED module in the left side rear corner position. • 1 dual alley flashing LED module in the left side end position. • 1 red flashing LED module in the left side front corner position. • 1 red flashing LED module in the left side first front position. • 1 red flashing LED module in the left side second front position. • 1 red flashing LED module in the left side third front position. • 1 red flashing LED module in the left side fourth front position. • 1 white flashing LED module in the left side fifth front position. • 1, 795 LED traffic light controller set to national standard high priority in the center positions. • 1 white flashing LED module in the right side fifth front position. • 1 red flashing LED module in the right side fourth front position. • 1 red flashing LED module in the right side third front position.	X	

	Meets Request	
	Yes	No
• 1 red flashing LED module in the right side second front position. • 1 red flashing LED module in the right side first front position. • 1 red flashing LED module in the right-side front corner position. • 1 dual alley flashing LED module in the right-side end position. • 1 red flashing LED module in the right-side rear corner position.		
There shall be left side and right-side red lenses with clear alley lights.	X	
The following switches may be an installed in the cab on the switch panel to control the lightbar: • a switch to control the flashing LED modules. • a switch to control the left side alley LED module. • a switch to control the right-side alley LED module. • the traffic light controller with the roof light switch. • no momentary switch to activate the traffic light controller.	X	
The white flashing LED modules, dual alley LED Flashing Modules and the traffic light controller shall be disabled when the parking brake is applied.	X	
The dual alley LED Module to come on steady burn with scene lights.	X	
The 8 red flashing LED modules in the front positions and the alley LED modules may be load managed when the parking brake is applied.	X	
SIDE WARNING LIGHTS		
There shall be 2 21.50" Whelen Freedom IV LED lightbars mounted on the roof, 1 on each side, over the cab doors.	X	
Each lightbar shall include the following: • 1 red flashing LED module in the outside rear corner position. • 1 red flashing LED module in the rear outside position. • 1 red flashing LED module in the front outside position. • 1 red flashing LED module in the outside front corner position.	X	
There shall be lenses that are the same color as the LEDs included on the lightbar.	X	
There shall be a switch in the cab on the switch panel to control the lightbars.	X	
These lights may be load managed when the parking brake is applied.	X	

	Meets Request	
	Yes	No
FRONT ZONE LOWER LIGHTS There shall be 4 Whelen®, LED lights installed on the cab face above the headlights, in a common bezel matching the headlamp bezel per the following:	X	
• 1 Model M6**, 4.31" high x 6.75" long x 1.38" deep light installed in the outside position on the driver's side. The driver's side front outside warning light to be red.	X	
• 1 Model 6RB**, 4.18" high x 6.56"" long x 3.43" deep light installed in the inside position on the driver's side. The driver's side front inside warning light to be red.	X	
• 1 Model 6RB**, 4.18" high x 6.56"" long x 3.43" deep light installed in the inside position on the passenger's side. The passenger's side front inside warning light to be red.	X	
• 1 Model M6**, 4.31" high x 6.75" long x 1.38" deep light installed in the outside position on the passenger's side. The passenger's side front outside warning light to be red.	X	
The lens colors shall be the same color as the LED's.	X	
There shall be a switch located in the cab on the switch panel to control both sets of lights.	X	
The inside lights may be load managed if colored or disabled if white when the parking brake is applied.	X	
HEADLIGHT FLASHER The high beam headlights shall flash alternately between the left and right side.	X	
There shall be a switch installed in the cab on the switch panel to control the high beam flash. This switch shall be live when the battery switch and the emergency master switches are on.	X	
The flashing shall automatically cancel when the hi-beam headlight switch is activated or when the parking brake is set.	X	
SIDE ZONE LOWER LIGHTING There shall be 6 Whelen®, Model M6**, 4.31" high x 6.75" long x 1.37" deep flashing LED warning lights with chrome trim installed per the following:	X	
• 2 lights located, 1 each side on the bumper extension. The driver's side, side front light to include red warning LEDs and the passenger's side, side front light to include red warning LEDs.	X	

	Meets Request	
	Yes	No
• 2 lights located, 1 each side of cab rearward of crew cab doors. The driver's side, side middle light to include red warning LEDs and the passenger's side, side middle light to include red warning LEDs.	X	
• 2 lights located, 1 each side above rear wheels. The driver's side, side rear light to include red warning LEDs and the passenger's side, side rear light to include red warning LEDs.	X	
• The warning light lens colors to be the same as the LEDs.	X	
There shall be a switch in the cab on the switch panel to control the lights.		
SIDE ZONE LOWER WARNING LIGHT FLASH PATTERN ADJUSTMENT The flash pattern of the 6 Whelen® M6** light(s) located all side warning lights shall be adjusted to CometFlash®75 L/R, pattern number 13.	X	
SIDE WARNING LIGHTS There shall be 2 Whelen®, Model M6**, 4.31" high x 6.75" wide x 1.37" deep flashing LED warning light(s) with chrome trim provided, above the front axle.	X	
The light(s) to include red flashing LEDs.	X	
The warning light lens colors to be the same as the LEDs.	X	
There shall be a switch in the cab on the switch panel to control the lights.	X	
White LEDs shall be deactivated when the parking brake is applied.	X	
Amber, blue, green, and red LEDs may be load managed when the parking brake is applied.	X	
SIDE WARNING LIGHT FLASH PATTERN ADJUSTMENT The flash pattern of the 6 Whelen®, Model M6** light(s) located All emergency lights shall be adjusted to CometFlash™ 75 PH 1, pattern number 11.	X	
REAR ZONE LOWER LIGHTING There shall be 2 Whelen®, Model M6*C LED flashing warning lights with chrome trim located at the rear of the apparatus.	X	
• The driver's side rear light to be red • The passenger's side rear light to be red	X	
The lenses shall be clear.	X	
There shall be a switch located in the cab on the switch panel to control the lights.	X	

	Meets Request	
	Yes	No
REAR OF HOSEBED WARNING LIGHTS There shall be 2 Whelen, Model B63M7**, Super LED beacons with Model M7**, lower LED flashing lights provided in a single polished aluminum housing at the rear of the truck.	X	
There shall be 1 installed on the driver's side with the lower light to the rear: • The driver's side beacon to include red LED's. • The rear lower light on the driver's side to be red.	X	
There shall be 1 installed on the passenger's side with the lower light to the rear: • The passenger's side beacon to include red LED's. • The rear lower light on the passenger's side to be amber.	X	
The color of the lenses for all the LED's to be the same color as the LED's.	X	
There shall be a switch located in the cab on the switch panel to control the lights.	X	
The lower light may be load managed when the parking brake is applied.	X	
The rear warning lights shall be mounted on brushed stainless-steel brackets with all wiring totally enclosed. These brackets shall also support the clearance/marker lights.		
INVERTER / BATTERY CHARGER There shall be a Vanner Model LSC12-1100 inverter/battery charger with internal 12A transfer relay provided.	X	
There shall be a part number LSCR charger status display and a part number LSIR inverter status display provided on the driver's seat riser.	X	
The inverter shall be connected battery direct through proper fusing and to AC shoreline power. A load management solenoid shall be installed between the battery and the inverter. The inverter shall be connected to power when the battery switch is on, and system voltage is above the low voltage threshold or when the shoreline is connected.	X	
When the shoreline is connected to the truck, the internal auto transfer switch shall allow AC shoreline power to pass through the inverter to the AC loads connected to the inverter.	X	
When the shoreline is connected to the truck, the battery charger function shall be active.	X	

	Meets Request	
	Yes	No
A master on/off switch for the inverter/battery charger shall be provided in the driver side cab switch panel.	X	
The inverter shall be rated at 825 watts output to meet NFPA requirements.	X	
INVERTER/BATTERY CHARGER LOCATION The inverter/battery charger shall be installed in the left side lower front body compartment high and to the left side of the compartment.	X	
120 VOLT RECEPTACLE There shall be 2, 15/20-amp 120-volt AC, 3 wire straight blade duplex receptacle(s) with interior stainless steel wall plate(s), installed one each side of the communication box exterior, down low to the rear of the cab. The NEMA configuration for the receptacle(s) shall be 5-20R.	X	
The receptacle(s) shall be powered from the on board 12-volt DC to 120-volt AC power inverter.	X	
There shall be a label installed near the receptacle(s) that state the following: • Line Voltage • Current Ratting (amps) • Phase • Frequency	X	
LOOSE EQUIPMENT The following equipment shall be furnished with the completed unit: • 1 bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts, and washers, as used in the construction of the unit	X	
NOZZLE A Task Force Tips Master Stream Series M-R nozzle shall be provided. The nozzle shall have a range of 250 to 1250 GPM, and manual pattern control.	X	
PAINT PROCESS The exterior custom cab and body painting procedure shall consist of a 7-step finishing process as follows: 1. Manual Surface Preparation - All exposed metal surfaces on the custom cab and body shall be thoroughly cleaned and prepared for painting. Imperfections on the exterior surfaces shall be removed and sanded to a smooth finish. Exterior seams shall be sealed before painting. Exterior surfaces that shall not be	X	

	Meets Request	
	Yes	No
painted include chrome plating, polished stainless steel, anodized aluminum, and bright aluminum treadplate. 2. Chemical Cleaning and Pretreatment - All surfaces shall be chemically cleaned to remove dirt, oil, grease, and metal oxides to ensure the subsequent coatings bond well. The aluminum surfaces shall be properly cleaned and treated using a high pressure, high temperature 4 step Acid Etch process. The steel and stainless surfaces shall be properly cleaned and treated using a high temperature 3 step process specifically designed for steel or stainless. The chemical treatment converts the metal surface to a passive condition to help prevent corrosion. 3. Surfacer Primer - The Surfacer Primer shall be applied to a chemically treated metal surface to provide a strong corrosion protective basecoat. A minimum thickness of 2 mils of Surfacer Primer is applied to surfaces that require a Critical aesthetic finish. The Surfacer Primer is a two-component high solids urethane that has excellent sanding properties and an extra smooth finish when sanded. 4. Finish Sanding - The Surfacer Primer shall be sanded with a fine grit abrasive to achieve an ultra-smooth finish. This sanding process is critical to produce the smooth mirror like finish in the topcoat. 5. Sealer Primer - The Sealer Primer is applied prior to the Basecoat in all areas that have not been previously primed with the Surfacer Primer. The Sealer Primer is a two-component high solids urethane that goes on smooth and provides excellent gloss hold out when top coated. 6. Basecoat Paint - Two coats of a high performance, two component high solids polyurethane basecoat shall be applied. The Basecoat shall be applied to a thickness that shall achieve the proper color match. The Basecoat shall be used in conjunction with a urethane clear coat to provide protection from the environment. 7. Clear Coat - 2 coats of Clear Coat shall be applied over the Basecoat color. The Clear Coat is a two-component high solids urethane that provides superior gloss and durability to the exterior surfaces. Lap style and roll-up doors shall be Clear Coated to match the body. Paint warranty for the roll-up doors shall be provided by the roll-up door manufacturer.		
After the cab and body are painted, the color shall be verified to make sure that it matches the color standard. Electronic color measuring equipment shall be used to compare the color sample to the color standard entered into the computer. Color specifications shall be used to determine the color match. A Delta E reading shall be used to determine a good color match within each family color.	X	

	Meets Request	
	Yes	No
All removable items such as brackets, compartment doors, door hinges, and trim shall be removed and painted separately if required, to ensure paint behind all mounted items. Body assemblies that cannot be finish painted after assembly shall be finish painted before assembly.	X	
The paint finish quality levels for critical areas of the apparatus (cab front and sides, body sides and doors, and boom lettering panels) are to meet or exceed Cadillac/General Motors GMW15777 global paint requirements. Orange peel levels are to meet or exceed the #6 A.C.T. standard in critical areas. These requirements must be met in order for the exterior paint finish to be considered acceptable. The manufacture's written paint standards shall be available upon request.	X	
Environmental Impact Contractor shall meet or exceed all current state regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water, and soil. Controls shall include the following conditions: • Topcoats and primers shall be chrome and lead free. • Metal treatment chemicals shall be chrome free. The wastewater generated in the metal treatment process shall be treated on-site to remove any other heavy metals. • Particulate emission collection from sanding operations shall have a 99.99 percent efficiency factor. • Particulate emissions from painting operations shall be collected by a dry filter or water wash process. If the dry filter is used, it shall have an efficiency rating of 98 percent. Water wash systems shall be 99.97 percent efficient • Water from water wash booths shall be reused. Solids shall be removed on a continual basis to keep the water clean. • Paint wastes are disposed of in an environmentally safe manner. • Empty metal paint containers shall be recycled to recover the metal. • Solvents used in clean-up operations shall be recycled on-site or sent off-site for distillation and returned for reuse.	X	
Additionally, the finished apparatus shall not be manufactured with or contain products that have ozone depleting substances. Contractor shall, upon demand, present evidence that the manufacturing facility meets the above conditions and that it is in compliance with his state EPA rules and regulations.	X	
CAB PAINT The cab shall be painted 350 Red.	X	

	Meets Request	
	Yes	No
BODY PAINT The body shall be painted to match the lower section of the cab.	X	
PAINT CHASSIS FRAME ASSEMBLY The chassis frame assembly shall be finished with primer and gloss paint to match the lower job color before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, etc.	X	
Components that are included with the chassis frame assembly that shall be painted are: • Frame rails • Frame liners • Cross members • Axles • Suspensions • Steering gear • Battery boxes • Bumper extension weldment • Frame extensions • Body mounting angles • Rear Body support substructure (front and rear) • Pump house substructure • Air tanks • Steel fuel tank • Castings • Individual piece parts used in chassis and body assembly	X	
Components treated with epoxy E-coat protection prior to paint: • 2 C-channel frame rails • 2 frame liners	X	
The E-coat process shall meet the technical properties shown.	X	
AXLE HUB PAINT All axle hubs shall be painted to match primary job color.	X	
The cab wheel wells shall be unpainted.	X	

	Meets Request	
	Yes	No
COMPARTMENT INTERIOR PAINT The interior of all compartments shall be painted with a gray spatter type paint.	X	
REFLECTIVE BAND A 4.00" white reflective band shall be provided across the front of the vehicle and along the sides of the body.	X	
The reflective band provided on the cab face shall be at the headlight level.	X	
REAR CHEVRON STRIPING There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus. The rear surface, excluding the rear compartment door, shall be covered.	X	
The colors shall be red and fluorescent yellow green diamond grade.	X	
Each stripe shall be 6.00" in width.	X	
This shall meet the requirements of the current edition of NFPA 1901, which states that 50% of the rear surface shall be covered with chevron striping.	X	
ADDITIONAL GRAPHICS The reflective stripe shall wrap around all doors and into the hinges on cab and body, except for on the front, leave 1/8" gap from the grille to the stripe. There shall be an 1/8" space on both sides of the signgold stripe up to the scotch lite stripe on both sides where they meet.	X	
REFLECTIVE, CAB DOORS 6.00" high reflective white reverse cut lettering.	X	
This sign shall meet the NFPA 1901 requirement.	X	
CAB STRIPE There shall be a Sign Gold stripe provided on both sides of the cab in place of the chrome molding and on the cab face with shield.	X	
LETTERING The lettering shall be 22 karat gold vinyl.	X	
BODY STRIPE There shall be a Sign Gold stripe around the top, bottom, front, and rear edges of the body compartments with scrolls in each corner.	X	

	Meets Request	
	Yes	No
LETTERING There shall be sign gold lettering, 3.00" high, with outline and shade provided. There shall be 12 letters provided.	X	
LETTERING There shall be reflective lettering, 8.00" high, with no outline or shade provided. There shall be fourteen (14) letters provided.	X	
LETTERING There shall be reflective lettering, 3.00" high, with no outline or shade provided. There shall be 9 letters provided.	X	
LETTERING There shall be sign gold lettering, 2.00" high, with outline and shade provided. There shall be 9 letters provided.	X	
LETTERING There shall be sign gold lettering, 4.00" high, with outline and shade provided. There shall be 16 letters provided.	X	
LETTERING There shall be reflective lettering, 24.00" high, with no outline or shade provided. There shall be 2 letters provided.	X	
LETTERING There shall be reflective lettering, 12.00" high, with no outline or shade provided. There shall be 3 letters provided.	X	
LETTERING ON MUD FLAPS The front and rear mud flaps shall state the following in reflective lettering: Match Corner Logo There shall be 2 different colors of reflective lettering provided. The following shall be in color 1: LB The font style of the lettering shall be Full Block. The color of the lettering shall be red with white outline The font style of the lettering shall be full block The color of the lettering shall be red with white outline	X	
EMBLEM OMITTED The logo plate mounted to each cab door shall be omitted.	X	

	Meets Request	
	Yes	No
EMBLEMS There shall be 1 pair of maltese crosses, comprised of sign gold material, provided, and installed on the front cab doors.	X	
EMBLEM/S There shall be 1 pair SignGold with black outline scrolling ribbon/s, installed on the crew cab doors. Each shall have "100 Years of Service", in black lettering.	X	
LETTERING/NUMERALS ON CAB GRILLE 2 painted letters/numerals with outline, as determined by the fire department, shall be provided on the cab grille.	X	
FIRE APPARATUS PARTS MANUAL There shall be 2 custom parts manual(s) in USB flash drive format for the complete fire apparatus provided.	X	
The manual(s) shall contain the following: • 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	X	
Each manual shall be specifically written for the chassis and body model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.	X	
CHASSIS SERVICE MANUALS There shall be 2 chassis service manuals on USB flash drives containing parts and service information on major components provided with the completed unit.	X	
The manual shall contain the following sections: • Job number • Table of contents • Troubleshooting • Front Axle/Suspension • Brakes	X	

	Meets Request	
	Yes	No
• Engine • Tires • Wheels • Cab • Electrical, DC • Air Systems • Plumbing • Appendix		
The manual shall be specifically written for the chassis model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.	X	
CHASSIS OPERATION MANUAL The chassis operation manual shall be provided on 1 USB flash drive.	X	
OPERATOR TRAINING One day minimum of on-site training shall take place after delivery and before 1st unit is placed in-service to familiarize Fire Department staff with delivered unit	X	
TECHNICIAN TRAINING One day minimum of on-site training shall take place after delivery and before 1st unit is placed in-service to familiarize Fleet Service Technician staff with delivered unit	X	
TRAINING (FACTORY TYPE) Manufacturer specific training of the purchased chassis, suspension, electrical and multiplex systems shall be provided for 4 Technicians to include all educational supplies, travel, and accommodations. If prerequisite training is required, that shall also be included. All training should be completed at first available dates after delivery of Pumpers.	X	
1 YEAR MATERIAL AND WORKMANSHIP Each new piece of apparatus shall be provided with a minimum **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.	X	
A copy of the warranty certificate shall be submitted with the bid package.		

	Meets Request	
	Yes	No
ENGINE WARRANTY A Cummins **5-year** limited engine warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.	X	
STEERING GEAR WARRANTY A Sheppard **3-year** limited steering gear warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.	X	
FIFTY (50) YEAR STRUCTURAL INTEGRITY The chassis frame shall be provided with a **fifty (50) year** material and workmanship limited warranty. The warranty shall cover the chassis frame as being free from defects in material and workmanship that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package	X	
FRONT AXLE 3 YEAR MATERIAL AND WORKMANSHIP WARRANTY Independent front suspension shall be provided with a **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.	X	
SINGLE REAR AXLE 5 YEAR MATERIAL AND WORKMANSHIP WARRANTY A Meritor™ Axle 5-year limited warranty shall be provided.	X	
ABS BRAKE SYSTEM 3 YEAR MATERIAL AND WORKMANSHIP WARRANTY A Meritor Wabco™ ABS brake system **3-year** limited warranty shall be provided.	X	
EXTENDED CAB WARRANTY A copy of the fire apparatus manufacturer's warranty shall be included with the bid. The warranty shall state that the cab shall be free of structural failures caused by defective design or workmanship for an extended warranty period of 5 years past the standard 10-year structural cab warranty for a total of fifteen (15) years.	X	
Corrosion is not considered a structural defect nor is paint considered part of this warranty. In order for this warranty to remain valid for the fifteen (15) year period, a reasonable maintenance schedule as well as annual inspections at 10 years and annual inspections thereafter are to be completed on the apparatus. If routine maintenance and the required inspections are not performed or the unit is involved in an accident, the warranty is void. Warranty is limited to 100,000 miles. Warranty is not transferable.	X	

	Meets Request	
	Yes	No
10 YEAR PRO-RATED PAINT AND CORROSION Each new piece of apparatus shall be provided with a **10-year** pro-rated paint and corrosion limited warranty on the apparatus cab. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.	X	
A copy of the warranty certificate shall be submitted with the bid package.		
5 YEAR MATERIAL AND WORKMANSHIP The electronic modules and display(s) shall be provided with a 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.	X	
A copy of the warranty certificate shall be submitted with the bid package.		
CAMERA SYSTEM WARRANTY A 4-year minimum warranty shall be provided for the camera system.	X	
COMPARTMENT LIGHT WARRANTY A 10-year material and workmanship limited warranty shall be provided for the Pierce 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.	X	
A copy of the warranty certificate shall be submitted with the bid package.	X	
TRANSMISSION WARRANTY The transmission shall have a **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.	X	
TRANSMISSION COOLER WARRANTY The transmission cooler shall carry a 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 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.	X	
WATER TANK WARRANTY The UPF poly water tank shall be provided with a lifetime material and workmanship limited warranty.	X	
A copy of the warranty certificate shall be submitted with the bid package.	X	

	Meets Request	
	Yes	No
FIFTEEN (15) YEAR STRUCTURAL INTEGRITY 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.	X	
A copy of the warranty certificate shall be submitted with the bid package.		
ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY A Gortite roll-up door limited warranty shall be provided. The mechanical components of the roll-up door shall be warranted against defects in material and workmanship for the lifetime of the vehicle. A **6-year** limited warranty shall be provided on painted and satin roll up doors.	X	
A copy of the warranty certificate shall be submitted with the bid package.	X	
PUMP WARRANTY The Waterous pump shall be provided with a 7-year material and workmanship limited warranty.	X	
A copy of the warranty certificate shall be submitted with the bid package.	X	
10 YEAR PUMP PLUMBING WARRANTY 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 **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.	X	
A copy of the warranty certificate shall be submitted with the bid package.		
10 YEAR PRO-RATED PAINT AND CORROSION Each new piece of apparatus shall be provided with a **10-year** pro-rated paint and corrosion limited warranty on the apparatus body. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.	X	
A copy of the warranty certificate shall be submitted with the bid package.	X	

	Meets Request	
	Yes	No
1 YEAR MATERIAL AND WORKMANSHIP The graphic lamination shall be provided with a 1-year material and workmanship limited warranty. The warranty shall cover the graphic lamination as being free from defects in material, workmanship, fading, and deterioration that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package.	X	
VEHICLE STABILITY CERTIFICATION 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.	X	
ENGINE INSTALLATION CERTIFICATION 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 proposer's chassis. The certification shall be provided at the time of delivery.	X	
POWER STEERING CERTIFICATION 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.	X	
CAB INTEGRITY CERTIFICATION The fire apparatus manufacturer shall provide a cab crash test certification with this proposal. The certification shall state that a specimen representing the substantial structural configuration of the cab has been tested and certified by an independent third-party test facility. Testing events shall be documented with photographs, real-time and high-speed video, vehicle accelerometers, cart accelerometers, and a laser speed trap. The fire apparatus manufacturer shall provide a state licensed professional engineer to witness and certify all testing events. Testing shall meet or exceed the requirements below: • European Occupant Protection Standard ECE Regulation No.29. • SAE J2422 Cab Roof Strength Evaluation - Quasi-Static Loading Heavy Trucks. • SAE J2420 COE Frontal Strength Evaluation - Dynamic Loading Heavy Trucks.	X	
Roof Crush The cab shall be subjected to a roof crush force of 22,500 lb. This value meets the ECE 29 criteria and is equivalent to the front axle rating up to a maximum of 10 metric tons.	X	

	Meets Request	
	Yes	No
Side Impact The same cab shall be subjected to dynamic preload where a 13,275-lb moving barrier is slammed into the side of the cab at 5.50 mph, striking with an impact of 13,000 ft-lb of force. This test is part of the SAE J2422 test procedure and more closely represents the forces a cab shall see in a rollover incident.	X	
Frontal Impact The same cab shall withstand a frontal impact of 32,600 ft-lb of force using a moving barrier in accordance with SAE J2420.	X	
Additional Frontal Impact The same cab shall withstand a frontal impact of 65,200 ft-lb of force using a moving barrier. (Twice the force required by SAE J2420)	X	
The same cab shall withstand all tests without any measurable intrusion into the survival space of the occupant area.	X	
There shall be no exception to any portion of the cab integrity certification. Nonconformance shall lead to immediate rejection of proposal.	X	
CAB DOOR DURABILITY CERTIFICATION Robust cab doors help protect occupants. Cab doors shall survive a 200,000-cycle door slam test where the slamming force exceeds 20 G's of deceleration. The proposer 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.	X	
WINDSHIELD WIPER DURABILITY CERTIFICATION Visibility during inclement weather is essential to safe apparatus performance. Windshield wipers shall survive a 3 million cycle durability test in accordance with section 6.2 of SAE J198 *Windshield Wiper Systems - Trucks, Buses and Multipurpose Vehicles*. The proposer shall certify that the wiper system design has been tested and that the wiper system has met these criteria.	X	
SEAT BELT ANCHOR STRENGTH Seat belt attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat belt anchor design shall withstand 3000 lb. of pull on both the lap and shoulder belt in accordance with FMVSS 571.210 Seat Belt Assembly Anchorages. The proposer shall certify that each anchor design was pull tested to the required force and met the appropriate criteria.	X	

	Meets Request	
	Yes	No
SEAT MOUNTING STRENGTH Seat attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat mounting design shall be tested to withstand 20 G's of force in accordance with FMVSS 571.207 Seating Systems. The proposer shall certify, at time of delivery, that each seat mount and cab structure design was pull tested to the required force and met the appropriate criteria.	X	
PERFORMANCE CERTIFICATIONS		
Cab Defroster Visibility during inclement weather is essential to safe apparatus performance. The defroster system shall clear the required windshield zones in accordance with SAE J381 Windshield Defrosting Systems Test Procedure and Performance Requirements - Trucks, Buses, And Multipurpose Vehicles. The proposer shall certify that the defrost system design has been tested in a cold chamber and passes the SAE J381 criteria.	X	
Cab Auxiliary Heater Good cab heat performance and regulation provides a more effective working environment for personnel, whether in-transit, or at a scene. An auxiliary cab heater shall warm the cab 77 degrees Fahrenheit from a cold soak, within 30 minutes when tested using the coolant supply methods found in SAE J381. The proposer shall certify, at time of delivery, that a substantially similar cab has been tested and has met these criteria.	X	
AMP DRAW REPORT The proposer 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.	X	
The manufacturer of the apparatus shall provide the following: • Documentation of the electrical system performance tests. • A written load analysis, which shall include the following: o The nameplate rating of the alternator. o The alternator rating under the conditions specified per: ▪ Applicable NFPA 1901 or 1906 (Current Edition). o The minimum continuous load of each component that is specified per: ▪ Applicable NFPA 1901 or 1906 (Current Edition). o Additional loads that, when added to the minimum continuous load, determine the total connected load. o Each individual intermittent load.	X	

	Meets Request	
	Yes	No
All the above listed items shall be provided by the proposer per the applicable NFPA 1901 or 1906 (Current Edition).	X	

	Meets Request	
	Yes	No
SPECIFICATIONS FOR A TRIPLE COMBINATION PUMPER - RESCUE		
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 should conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor.	X	
EXCEPTIONS These specifications reflect the type of fire apparatus that is desired at this time.		
Proposers shall indicate in the "yes/no" column if their proposal meets request on each item. If "no" is indicated, additional comments and justification with potential mitigating alternative solutions should be provided.	X	
If a product brand name is specified and is commercially available to all proposers, an exception to such items is not desirable.		
APPROVAL DRAWING A drawing of the proposed apparatus shall be provided for approval before construction begins. The sales representative shall also have a copy of the same drawing. The finalized and approved drawing shall become part of the contract documents. This drawing shall indicate the chassis make and model, location of the lights, siren, horns, compartments, major components, etc.	X	
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.	X	
FINAL DRAWING There shall be a revised drawing of the apparatus with all the changes made during production provided at pickup.	X	
DRAWING, COMPARTMENT LAYOUT A basic drawing shall be provided for the interior body compartments. This drawing shall be provided for graphic representation only and shall include such things as shelves, trays, reels, dividers, air control panels, air bottle storage bins, poly boxes & etc.	X	

	Meets Request	
	Yes	No
ELECTRICAL WIRING DIAGRAMS 3flash drives containing "As-Built" electrical wiring diagrams specifically prepared for the chassis and body shall be provided. The diagrams shall consist of information pertaining to the 12 VDC systems only. Of the 3, 2 flash drives shall be shipped with the loose equipment with each truck. The final 1 flash drive shall be included with the job folder at apparatus builders' facility for future reference.	X	
All diagram files shall include the following capabilities: • The capability of viewing each separate diagram. • The capability of zooming in on any section of each separate diagram. • The capability of printing each separate diagram. • The capability of printing each zoomed in area of each separate diagram.	X	
Each flash drive shall include the following items: • Title page, identifying the job number and chassis model. • Table of contents. • Truck specific electrical compartment and instrument layouts for the chassis. • Truck specific electrical compartment layouts for the body. • Applicable drawings from the appropriate standard wiring diagrams. • All truck specific wiring diagrams (special drawings). • Harness drawings for all wiring harnesses used on the chassis. • Harness drawings for all wiring harnesses used on the body. • All truck input and output programming sheets (multiplexed trucks only).	X	
There shall be no hard copies of these diagrams required for this unit.	X	
CHASSIS Chassis provided shall be a new, tilt-type custom fire apparatus. The chassis shall be manufactured in the apparatus body builder's facility eliminating any split responsibility. The chassis shall be designed and manufactured for heavy-duty service, with adequate strength and capacity for the intended load to be sustained and the type of service required.	X	
MAXIMUM OVERALL HEIGHT The maximum overall height of the apparatus shall be 120".	X	
WHEELBASE The wheelbase of the vehicle shall be no greater than 172".		X

	Meets Request	
	Yes	No
GVW RATING The gross vehicle weight rating shall be a minimum of 44,000.	X	
FRAME The chassis frame shall be built with 2 steel channels bolted to 5 cross members or more. The side rails shall be heat-treated steel measuring 10.25" x 3.50" x 0.375".	X	
Each rail shall have a section modulus of 16.00 cubic inches, yield strength of 120,000 psi, and a resisting bending moment (rbm) of 1,921,069 inch-pounds.	X	
FRAME REINFORCEMENT A full-length mainframe "C" liner shall be provided.	X	
The liner shall be an internal "C" design, heat-treated steel measuring 9.38" x 3.13" x .25". Each reinforcement member shall have a section modulus of 3.90 cubic inches, yield strength of 120,000 psi and resisting bending moment (rbm) of 938,762 in-lb.	X	
In addition, a L-shaped steel channel reinforcement shall be located under each mainframe rail.	X	
FRONT NON-DRIVE AXLE The front axle shall be of the independent suspension design with a ground rating of 19,500 lb.	X	
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.	X	
The center cross members and side plates shall be constructed out of 80,000-psi yield strength steel.	X	
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.	X	
There shall be 9 grease fittings supplied, 1 on each control arm pivot and 1 on the steering gear extension.	X	
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.	X	

	Meets Request	
	Yes	No
Camber at load shall be zero degrees for optimum tire life.	X	
The ball joint bearing shall be of low friction design and be maintenance free.	X	
Toe links that are adjustable for alignment of the wheel to the center of the chassis shall be provided.	X	
The wheel ends must have little to no bump steer when the chassis encounters a hole or obstacle.	X	
The steering linkage shall provide proper steering angles for the inside and outside wheel, based on the vehicle wheelbase.	X	
The axle shall have a turning angle of up to 45 degrees.	X	
FRONT SUSPENSION An independent front suspension shall be provided with a minimum ground rating of 19,500 lb.	X	
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.	X	
Each wheel shall have a torsion bar type spring. In addition, each front wheel end shall also have energy absorbing jounce bumpers to prevent bottoming of the suspension.	X	
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.	X	
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.	X	
The independent suspension shall have been put through a durability test that simulated a minimum of 140,000 miles of inner city driving.	X	
FRONT SHOCK ABSORBERS Heavy-duty telescoping shock absorbers shall be provided on the front suspension.	X	
FRONT OIL SEALS Oil seals with viewing window shall be provided on the front axle.	X	

	Meets Request	
	Yes	No
FRONT TIRES The front tires shall be Michelin 385/65R22.50, X Multi HL Z tread, rated for 22,000 lb. maximum axle load and 75 mph maximum speed.	X	
The tires shall be mounted on Alcoa 22.50" x 12.25" polished aluminum disc type wheels with a 10 stud, 11.25" bolt circle.	X	
REAR AXLE The rear axle shall be a Meritor™, Model RS-23-186, with a capacity of 24,000 lb.	X	
TOP SPEED OF VEHICLE NFPA 1901, 2016 edition requires limits on the top speed of vehicles. NFPA 4.15.2 requires that the maximum top speed of fire apparatus with a GVWR over 26,000 lb. shall not exceed either 68 mph or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower. NFPA 4.15.3 requires that if the combined water tank and foam agent tank on the fire apparatus exceed 1250 gallons or the GVWR of the vehicle is over 50,000 lb., the maximum top speed of the apparatus shall not exceed either 60 mph or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower. It is the intention of the standard to improve safety by limiting the speed of all apparatus to 68 mph.	X	
A rear axle ratio shall be furnished to allow the vehicle to reach an approximate top speed of 68 MPH.	X	
REAR SUSPENSION The rear suspension shall be Standens, semi-elliptical, 3.00" wide x 53.00" long, 12-leaf pack with a ground rating of 27,000 lb. The spring hangers shall be castings.	X	
The 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. A steel encased rubber bushing shall be used in the spring eye.	X	
The steel encased rubber bushing shall be maintenance free and require no lubrication.	X	
REAR OIL SEALS Oil seals shall be provided on the rear axle(s).	X	
REMOTE GREASE FITTING There shall be a remote grease fitting plumbed to an area accessible for maintenance for the rear suspension. It shall be located below the body rear of the drive axle	X	

	Meets Request	
	Yes	No
REAR TIRES Rear tires shall be 4 Michelin 12R22.50 radials, 16 ply all season XDN2 tread, rated for 27,120 lb. maximum axle load and 75 mph maximum speed.	X	
The tires shall be mounted on Alcoa 22.50" x 8.25" polished aluminum disc wheels with a 10 stud 11.25" bolt circle.	X	
TIRE PRESSURE MANAGEMENT There shall be a RealWheels LED AirSecure™ tire alert pressure management system provided, that shall monitor each tire's pressure. A sensor shall be provided on the valve stem of each tire for a total of 6 tires.	X	
The sensor shall calibrate to the tire pressure when installed on the valve stem for pressures between 10 and 200 psi. The sensor shall activate an integral battery-operated LED when the pressure of that tire drops 5 to 8 psi.	X	
Removing the cap from the sensor shall indicate the functionality of the sensor and battery. If the sensor and battery are in working condition, the LED shall immediately start to flash.	X	
FRONT HUB COVERS Stainless steel hub covers shall be provided on the front axle. An oil level viewing window shall be provided.	X	
HUB COVERS (REAR) A pair of stainless-steel high-hat hub covers shall be provided on rear axle hubs. The covers shall be manufactured by Real Wheels, Inc, and shall come with the standard warranty.	X	
CHROME LUG NUT COVERS Chrome lug nut covers shall be supplied on front and rear wheels.	X	
FRONT AND REAR MUD FLAPS Mud flaps with a custom logo shall be installed behind the front and rear wheels of the apparatus.	X	
WHEEL CHOCKS There shall be 1 pair of Worden Safety Products, Model HWG-SB, wheel chocks provided.	X	
Heavy Duty, large, molded aluminum wheel chock with solid bottom, natural cast aluminum finish.	X	

	Meets Request	
	Yes	No
WHEEL CHOCK BRACKETS There shall be 1 pair of Worden Safety model U815T mounting wheel chock brackets provided. The brackets shall be mounted one each side, behind the rear axle.	X	
ANTI-LOCK BRAKE SYSTEM The vehicle shall be equipped with a 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 wheel begins to lockup, a signal is shall be sent to the control unit. This control unit then shall reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.	X	
AUTOMATIC TRACTION CONTROL An anti-slip feature shall be included with the ABS. The Automatic Traction Control shall be used for traction in poor road and weather conditions. The Automatic Traction Control shall act as an electronic differential lock that shall not allow a driving wheel to spin, thereby supplying traction at all times. The ABS electronic control unit (ECU) shall work with the engine ECU, sharing information concerning wheel slip. Engine ECU shall use information to control engine speed, allowing only as much throttle application as required for the available traction, regardless of how much the driver is asking for. An "off road traction" switch shall be provided on the instrument panel. Activation of the switch shall allow additional tire slip to let the truck climb out and get on top of deep snow or mud.	X	
BRAKES The service brake system shall be full air type.	X	
The front brakes shall be Knorr/Bendix disc type with a 17.00" ventilated rotor for improved stopping distance.	X	
The brake system shall be certified, third party inspected, for improved stopping distance.	X	
The rear brakes shall be Meritor™, Disc Plus, Model EX225, disc operated with automatic slack adjusters and a 17.00" ventilated rotor for improved stopping distance.	X	
BRAKE SYSTEM AIR COMPRESSOR The air compressor shall be a Cummins/WABCO with 25.9 cubic feet per minute output.	X	

	Meets Request	
	Yes	No
BRAKE SYSTEM The brake system shall include: • Brake treadle valve • Heated automatic moisture ejector on air dryer • Total air system minimum capacity of 4,272 cubic inches • 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, with an automatic spring brake application at 40 psi • A pressure protection valve to prevent all air operated accessories from drawing air from the air system when the system pressure drops below 80 psi (550 kPa) • 1/4 turn drain valves on each air tank	X	
The air tank shall be primed and painted to meet a minimum 750-hour salt spray test.	X	
To reduce the effects of corrosion, the air tank shall be mounted with stainless steel brackets (no exception).	X	
BRAKE SYSTEM AIR DRYER The air dryer shall be WABCO System Saver 1200 with spin-on coalescing filter cartridge and 100-watt heater.	X	
BRAKE LINES Color-coded nylon brake lines shall be provided. The lines shall be wrapped in a heat protective loom where necessary in the chassis.	X	
AIR INLET 1 air inlet with male coupling shall be provided. It shall allow air to be supplied to the apparatus brake system through a shoreline hose. The air inlet shall be recessed into the driver's side cab step riser. A check valve shall be provided to prevent reverse air flow. The inlet shall discharge into the "wet" tank of the brake system. A mating female coupling shall also be provided with the loose equipment.	X	
AIR OUTLET 1 air outlet shall be installed with a female coupling located on the driver side pump panel. This system shall tie into the "wet" tank of the brake system, include an 85-psi	X	

	Meets Request	
	Yes	No
pressure protection valve in the outlet line to prevent the brake system from losing all air, and include a quarter turn shut off valve mounted at the tank. The valve and all hoses shall be mounted to the tank as high as possible to ensure maximum clearance and protect the lines from being damaged by brush and rocks during odd-road operations.		
RECESSED BOX FOR AIR FITTING 1 air inlet shall have an aluminum treadplate recessed box provided. The box(es) shall allow the air fitting to be recessed inside the stepwell to prevent damage. in the forward driver side stepwell.	X	
REMOTE AIR TANK DRAIN There shall be a single remote drain valve provided to drain all air supply reservoirs at the same time. The drain valve shall be actuated from the side of the apparatus. The drain valve shall be located Forward of the driver side axle. Automatic valves shall be provided to isolate the reservoirs from one another when the drain is closed.	X	
COMPRESSION FITTINGS ONLY Any nylon tube on the apparatus that is pneumatic shall be plumbed with compression type fittings where applicable. Push lock fittings shall not be acceptable for any pneumatic nylon tube plumbing.	X	
ENGINE The chassis shall be powered by an electronically controlled engine as described below:	X	

Make:	Cummins
Model:	X12
Power:	500 hp at 1900 rpm
Torque:	1700 lb.-ft at 1000 rpm
Governed Speed:	2000 rpm
Emissions Level:	EPA 2021
Fuel:	Diesel
Cylinders:	6
Displacement:	729 cubic inches (11.9L)
Starter:	Delco 39MT™
Fuel Filters:	Spin-on style primary filter with water separator and water-in-fuel sensor. Secondary spin-on style filter.

	Meets Request	
	Yes	No
The engine shall include On-board diagnostics (OBD), which provides self-diagnostic and reporting. The system shall give the owner or repair technician access to state of health information for various vehicle sub systems. The system shall monitor vehicle systems, engine and after treatment. The system shall illuminate a malfunction indicator light on the dash console if a problem is detected.	X	
REMOTE MOUNTED ENGINE FILTERS The engine fuel and oil filters shall be remote mounted for ease of maintenance.	X	
HIGH IDLE A high idle switch shall be provided, inside the cab, on the instrument panel, that shall automatically maintain a preset 1000 engine rpm. A switch shall be installed, at the cab instrument panel, for activation/deactivation.	X	
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."	X	
ENGINE BRAKE A Jacobs® engine brake is to be installed with the controls located on the instrument panel within easy reach of the driver.	X	
The driver shall be able to turn the engine brake system on/off and have a high, medium, and low setting.	X	
The engine brake shall activate when the system is on and the throttle is released.	X	
The high setting of the brake application shall activate and work simultaneously with the variable geometry turbo (VGT) provided on the engine.	X	
The engine brake shall be installed in such a manner that when the engine brake is slowing the vehicle the brake lights are activated.	X	
The ABS system shall automatically disengage the auxiliary braking device, when required.	X	
CLUTCH FAN A fan clutch shall be provided. The fan clutch shall be automatic when the pump transmission is in "Road" position, and constantly engaged when in "Pump" position.	X	

	Meets Request	
	Yes	No
ENGINE AIR INTAKE The engine air intake shall be located above the engine cooling package. It shall draw fresh air from the front of the apparatus through the radiator grille.	X	
The ember separator is designed to prevent road dirt and recirculating hot air from entering the engine.	X	
The ember separator shall be easily accessible by tilting the cab.	X	
EXHAUST SYSTEM The exhaust system shall include a Single Module™ aftertreatment device to meet current EPA standards. The exhaust system shall be stainless steel from the turbo to the inlet of the aftertreatment device and shall be 5.00" in diameter. An insulation wrap shall be provided on all exhaust pipes between the turbo and aftertreatment device to minimize the heat loss to the aftertreatment device. The exhaust shall terminate horizontally ahead of the right-side rear wheels. A tailpipe diffuser shall be provided to reduce the temperature of the exhaust as it exits. Heat deflector shields shall be provided to isolate chassis and body components from the heat of the tailpipe diffuser.	X	
EXHAUST MODIFICATION 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 diffuser shall be 7.00". There shall be a clearance of 4.00" completely 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.	X	
RADIATOR The radiator and the complete cooling system shall meet or exceed NFPA and engine manufacturer cooling system standards.	X	
For maximum corrosion resistance and cooling performance, the entire radiator core shall be constructed using long life aluminum alloy. The radiator core shall consist of aluminum fins, having a serpentine design, brazed to aluminum tubes. No solder joints or leaded material of any kind shall be acceptable in the core assembly.	X	
The radiator core shall have a minimum front area of 1060 square inches.	X	
Supply tank shall be made of heavy-duty glass-reinforced nylon and the return tank shall be mode of aluminum. Both tanks shall be crimped onto the core assembly using header tabs and a compression gasket to complete the radiator core assembly. There shall be a full steel frame around the inserts to enhance cooling system durability and reliability.	X	

	Meets Request	
	Yes	No
The radiator shall be compatible with commercial antifreeze solutions.	X	
The radiator assembly shall be isolated from the chassis frame rails with rubber isolators to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven terrain.	X	
The radiator shall include a de-aeration/expansion tank. For visual coolant level inspection, the radiator shall have a built-in sight glass. The radiator shall be equipped with a 15-psi pressure relief cap.	X	
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.	X	
Shields or baffles shall be provided to prevent recirculation of hot air to the inlet side of the radiator.	X	
COOLANT LINES Gates, or Goodyear, rubber hose shall be used for all engine coolant lines installed by the chassis manufacturer.	X	
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.	X	
RADIATOR SKID PLATE A lower radiator skid plate shall be supplied for protection. The skid plate shall be constructed of 0.25" steel plate.	X	
FUEL TANK A 65-gallon fuel tank shall be provided and mounted at rear of 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).	X	
A .75" drain plug shall be provided in a low point of the tank for drainage.	X	
A fill inlet shall be located on the left hand and right-hand sides of the body and be covered with a hinged, spring-loaded, stainless-steel door that is marked "Ultra Low Sulfur - Diesel Fuel Only."	X	
A .50" diameter vent shall be provided running from top of tank to just below fuel fill inlets.	X	

	Meets Request	
	Yes	No
The tank shall meet all FHWA 393.67 requirements including a fill capacity of 95 percent of tank volume.	X	
Servicing the fuel tank pick-up tubes and fuel gauge sending unit shall be capable of being accomplished by draining fuel and dropping tank.	X	
All fuel lines shall be provided as recommended by the engine manufacturer.	X	
DIESEL EXHAUST FLUID TANK 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.	X	
A 0.50" drain plug shall be provided in a low point of the tank for drainage.	X	
A fill inlet shall be located on the driver's side of the body and be covered with a hinged, spring loaded, brushed stainless steel door that is marked "Diesel Exhaust Fluid Only".	X	
The tank shall meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing.	X	
The tank shall include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.	X	
FUEL PRIMING PUMP A Cummins automatic electronic fuel priming pump shall be integrated as part of the engine.	X	
FUEL COOLER An air to fuel cooler shall be installed in the engine fuel return line.	X	
FUEL FILL DOOR A brushed stainless steel fuel fill door shall be installed.	X	
FUEL CAP A Velvac® brass fuel cap shall be provided.	X	
FUEL SEPARATOR The engine shall be equipped with a Racor in-line spin-on fuel and water separator in addition to the engine fuel filters.	X	
TRANSMISSION An Allison 6th generation, Model EVS 4000P, electronic, torque converting, automatic transmission shall be provided.	X	

	Meets Request	
	Yes	No
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.	X	
2 PTO openings shall be located on left side and top of converter housing (positions 8 o'clock and 1 o'clock).	X	
A transmission temperature gauge with an amber light and buzzer shall be installed on the cab instrument panel.	X	
TRANSMISSION SHIFTER A 6-speed push button shift module shall be mounted to right of driver on console. Shift position indicator shall be indirectly lit for after dark operation.	X	
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		
TRANSMISSION COOLER A Modine plate and fin transmission oil cooler shall be provided using engine coolant to control the transmission oil temperature.	X	
DOWNSHIFT MODE (W/ENGINE BRAKE) The transmission shall be provided with an aggressive downshift mode.	X	
This shall provide earlier transmission downshifts to 3rd gear from 6th gear, resulting in improved engine braking performance.	X	
DRIVELINE Drivelines shall be a heavy-duty metal tube and be equipped with Spicer® 1810 universal joints.	X	
The shafts shall be dynamically balanced before installation.	X	
A splined slip joint shall be provided in each driveshaft where the driveline design requires it. The slip joint shall be coated with Glidecoat® or equivalent.	X	
STEERING Dual Sheppard, Model M110, steering gears, with integral heavy-duty power steering, shall be provided. For reduced system temperatures, the power steering shall	X	

	Meets Request	
	Yes	No
incorporate an air to oil cooler and an Eaton, Model VN20, hydraulic pump with integral pressure and flow control. All power steering lines shall have wire braded lines with crimped fittings.	X	
A tilt and telescopic steering column shall be provided to improve fit for a broader range of driver configurations.	X	
STEERING WHEEL The steering wheel shall be 18.00" in diameter, have tilting and telescoping capabilities, and a 2-spoke design.	X	
LOGO AND CUSTOMER DESIGNATION ON HORN BUTTON The steering wheel shall have an emblem containing the fire apparatus manufacturer's logo and customer name. The emblem shall have 3 rows of text for the customer's department name. There shall be a maximum of 8 characters in the first row, 11 characters in the second row and 11 characters in the third row.	X	
The first row of text shall be: Long		
The second row of text shall be: Beach		
The third row of text shall be: Fire Dept.		
AUTOMATIC CHASSIS LUBRICATION A Vogel Automatic Lubrication System shall be provided. The lubrication shall be supplied while the vehicle ignition switch is active to allow a uniform application of grease to the locations listed. The electronic control unit that forms part of the system shall activate the pump after an adjustable interval time. The unit shall control and monitor pump operation and report any faults via an indicator light on the driver's dashboard of the cab.	X	
The lubrication system reservoir, which requires a 15.00" wide x 14.50" high x 6.25" deep mounting area, shall be located to be determined at preconstruction on the apparatus. - Independent Suspension Control Arm Pivot Points - Rear Axle Slack Adjusters - Rear Axle Brake Cam Screws - Rear Suspension Spring Pins - Rear Suspension Shackle Pins - Walking Beam Pins Tandem axle, if applicable	X	
BUMPER A 1 piece, 10 gauge, 304-2B type polished stainless-steel bumper, minimum of 10.00" high, shall be attached to a bolted modular extension frame constructed of 50,000 psi	X	

	Meets Request	
	Yes	No
tensile steel "C" channel mounted directly behind it to provide adequate support strength. The bumper shall be extended 13.00" from front face of cab.	X	
Gravel Pan A gravel pan, constructed of bright aluminum treadplate, shall be furnished between the bumper and cab face. The gravel pan shall be properly supported from the underside to prevent flexing and vibration of the aluminum treadplate.	X	
LIFT AND TOW MOUNTS 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.	X	
The lift and tow mounts with eyes shall be painted the same color as the frame.	X	
TOW EYES 2 chrome tow eyes shall be mounted through the front face of the bumper.	X	
The inner and outer edges of the tow eyes shall have a .25" radius.	X	
Tow eyes shall be mounted directly to the bumper frame.	X	
Cutouts shall be provided in the front face of bumper to allow tow eyes to extend out the front.		
The tow eyes shall be designed and positioned to allow up to a 9,000 lb. straight horizontal pull in line with the centerline of the vehicle.	X	
The tow eyes shall not be used for lifting of the apparatus.	X	
PORTABLE WINCH RECEIVERS 2 portable winch receivers shall be installed under the front bumper extension of the apparatus. Receivers shall be one each side, in line with frame rail. The winch receiver shall be constructed of heavy steel tubing, reinforced to the bumper extension framework for the receiving portion. The winch receivers shall each be rated for 9,000 pounds.	X	
12 VDC power shall be provided between the 2 receivers.	X	
FRONT BUMPER NOTCH The front bumper shall be notched for recessing of the Q2B siren. The notch shall be designed so that the bumper is 1 continuous piece. The notch shall be welded in place for strength with a continuous top and bottom flange. All areas shall be polished for appearance. The siren shall be located on the left side of the bumper.	X	

	Meets Request	
	Yes	No
CAB The cab shall be designed specifically for the fire service and manufactured by the chassis builder.	X	
The cab shall be built by the apparatus manufacturer in a facility located on the manufacturer's premises (no exception).	X	
For reasons of structural integrity and enhanced occupant protection, the cab shall be a heavy-duty design, constructed to the following minimal standards.	X	
The cab shall have 12 main vertical structural members located in the A-pillar (front cab corner posts), B-pillar (side center posts), C-pillar (rear corner posts), and rear wall areas. The A-pillar shall be constructed of solid A356-T5 aluminum castings. The B-pillar and C-pillar shall be constructed from 0.13" wall extrusions. The rear wall shall be constructed of 2, 2.00" x 2.00" outer aluminum extrusions and 2, 2.00" x 1.00" inner aluminum extrusions. All main vertical structural members shall run from the floor to 4.625" x 3.864" x 0.090" thick roof extrusions to provide a cage-like structure with the A-pillar and roof extrusions being welded into a 0.25" thick corner casting at each of the front corners of the roof assembly.	X	
The front of the cab shall be constructed of a 0.13" firewall plate, covered with a 0.090" front skin (for a total thickness of 0.22"), and reinforced with a full width x 0.50" thick cross-cab support located just below the windshield and fully welded to the engine tunnel. The cross-cab support shall run the full width of the cab and weld to each A-pillar, the 0.13" firewall plate, and the front skin.	X	
The cab floors shall be constructed of 0.125" thick aluminum plate and reinforced at the firewall with an additional 0.25" thick cross-floor support providing a total thickness of 0.375" of structural material at the front floor area. The front floor area shall also be supported with 2 triangular 0.30" wall extrusions that also provides the mounting point for the cab lift. This tubing shall run from the floor wireway of the cab to the engine tunnel side plates, creating the structure to support the forces created when lifting the cab.	X	
The cab shall be 96.00" wide (outside door skin to outside door skin) to maintain maximum maneuverability (no exception).	X	
The overall height (from the cab roof to the ground) of approximately 99.00". The overall height listed shall be calculated based on a truck configuration with the lowest suspension weight rating, the smallest diameter tires for the suspension, no water	X	

	Meets Request	
	Yes	No
weight, no loose equipment weight, and no personnel weight. Larger tires, wheels, and suspension shall increase the overall height listed.		
The floor to ceiling height inside the crew cab shall be 54.50" in the center and outboard positions.	X	
The crew cab floor shall measure 46.00" from the rear wall to the back side of the rear facing seat risers.	X	
The medium block engine tunnel, at the rearward highest point (knee level), shall measure 61.50" to the rear wall. The big block engine tunnel shall measure 51.50" to the rear wall.	X	
The crew cab shall be a totally enclosed design with the interior area completely open to improve visibility and verbal communication between the occupants.	X	
The cab shall be a full tilt cab style.	X	
A 3-point cab mount system with rubber isolators shall improve ride quality by isolating chassis vibrations from the cab.	X	
CAB ROOF DRIP RAIL For enhanced protection from inclement weather, a drip rail shall be furnished on the sides of the cab. The drip rail shall be painted to match the cab roof and bonded to the sides of the cab. The drip rail shall extend the full length of the cab roof.	X	
INTERIOR CAB INSULATION The cab shall include 1.00" insulation in the ceiling, 1.50" insulation in the side walls, and 2.00" insulation in the rear wall to maximize acoustic absorption and thermal insulation.	X	
FENDER LINERS Full circular inner fender liners in the wheel wells shall be provided.	X	
PANORAMIC WINDSHIELD A 1-piece safety glass windshield shall be provided with over 2,775 square inches of clear viewing area. The windshield shall be full width and shall provide the occupants with a panoramic view. The windshield shall consist of 3 layers: outer light, middle safety laminate, and inner light. The outer light layer shall provide superior chip resistance. The middle safety laminate layer shall prevent the windshield glass pieces from detaching in the event of breakage. The inner light shall provide yet another chip resistant layer. The cab windshield shall be bonded to the aluminum windshield frame	X	

	Meets Request	
	Yes	No
using a urethane adhesive. A custom frit pattern shall be applied on the outside perimeter of the windshield for a finished automotive appearance.		
WINDSHIELD WIPERS 3 electric windshield wipers with washer shall be provided that meet FMVSS and SAE requirements.	X	
The washer reservoir shall be able to be filled without raising the cab.	X	
ENGINE TUNNEL Engine hood side walls shall be constructed of 0.375" aluminum. The top shall be constructed of 0.125" aluminum and shall be tapered at the top to allow for more driver and passenger elbow room.	X	
The engine hood shall be insulated for protection from heat and sound. The noise insulation keeps the dBA level within the limits stated in the current NFPA 1901 standards.	X	
The engine tunnel shall be no higher than 17.00" off the crew cab floor	X	
CAB REAR WALL EXTERIOR COVERING The exterior surface of the rear wall of the cab shall be painted two-tone to match the sides of the cab.	X	
CAB LIFT A hydraulic cab lift system shall be provided consisting of an electric powered hydraulic pump, dual lift cylinders, and necessary hoses and valves.	X	
Hydraulic pump shall have a manual override for backup in the event of electrical failure.	X	
Lift controls shall be located in the driver side stepwell.	X	
The cab shall be capable of tilting 43 degrees to accommodate engine maintenance and removal.	X	
The cab shall be locked down by a 2-point normally closed spring-loaded hook type latch that fully engages after the cab has been lowered. The system shall be hydraulically actuated to release the normally closed locks when the cab lift control is in the raised position and cab lift system is under pressure. When the cab is completely lowered and system pressure has been relieved, the spring-loaded latch mechanisms shall return to the normally closed and locked position.	X	

	Meets Request	
	Yes	No
The hydraulic cylinders shall be equipped with a velocity fuse that protects the cab from accidentally descending when the control is located in the tilt position.	X	
For increased safety, a redundant mechanical stay arm shall be provided that must be manually put in place on the left side between the chassis and cab frame when the cab is in the raised position. This device shall be manually stowed to its original position before the cab can be lowered.	X	
Cab Lift Interlock The cab lift system shall be interlocked to the parking brake. The cab tilt mechanism shall be active only when the parking brake is set, and the ignition switch is in the on position. If the parking brake is released, the cab tilt mechanism shall be disabled.	X	
GRILLE A bright finished aluminum mesh grille screen, inserted behind a grille surround, shall be provided on the front center of the cab. The grille surround shall be painted black #101.	X	
MIRRORS A Retrac Aerodynamic, Model 613295, dual vision, motorized, west coast style mirror with chrome finish shall be mounted on each side of the front cab door with spring loaded retractable arms. The flat glass and convex glass shall be adjustable with a remote control within reach of the driver.	X	
DOORS To enhance entry and egress to the cab, the forward cab door openings shall be a minimum of 37.50" wide x 63.37" high. The crew cab doors shall be located on the sides of the cab and shall be constructed in the same manner as the forward cab doors. The crew cab door openings shall be a minimum of 34.30" wide x 63.37" high.	X	
The forward cab and crew cab doors shall be constructed of extruded aluminum with a nominal material thickness of 0.093". The exterior door skins shall be constructed from 0.090" aluminum.	X	
A customized, vertical, pull-down type door handle shall be provided on the exterior of each cab door. The finish of the door handle shall be chrome/black. The exterior handle shall be designed specifically for the fire service to prevent accidental activation and shall provide 4.00" wide x 2.00" deep hand clearance for ease of use with heavy gloved hands.	X	
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	X	

	Meets Request	
	Yes	No
accidental activation. The interior handles shall provide 4.00" wide x 1.25" deep hand clearance for ease of use with heavy gloved hands.		
The cab doors shall be provided with both interior (rotary knob) and exterior (keyed) locks exceeding FMVSS standards. The keys shall be Model 751. The locks shall be capable of activating when the doors are open or closed. The doors shall remain locked if locks are activated when the doors are opened, then closed.	X	
A full length, heavy duty, stainless steel, piano-type hinge with a 0.38" pin and 11-gauge leaf shall be provided on all cab doors. There shall be double automotive-type rubber seals around the perimeter of the door framing and door edges to ensure a weather-tight fit.	X	
A chrome handle shall be provided on the inside of each cab door for ease of entry.	X	
A red webbed grab handle shall be installed on the crew cab door stop strap. The grab handles shall be securely mounted.	X	
The bottom cab step at each cab door location shall be located below the cab doors and shall be exposed to the exterior of the cab.	X	
Door Panels The inner cab door panels shall be constructed out of brushed stainless steel. The door panels shall be designed and installed in 2 pieces. The cab door panels shall be removable without disconnecting door and window mechanisms.	X	
ELECTRIC OPERATED CAB DOOR WINDOWS All 4 cab doors shall be equipped with electric operated windows with flush mounted automotive style switches.	X	
The driver's side lower instrument panel shall also have 3 controls, officer's door window and both crew cab door windows.	X	
CAB STEPS A dual step shall be provided below each cab and crew cab door. The steps shall be designed with a grip pattern punched into bright aluminum treadplate material providing support, slip resistance, and drainage. The steps shall be a bolt-in design to minimize repair costs should they need to be replaced. The forward cab steps shall be a minimum 25.00" wide, and the crew cab steps shall be 21.50" wide with a 7.00" minimum depth. The step design raises the middle step higher and closer to the cab floor, resulting in a 11.50" distance from the step to cab floor in the cab and a 10.25" distance from the step to cab floor in the crew cab. Stepping distances from the ground	X	

	Meets Request	
	Yes	No
to first step shall be approximately 14.00" and from first step to middle step shall be approximately 12.00".		
The vertical surface of the upper step well shall be aluminum treadplate.	X	
The first step shall be lit by a white 12-volt DC LED light provided on the step.	X	
CAB EXTERIOR HANDRAILS A 1.25" diameter slip-resistant, knurled aluminum handrail shall be provided adjacent to each cab and crew cab door opening to assist during cab ingress and egress.	X	
STEP LIGHTS There shall be 6 white LED step lights with chrome housing installed for cab and crew cab access steps. • 1 light for the left access steps. • 2 lights for the left side crew cab access steps. • 2 lights for the right-side crew cab access steps. • 1 light for the right-side access step.	X	
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 10 inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same 10-inch distance below the light.	X	
The lights shall be activated when the battery switch is on, and the adjacent door is opened.	X	
FENDER CROWNS Stainless steel fender crowns shall be installed at the cab wheel openings.	X	
GRAB HANDLE(S) There shall be 4 black offset rubber covered grab handle(s) mounted to be determined at pre-construction to assist in entering the cab and/or crew cab. The grab handle(s) shall be securely mounted.	X	
BEHIND RIGHT SIDE CAB DOOR WINDOW TINT The window behind the right-side front cab door shall be tinted privacy dark gray.	X	
RIGHT SIDE ROLLUP CREW CAB DOOR WINDOW TINT The rollup window in the right-side crew cab door shall be tinted privacy dark gray.	X	

	Meets Request	
	Yes	No
LEFT SIDE ROLLUP CREW CAB DOOR WINDOW TINT The rollup window in the left side crew cab door shall be tinted privacy dark gray.	X	
STORAGE COMPARTMENT Provided under the forward-facing crew cab seats shall be a transverse compartment. The compartment shall be divided into upper and lower sections by a removable divider located at the cab floor. The upper section shall be 13.75" wide x 9.00" high x full width (transverse) of the crew cab. The lower section shall be 15.00" wide x 24.50" high x 15.00" deep on both sides. The compartment shall extend from the bottom of the cab to top of the seat riser.	X	
There shall be 2 double pan doors painted to match the cab exterior with a locking D-Ring latch with #751 key, 1 on each side of the cab with a web strap for each exterior door provided as a door stop. The clear door opening of each compartment door shall be 10.25" wide x 32.00" high.	X	
The exterior access shall be provided with a brushed stainless steel scuffplate on the lower door frame.	X	
There shall be 1 drop down door, painted to match the cab interior with 2 non-locking flush pull latches with no louvers on the forward face of the seat riser.	X	
The compartment interior shall be painted spatter gray.	X	
Compartment Light There shall be 4 white LED strip lights, 1 horizontally mounted in each lower and upper exterior compartment. The lights shall be controlled by an automatic door switch.	X	
CAB ROOF COVERING The horizontal surface of the cab roof shall be sprayed with UL-LX® polyurethane/polyurea elastomer abrasive resistant material. There shall be an area on the rear crew cab roof that shall be 42.00" from side to side and 20.00" front to back left painted job color for lettering.	X	
The UL-LX abrasive resistant material shall be dark gray.	X	
2 strips of aluminum treadplate, 16.00" wide, shall be installed on each side of the cab and crew cab. The covering shall extend from the rear edge of the crew cab to just behind the lightbar. Edges and fastening screws shall be properly caulked to prevent water from leaking under aluminum. Side warning lights shall not be mounted on top of treadplate.	X	

	Meets Request	
	Yes	No
CAB INSULATION The underside of the crew cab floor shall be perforated foil faced insulation shall be over a closed cell foam affixed with pressure sensitive adhesive and further secured with mechanical fasteners to maximize acoustic absorption and thermal insulation.	X	
ACCESS DOORS There shall be 2 double pan doors painted to match the cab exterior with a locking, black finish D-Ring latch with #751 key, 1 on each side of the cab, provided over the front wheel well. A web strap for each exterior door shall be provided as a door stop. The clear door opening shall be 17.00" wide x 23.50" high.	X	
STORAGE COMPARTMENT ON CAB ROOF A storage compartment shall be provided on the crew cab roof. The compartment shall be located to the rear of the cab roof and centered side to side.	X	
The compartment shall be approximately 60.00" wide x 48.00" deep x 10.00" high with a top opening door. Door shall have a hinge on the front side and shall be held open with gas cylinder strut. The door shall lap the compartment sides and latch with 2 butterfly latches at the rear.	X	
The compartment and door shall be constructed of aluminum treadplate.	X	
The compartment shall be bolted to the cab roof with .25" spacers to allow air flow between the compartment and cab roof.	X	
WEDGE FOOTREST A wedge footrest shall be provided in each rear facing seat riser in place of the rear facing heaters. They shall be constructed of bright aluminum treadplate. Each footrest shall be removable.	X	
CAB DASH The driver side dash, switch panel located to the right of the driver, and center console shall be constructed of aluminum and painted fire smoke gray.	X	
The officer side dash shall be a flat top design with an upper beveled edge to provide easy maintenance and shall be constructed out of aluminum and painted to match the cab interior.	X	
The instrument gauge cluster shall be surrounded with a high impact ABS plastic contoured to the same shape of the instrument gauge cluster.	X	
MOUNTING PLATE ON ENGINE TUNNEL Equipment installation provisions shall be installed on the engine tunnel.	X	

	Meets Request	
	Yes	No
A .25" smooth aluminum plate shall be bolted to the top surface of the engine tunnel. The plate shall follow the contour of the engine tunnel and shall run the entire length of the engine tunnel. The plate shall be spaced off the engine tunnel .50" to allow for wire routing below the plate.	X	
The mounting surface shall be painted to match the cab interior.	X	
CAB INTERIOR The cab interior shall be constructed of primarily metal (painted aluminum) to withstand the severe duty cycles of the fire service.	X	
The engine tunnel shall be padded and covered, on the top and sides, with dark silver gray 36-ounce leather grain vinyl resistant to oil, grease, and mildew.	X	
For durability and ease of maintenance, the cab interior side walls shall be painted aluminum. The rear wall shall be painted aluminum.	X	
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.	X	
Forward portion of cab headliner shall permit easy access for service of electrical wiring or other maintenance needs.	X	
All wiring shall be placed in metal raceways. Routing through holes in tubing shall not be accepted due to chaffing that installation shall cause.	X	
CAB INTERIOR UPHOLSTERY The cab interior upholstery shall be 36 oz dark silver gray vinyl.	X	
CAB INTERIOR PAINT The cab interior metal surfaces, excluding the rear heater panels, shall be painted fire smoke gray, vinyl texture paint.	X	
The rear heater panels shall be painted black, vinyl textured paint.	X	
CAB FLOOR 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.	X	
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 0.25" thick closed	X	

	Meets Request	
	Yes	No
cell foam (no water absorption) which offers a sound dampening material for reducing sound levels.		
The rubber floor material shall have aluminum treadplate overlay. The aluminum treadplate floor shall entirely cover the rubber floor material.	X	
The vertical surface of the upper step wells in the crew cab shall also be covered with floor mat overlaid with aluminum treadplate.	X	
DEFROST/AIR CONDITIONING SYSTEM A ceiling mounted combination heater, defroster and air conditioning system shall be installed in the cab above the engine tunnel area.	X	
Cab Defroster A 54,000 BTU heater-defroster unit with 690 SCFM of air flow shall be provided inside the cab. The heater-defrost shall be installed in the forward portion of the cab ceiling. Air outlets shall be strategically located in the cab header extrusion per the following:	X	
• 1 adjustable shall be directed towards the left side cab window • 1 adjustable shall be directed towards the right-side cab window • 6 fixed outlets shall be directed at the windshield	X	
The defroster shall be capable of clearing 98 percent of the windshield and side glass when tested under conditions where the cab has been cold soaked at 0 degrees Fahrenheit for 10 hours, and a 2 ounce per square inch layer of frost/ice has been able to build up on the exterior windshield. The defroster system shall meet or exceed SAE J382 requirements.	X	
Cab/Crew Auxiliary Heater There shall be no auxiliary heater provided in the rear facing seat risers.	X	
Air Conditioning A condenser shall be a minimum 59,644 BTU output that meets and exceeds the performance specification shall be mounted on the radiator. Mounting the condenser below the cab or body would reduce the performance of the system and shall not be acceptable.	X	
The air conditioning system shall be capable of cooling the average cab temperature from 100 degrees Fahrenheit to 75 degrees Fahrenheit at 50 percent relative humidity within 30 minutes. The cooling performance test shall be run only after the cab has been heat soaked at 100 degrees Fahrenheit for a minimum of 4 hours.	X	

	Meets Request	
	Yes	No
The evaporator unit shall be installed in the rear portion of the cab ceiling over the engine tunnel. The evaporator shall include 1 high performance heating core, 1 high performance cooling core with 1 plenum directed to the front and one 1 plenum directed to the rear of the cab. The rear plenum shall be covered with a formed plastic cover.	X	
The evaporator unit shall have a 52,000 BTU at 690 SCFM rating that meets and exceeds the performance specifications.	X	
Adjustable air outlets shall be strategically located on the forward plenum cover per the following: • 4 shall be directed towards the seating position on the left side of the cab • 4 shall be directed towards the seating position on the right side of the cab	X	
Adjustable air outlets shall be strategically located on the rear plenum cover per the following: • Minimum of 5 shall be directed towards crew cab area	X	
A high efficiency particulate air (HEPA) filter shall be included for the system. Access to the filter cover shall be secured with 4 screws.	X	
The air conditioner refrigerant shall be R-134A and shall be installed by a certified technician.	X	
Climate Control An automotive style controller shall be provided to control the heat and air conditioning system within the cab. The controller shall have 3 functional knobs for fan speed, temperature, and air flow distribution (front to rear) control.	X	
The system shall control the temperature of the cab and crew cab automatically by pushing the center of the fan speed control knob. Rotate the center temperature control knob to set the cab and crew cab temperature.	X	
The AC system shall be manually activated by pushing the center of the temperature control knob. Pushing the center of the air flow distribution knob shall engage the AC for max defrost, setting the fan speeds to 100 percent and directing all air flow to the overhead forward position.	X	
The system controller shall be located within panel position #12.	X	

	Meets Request	
	Yes	No
Gravity Drain Tubes 2 condensate drain tubes shall be provided for the air conditioning evaporator. The drip pan shall have 2 drain tubes plumbed separately to allow for the condensate to exit the drip pan. No pumps shall be provided.	X	
SUN VISORS There shall be 2 vinyl covered sun visors provided. The sun visors shall be located above the windshield with 1 mounted on each side of the cab.	X	
There shall be a black plastic thumb latch provided to help secure each sun visor in the stowed position.	X	
GRAB HANDLES A black rubber covered grab handle shall be mounted on the door post of the driver and officer's side cab door to assist in entering the cab. The grab handles shall be securely mounted to the post area between the door and windshield.	X	
ENGINE COMPARTMENT LIGHTS There shall be 1 Whelen, Model 3SC0CDCR, 12-volt DC, 3.00" white LED light(s) with Whelen, Model 3FLANGEC, chrome flange kit(s) installed under the cab to be used as engine compartment illumination.	X	
These light(s) shall be activated automatically when the cab is raised.	X	
ACCESS TO ENGINE DIPSTICKS For access to the engine oil and transmission fluid dipsticks, there shall be a door on the engine tunnel, inside the crew cab. The door shall be on the rear wall of the engine tunnel, on the vertical surface.	X	
The engine oil dipstick shall allow for checking only. The transmission dipstick shall allow for both checking and filling.	X	
The door shall have a rubber seal for thermal and acoustic insulation. 1 flush lift and turn latch shall be provided on the access door.	X	
MAP POCKET Installed on each front door shall be a map pocket. The pocket shall be 14.00" wide x 13.50" high x 1.50" deep and constructed of stainless steel. The inside sheet shall have half-moon cutouts.	X	
SEATING CAPACITY The seating capacity in the cab shall be 6.	X	

	Meets Request	
	Yes	No
DRIVER SEAT A USSC Valor air suspension R-back seat shall be provided in the cab for the driver. For increased convenience, the seat shall include a manual control to adjust the horizontal position. To provide flexibility for multiple driver configurations, the seat shall have a reclining back, adjustable from 15 degrees back to 45 degrees forward.	X	
The seat shall be furnished with a 3-point, shoulder type seat belt.	X	
There shall be no additional contaminant mitigation vinyl covers shipped loose with the seat.	X	
OFFICER SEAT A USSC, P1A, SCBA air suspension seat shall be provided in the cab for the officer. For optimal comfort, the seat shall be provided with 17.00" deep cushion. For increased convenience, the seat shall include a manual control to adjust the height (3.00" travel) and horizontal position (4.25" travel).	X	
The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 0.75" 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.	X	
The seat shall be furnished with a 3-point, shoulder type seat belt.	X	
Shipped loose with the seat shall be no additional contaminant mitigation vinyl covers.	X	
REAR FACING DRIVER SIDE OUTBOARD SEAT There shall be 1 rear facing, USSC Valor SCBA seat provided at the driver side outboard position in the crew cab. For optimal comfort, the seat shall be provided with a 15.00" deep cushion.	X	
The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 0.75" 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.	X	
The seat shall be furnished with a 3-point, shoulder type seat belt.	X	
There shall be no additional contaminant mitigation vinyl covers shipped loose with the seat.	X	

	Meets Request	
	Yes	No
REAR FACING PASSENGER SIDE OUTBOARD SEAT There shall be 1 rear facing, USSC Valor seat provided at the passenger side outboard position in the crew cab. For optimal comfort, the seat shall be provided with a 15.00" deep cushion.	X	
The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 0.75" 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.	X	
The seat shall be furnished with a 3-point, shoulder type seat belt.	X	
There shall be no additional contaminant mitigation vinyl covers shipped loose with the seat.	X	
FORWARD FACING DRIVER SIDE OUTBOARD SEAT There shall be 1 forward facing, USSC Valor R-back foldup seat provided at the driver side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 17.00" deep cushion and an adjustable recline back. To ensure safe operation, the seat shall be equipped with a sensor in the seat cushion and belt receptacle that shall activate an alarm indicating the seat is occupied but not buckled.	X	
The seat shall be furnished with a 3-point, shoulder type seat belt.	X	
There shall be no additional contaminant mitigation vinyl covers shipped loose with the seat.	X	
FORWARD FACING CENTER CABINET A forward-facing cabinet shall be provided in the crew cab at the center position. The cabinet shall be mounted flush to the ceiling and shall include the angled wireway. The front corners of the cabinet shall be chamfered.	X	
The cabinet shall be 34.00" wide x 20.00" high x 8.00" deep. There shall be a drop in door panel. A lip shall be provided at the lower opening that will secure the base of the panel and 2 Southco push button latches shall secure the top.	X	
A removable aluminum mounting plate shall be provided on the rear wall of the cabinet. The plate shall be mounted vertically on .50" spacer stand-offs and be painted to match the cab interior.	X	
The floor of the cabinet shall include ventilation knockouts.	X	
The cabinet and panel shall be constructed of aluminum treadplate.	X	

	Meets Request	
	Yes	No
Cabinet Light There shall be 1 white LED strip light installed on the right side of the interior cabinet door opening and 1 white LED strip light installed on the left side of the interior cabinet door opening. The lighting shall be controlled by a rocker switch on exterior of the cabinet.	X	
FORWARD FACING PASSENGER SIDE OUTBOARD SEAT There shall be 1 forward facing, USSC, foldup high back seat provided in the passenger side outboard position in the crew cab. The seat back shall be a R-back style with an adjustable recline angle. For optimal comfort, the seat shall be provided with 17.00" deep cushion. To ensure safe operation, the seat shall be equipped with a sensor in the seat cushion and belt receptacle that shall activate an alarm indicating the seat is occupied but not buckled.	X	
The seat shall be furnished with a 3-point, shoulder type seat belt.		
There shall be no additional contaminant mitigation vinyl covers shipped loose with the seat.		
REAR FACING CENTER CABINET A rear-facing cabinet shall be provided on the top rear of the engine tunnel. The rear of the cabinet shall be angled to match the engine tunnel.	X	
The cabinet shall be 34.00" wide x 10.00" high x 14.00" deep with 1 liftup door painted to match the cab interior with 2 non-locking lever latches. The door shall include 2 pneumatic stay arms to hold the door in the open position. The door opening shall be provided on the front of the cabinet, facing the crew cab. The clear door opening of the cabinet shall be 32.25" wide x 11.00" high.	X	
The cabinet shall include no adjustable shelves or trays in the cabinet interior.	X	
The cabinet shall include no louvers.	X	
The cabinet shall be constructed of smooth aluminum and painted to match the cab interior.	X	
Cabinet Light There shall be 1 white LED strip light installed horizontally above the interior cabinet door opening. The lighting shall be controlled by an automatic door switch.	X	

	Meets Request	
	Yes	No
SEAT UPHOLSTERY All seat upholstery shall be leather grain gray vinyl resistant to oil, grease, and mildew. The cab shall have 6 seating positions.	X	
AIR BOTTLE HOLDERS All SCBA type seats in the cab shall have a "Hands-Free" auto clamp style bracket in its backrest. For efficiency and convenience, the bracket shall include an automatic spring clamp that allows the occupant to store the SCBA bottle by simply pushing it into the seat back. For protection of all occupants in the cab, in the event of an accident, the inertial components within the clamp shall constrain the SCBA bottle in the seat and shall exceed the NFPA standard of 9G. Bracket designs with manual restraints (belts, straps, buckles) that could be inadvertently left unlocked and allow the SCBA to move freely within the cab during an accident, shall not be acceptable.	X	
There shall be a quantity of 3 SCBA brackets.	X	
SEAT EMBROIDERY The seats in the cab and crew cab, including flip up seat backs, shall be provided with custom embroidery. The Fire Department shall determine what the embroidery shall be by providing pictures at the time of order.	X	
The custom logo shall be provided in place of the standard OEM logo. Flip up seat backs the logo shall be provided on the center of the seat back.	X	
The embroidery shall be provided on 6 seats.	X	
SEAT BELTS All cab seating positions shall have red seat belts. To provide quick, easy use for occupants wearing bunker gear, the female buckle, and seat belt webbing length shall meet or exceed the current edition of NFPA 1901 and CAN/ULC - S515 standards.	X	
The 3-point shoulder type seat belts shall include height adjustment. This adjustment shall optimize the belts effectiveness and comfort for the seated firefighter. The 3-point shoulder type seat belts shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.	X	
The 3-point shoulder type belts shall also include the ReadyReach D-loop assembly to the shoulder belt system. The ReadyReach feature adds an extender arm to the D-loop location placing the D-loop in a closer, easier to reach location.	X	
Flip up seats shall include a 3-point shoulder type belts only.	X	

	Meets Request	
	Yes	No
To ensure safe operation, the seats shall be equipped with seat belt sensors in the seat cushion and belt receptacle that shall activate an alarm indicating a seat is occupied but not buckled.	X	
HELMET BRACKET There shall be 2 helmet bracket(s) provided in the cab. Each bracket is capable of storing 2 Phenix First Due Series 1500 style helmets. The base dimensions shall be 13.00" x 22.00". The bracket(s) shall be painted black and located to be mounted at final.	X	
CAB DOME LIGHTS There shall be 4 Weldon 808* series, dual LED dome lights with black bezels provided. 2 lights shall be mounted above the inside shoulder of the driver and officer and 2 lights shall be installed and located, 1 on each side of the crew cab.	X	
The color of the LED's shall be red and white.	X	
The white LED's shall be controlled by the door switches and the lens switch.	X	
The color LED's shall be controlled by the lens switch.	X	
ENHANCED SOFTWARE FOR CAB AND CREW CAB DOME LIGHTS The cab and crew cab dome lights shall remain on for zero seconds for improved visibility after the doors are closed or immediately if the vehicle's transmission is put into gear.	X	
ADDITIONAL OVERHEAD MAP LIGHT There shall be 1 additional rectangular based adjustable map light(s) with white LED's installed in the cab and mounted to the headliner above the Captain. Each light shall include a switch on the light housing.	X	
The light switch(es) shall be connected directly to the battery power.	X	
CAB SPOTLIGHT There shall be 2 Golight® Stryker ST™, Model 30**4ST, white LED spotlights located on the cab roof, mounted outside the forward lightbar. The spotlights shall be mounted to the surface of the cab roof.	X	
These lights may be load managed when the parking brake is applied.	X	
SPOTLIGHT CONTROLLER There shall be 1 wired dash mounted remote provided for each spotlight.	X	

	Meets Request	
	Yes	No
Spotlight Controller Locations The remotes to control the spotlights shall be located 1 within reach of the driver and 1 within reach of the officer.	X	
PORTABLE HAND LIGHTS, PROVIDED BY FIRE DEPARTMENT NFPA 1901, 2016 edition, section 5.9.4 requires two portable hand lights mounted in brackets fastened to the apparatus.	X	
The hand lights are not on the apparatus as manufactured. The fire department shall provide and mount these hand lights.	X	
CAB INSTRUMENTATION The cab instrument panel shall include gauges, an LCD display, 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.	X	
Gauges The gauge panel shall include the following 10 ivory faced gauges with chrome bezels to monitor vehicle performance: • Voltmeter gauge (volts): o Low volts (11.8 VDC) ▪ Amber caution indicator on the information center with intermittent alarm ▪ Amber caution light on gauge assembly o High volts (15.5 VDC) ▪ Amber caution indicator on the information center with intermittent alarm ▪ Amber caution light on gauge assembly o Very low volts (11.3 VDC) ▪ Red warning indicator on the information center with a steady alarm ▪ Amber caution light on gauge assembly o Very high volts (16.0 VDC) ▪ Red warning indicator on the information center with a steady alarm ▪ Amber caution light on gauge assembly	X	

	Meets Request	
	Yes	No

• Engine Tachometer (RPM)
• Speedometer MPH (Major Scale), KM/H (Minor Scale)
• Fuel level gauge (Empty - Full in fractions):
  o Low fuel (1/8 full)
  ▪ Amber caution indicator on the information center with intermittent alarm
  ▪ Amber caution light on gauge assembly
  o Very low fuel (1/32 full)
  ▪ Red caution indicator on the information center with steady alarm
  ▪ Amber caution light on gauge assembly
• Engine Oil pressure Gauge (PSI):
  o Low oil pressure to activate engine warning lights and alarms
  ▪ Red caution indicator on the information center with steady alarm
  ▪ Amber caution light on gauge assembly
• Front Air Pressure Gauges (PSI):
  o Low air pressure to activate warning lights and alarm
  ▪ Red warning indicator on the information center with a steady alarm
  ▪ Amber caution light on gauge assembly
• Rear Air Pressure Gauges (PSI):
  o Low air pressure to activate warning lights and alarm
  ▪ Red warning indicator on the information center with a steady alarm
  ▪ Amber caution light on gauge assembly
• Transmission Oil Temperature Gauge (Fahrenheit):
  o High transmission oil temperature activates warning lights and alarm
  ▪ Amber caution indicator on the information center with intermittent alarm
  ▪ Amber caution light on gauge assembly
• Engine Coolant Temperature Gauge (Fahrenheit):
  o High engine temperature activates an engine warning light and alarms
  ▪ Amber caution indicator on the information center with intermittent alarm
  ▪ Amber caution light on gauge assembly
• Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions):
  o Low fluid (1/8 full)
  ▪ Amber indicator light in gauge dial		

All gauges shall perform prove out at initial power-up to ensure proper performance.	X	

	Meets Request	
	Yes	No
Indicator Lamps To promote safety, the following telltale indicator lamps shall be located on the instrument panel in clear view of the driver. The indicator lamps shall be "dead-front" design that is only visible when active. The colored indicator lights shall have descriptive text or symbols.	X	
The following amber telltale lamps shall be present: • 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) • Side roll fault (where applicable) • Front air bag fault (where applicable)	X	
The following red telltale lamps shall be present: • Warning (stop sign symbol) • Seat belt • Parking brake • Stop engine • Rack down	X	
The following green telltale lamps shall be provided: • Left turn • Right turn • Battery on	X	
The following blue telltale lamp shall be provided:	X	

	Meets Request	
	Yes	No
• High beam		
Alarms Audible steady tone warning alarm: A steady audible tone alarm shall be provided whenever a warning message is present.	X	
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.	X	
Alarm silence: Any active audible alarm shall be able to be silenced by holding the ignition switch at the top position for 3 to 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.	X	
Indicator Lamp and Alarm Prove-Out A system shall be provided which automatically tests telltale indicator lights and alarms located on the cab instrument panel. Telltale indicators and alarms shall perform prove-out at initial power-up to ensure proper performance.	X	
Control Switches 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.	X	
Headlight/Parking light switch: A 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.	X	
Panel back lighting intensity control switch: A 3-position momentary rocker switch shall be provided. Pressing the top half of the switch, "Panel Up" increases the panel back lighting intensity and pressing the bottom half of the switch, "Panel Down" decreases the panel back lighting intensity. Pressing the half or bottom half of the switch several times shall allow back lighting intensity to be gradually varied from minimum to maximum intensity level for ease of use.	X	
Ignition switch: A 3-position maintained/momentary rocker switch shall be provided. The first switch position shall turn off and deactivate vehicle ignition. The second switch position shall activate vehicle ignition and shall perform prove-out on the telltale indicators and alarms for 3 to 5 seconds after the switch is turned on. A green indicator	X	

	Meets Request	
	Yes	No
lamp is activated with vehicle ignition. The third momentary position shall temporarily silence all active cab alarms. An alarm "chirp" may continue as long as alarm condition exists. Switching ignition to off position shall terminate the alarm silence feature and reset function of cab alarm system.		
Engine start switch: A 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.	X	
Hazard switch shall be provided on the instrument panel or on the steering column.	X	
Heater, defroster, and air conditioning control panel.	X	
Windshield wiper control shall include low, high, and intermittent modes.	X	
Turn signal arm: A self-canceling turn signal with high beam headlight shall be provided.	X	
Parking brake control: An air actuated push/pull park brake control valve shall be provided.	X	
Chassis horn control: Activation of the chassis horn control shall be provided through the center of the steering wheel.	X	
High idle engagement switch: A momentary 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.	X	
"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.	X	
Emergency switching shall be controlled by multiple individual warning light switches for various groups or areas of emergency warning lights. An Emergency Master switch provided on the instrument panel that enables or disables all individual warning light switches is included.	X	
An additional "Emergency Master" button shall be provided on the lower left-hand corner of the gauge panel to allow convenient control of the "Emergency Master" system from inside the driver's door when standing on the ground.	X	

	Meets Request	
	Yes	No
Custom Switch Panels The design of cab instrumentation shall allow for emergency lighting and other switches to be placed within easy reach of the operator thus improving safety. There shall be positions for up to 4 switch panels in the lower instrument console and up to 6 switch panels in the overhead visor console. All switches have backlit labels for low light conditions.	X	
Diagnostic Panel 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 ABS systems to provide blink codes should a problem exist.	X	
The diagnostic panel shall include the following: • Engine diagnostic port • Transmission diagnostic port • ABS diagnostic port • Roll sensor diagnostic port • Command Zone USB diagnostic port • 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)	X	
Dashboard Display A digital display shall be integral to the gauge panel. The display shall be capable of showing simple graphical images as well as text.	X	
The following are examples of data from the display: • Odometer • Trip mileage • PTO hours • Fuel consumption • Engine hours	X	
The display should also be capable of displaying INFO, CAUTION, and WARNING messages. Text messages shall automatically activate to describe the cause of an	X	

	Meets Request	
	Yes	No
audible caution or warning alarm. The display shall be capable of displaying multiple text messages should more than one caution or warning condition exist.		
AIR RESTRICTION INDICATOR A high air restriction warning indicator light LCD message with amber warning indicator and audible alarm shall be provided.	X	
- Ammeter.		
"DO NOT MOVE APPARATUS" INDICATOR A flashing red indicator light, located in the driving compartment, shall be illuminated automatically per the current NFPA requirements. The light shall be labeled "Do Not Move Apparatus If Light Is On."	X	
The same circuit that activates the Do Not Move Apparatus indicator shall activate a pulsing alarm when the parking brake is released.	X	
DO NOT MOVE TRUCK MESSAGES Messages shall be displayed on the Command Zone™, color display located within sight of the driver whenever they Do Not Move Truck light is active. The messages shall designate the item or items not in the stowed for vehicle travel position (parking brake disengaged).	X	
The following messages shall be displayed (where applicable): • 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) • Fold Tank Not Stowed (Fold-A-Tank Not Stowed) • Aerial Not Stowed (Aerial Device Not Stowed) • Stabilizer Not Stowed • Steps Not Stowed	X	

	Meets Request	
	Yes	No
• Handrail Not Stowed		
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.	X	
SWITCH PANELS The built-in switch panels shall be located in the lower console or overhead console of the cab.	X	
The switches shall be rocker-type and include an integral indicator light. For quick, visual indication the switch shall be illuminated whenever the switch is active. A 2-ply, scratch resistant laser engraved Gravoply label indicating the use of each switch shall be placed below the switches. The label shall allow light to pass through the letters for improved visibility in low light conditions. Switches and light source are integral to the switch panel assembly.	X	
WIPER CONTROL 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, an intermittent wiper control and windshield washer switch. The control shall have a "return to park" provision, which allows the wipers to return to the stored position when not in use.	X	
SPARE CIRCUIT There shall be 4 pair of wires, including a positive and a negative, installed on the apparatus.	X	
The above wires shall have the following features:	X	
• The positive wire shall be connected directly to the battery power. • The negative wire shall be connected to ground. • Wires shall be protected to 6 amps at 12 volts DC. • Power and ground shall terminate in the switch panel to be determined at pre-construction. • Termination shall be a Kussmaul part number 091-219-5, switch panel dual USB charger socket. • Wires shall be sized to 125 percent of the protection.		
This circuit(s) may be load managed when the parking brake is applied.	X	

	Meets Request	
	Yes	No
SPARE CIRCUIT There shall be 1 pair of wires, including a positive and a negative, installed on the apparatus.	X	
The above wires shall have the following features: • The positive wire shall be connected directly to the battery power • The negative wire shall be connected to ground • Wires shall be protected to 30 amps at 12 volts DC • Power and ground shall terminate on the officer's side of the engine tunnel • Termination shall be with a 10-place bus bar with screws and removable cover • Wires shall be sized to 125% of the protection	X	
This circuit(s) may be load managed when the parking brake is set.	X	
SPARE CIRCUIT There shall be 4 pair of wires, including a positive and a negative, installed on the apparatus.	X	
The above wires shall have the following features: • The positive wire shall be connected directly to the battery power. • The negative wire shall be connected to ground. • Wires shall be protected to 15 amps at 12 volts DC. • Power and ground shall terminate 1) on the officer's dash, 1) on the driver's dash, one each side of the rear engine tunnel. • Termination shall be with 15-amp, power point plug with rubber cover. • Wires shall be sized to 125 percent of the protection.	X	
This circuit(s) may be load managed when the parking brake is set.		
SPARE CIRCUIT There shall be 2 pair of wires, including a positive and a negative, installed on the apparatus.	X	
The above wires shall have the following features: • The positive wire shall be connected directly to the battery power • The negative wire shall be connected to ground • Wires shall be protected to 15 amps at 12 volts DC • Power and ground shall terminate on the officer's side of the engine tunnel • Termination shall be with heat shrinkable butt splicing	X	

	Meets Request	
	Yes	No
• Wires shall be sized to 125 percent of the protection The circuit(s) may be load managed when the parking brake is set.		
OUTLINE, RED, MUX SWITCHING There shall be 2 switch panel rocker switches outlined in red for identification purposes. The location of the switches shall be to be determined.	X	
RADIO AM/FM WB/USB/BT There shall be 1 Aptiv, Heavy-Duty, AM/FM/WB with front panel USB port, integrated BlueTooth.	X	
FEATURES: Built-in Bluetooth® profile is selectable between Audio Streaming and/ or Hands-Free phone operation (utilizing the vehicle's audio system and a remote mic* - up to 10 devices can be easily stored in the radio memory for fast pairing) - FRONT PANEL USB PORT- gives a direct connect location for memory devices w/ USB interface, to play stored music and/or charge the device and have iPod® control through the radio - Back-lit Display Lighting - GREEN - PA Function (PA Microphone & Cable sold separately The stereo radio shall be mounted within reach of the officer. The quantity and location of the speakers shall be 1 pair of 5.25" speakers in the cab and 1 pair of 5.25" speakers in the crew cab. The type and location of the antenna shall be a roof-mounted rubber antenna located as far to the front and centered side to side as possible, on the lower portion of the cab roof.	X	
INFORMATION CENTER An information center employing a 7.00" diagonal touch screen color LCD display shall be encased in an ABS plastic housing.	X	
The information center shall have the following specifications: • 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 • Grey with black accents • Sunlight Readable • Linux operating system • Minimum of 1000nits rated display • Display can be changed to an available foreign language • An LCD display integral to the cab gauge panel shall be included as outlined in the cab instrumentation area.	X	

	Meets Request	
	Yes	No
• Programmed to read US Customary		
General Screen Design Where possible, background colors shall be used to provide "At a Glance" vehicle information. If information provided on a screen is within acceptable limits, a green background shall be used.	X	
If a caution or warning situation arises the following shall occur: • An amber background/text color shall indicate a caution condition • A red background/text color shall indicate a warning condition • 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 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 or symbol.	X	
Home/Transit Screen This screen shall display the following: • Vehicle Mitigation (if equipped) • Water Level (if the water level system includes compatible communications to the information center) • Foam Level (if the foam level system includes compatible communications to the information center) • Seat Belt Monitoring Screen • Tire Pressure Monitoring (if equipped) • Digital Speedometer • Active Alarms	X	
On Scene Screen This screen shall display the following and shall be auto activated with pump engaged (if equipped): • Battery Voltage	X	

	Meets Request	
	Yes	No
• Fuel • Oil Pressure • Coolant Temperature • RPM • Water Level (if equipped) • Foam Level (if equipped) • Foam Concentration (if equipped) • Water Flow Rate (if equipped) • Water Used (if equipped) • Active Alarms		
Virtual Buttons There shall be 4 virtual switch panel screens that match the overhead and lower lighting and HVAC switch panels.	X	

Page Screen
The page screen shall display the following and allow the user to progress into other screens for further functionality:
 	
• Diagnostics
  o Faults
  ▪ Listed by order of occurrence
  ▪ Allows to sort by system
  o Interlock
  ▪ Throttle Interlocks
  ▪ Pump Interlocks (if equipped)
  ▪ Aerial Interlocks (if equipped)
  ▪ PTO Interlocks (if equipped)
  o Load Manager
  ▪ A list of items to be load managed shall be provided. The list shall provide a description of the load.
  ▪ The lower the priority numbers the earlier the device shall be shed should a low voltage condition occur.
  ▪ The screen shall indicate if a load has been shed (disabled) or not shed.
  ▪ "At a glance" color features are utilized on this screen.
  o Systems
  ▪ Command Zone
  • Module type and ID number
	X	

	Meets Request	
	Yes	No
• Module Version • Input or output number • Circuit number connected to that input or output • Status of the input or output • Power and Constant Current module diagnostic information ▪ Foam (if equipped) ▪ Pressure Controller (if equipped) ▪ Generator Frequency (if equipped) o Live Data ▪ General Truck Data • Maintenance o Engine oil and filter o Transmission oil and filter o Pump oil (if equipped) o Foam (if equipped) o Aerial (if equipped) • Setup o Clock Setup o Date & Time ▪ 12- or 24-hour format ▪ Set time and date o Backlight ▪ Daytime ▪ Nighttime ▪ Sensitivity o Unit Selection o Home Screen o Virtual Button Setup o On Scene Screen Setup o Configure Video Mode ▪ Set Video Contrast ▪ Set Video Color ▪ Set Video Tint • Do Not Move o 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 ▪ Driver Side Cab Door		

	Meets Request	
	Yes	No
▪ 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) ▪ Deck Gun (if applicable) ▪ Light Tower (if applicable) ▪ Hatch Door (if applicable) ▪ Stabilizers (if applicable) ▪ Steps (if applicable) • Notifications o View Active Alarms ▪ Shows a list of all active alarms including date and time of the occurrence is shown with each alarm ▪ Silence Alarms - All alarms are silenced • Timer Screen • HVAC (if equipped) • Tire Information (if equipped) • Ascendant Set Up Confirmation (if equipped)		
Button functions and button labels may change with each screen.	X	
VEHICLE DATA RECORDER There shall be a vehicle data recorder (VDR) capable of reading and storing vehicle information provided.	X	
The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A USB cable can be used to connect the VDR to a laptop to retrieve required information. The program to download the information from the VDR will be available to download on-line.	X	
The vehicle data recorder shall be capable of recording the following data via hardwired and/or CAN inputs: • Vehicle Speed - MPH • Acceleration - MPH/sec • Deceleration - MPH/sec • Engine Speed - RPM	X	

	Meets Request	
	Yes	No
• Engine Throttle Position - % of Full Throttle • ABS Event - On/Off • Seat Occupied Status - Yes/No by Position • Seat Belt Buckled Status - Yes/No by Position • Master Optical Warning Device Switch - On/Off • Time - 24 Hour Time • Date - Year/Month/Day		
Seat Belt Monitoring System A seat belt monitoring system (SBMS) shall be provided on the color display. The SBMS shall be capable of monitoring up to 10 seating positions indicating the status of each seat position per the following: • Seat Occupied & Buckled = Green LED indicator illuminated • Seat Occupied & Unbuckled = Red LED indicator with audible alarm • No Occupant & Buckled = Red LED indicator with audible alarm • No Occupant & Unbuckled = No indicator and no alarm	X	
The seat belt monitoring screen shall become active on the color display when: • The home screen is active: o and there is any occupant seated but not buckled or any belt buckled with an occupant. o and there are no other Do Not Move Apparatus conditions present. As soon as all Do Not Move Apparatus conditions are cleared, the SBMS shall be activated.	X	
The SBMS shall include an audible alarm that shall warn that an unbuckled occupant condition exists when the apparatus is traveling at 15 mph and above.	X	
NFPA 1901, 2016 edition, section 14.1.3.9.1 states that the warning system shall consist of an audible warning device that can be heard at all seating positions designed to be occupied while the vehicle is in motion and a visual display visible to the driver or the officer showing the condition of each seating position.	X	
Vehicle Data Recordable Input When the VDR is active, the seat belt monitoring system alarm shall be silenced through the standard silence alarm switch. The alarm shall chirp in intervals to remind the operator that an alarm is still sounding.	X	

	Meets Request	
	Yes	No
A second silence alarm switch shall be located in a cab switch panel on the captain's side.		
RADIO AND INTERCOM SYSTEM INCLUDING INSTALLATION BY 911 VEHICLE, ANAHEIM, CA		
Radio System	X	
• 2 Motorola APX8500 All Band Remote Head Radio • 2 Additional Speakers in cab for VHF & UHF Radio • 1 Panasonic CF-33 • 1 Panasonic CF-33 Port Replicator and Power Supply • 1 iKey 13.1 inch Hi -Bright Monitor and Keyboard with Touch Pad • 1 Cradle Point IBR900 Modem (supplied by City) • (CS)5 Antenna Kits / Configuring / Connections / Metering • 1 Multiband Antenna for Sierra Wireless Intercom System • 6 911 Vehicle Headsets w/volume and mic mute • 1 911Vehicle Dual Radio Intercom System • 6 In Cab Roof Jack Stations w/ volume mod4 Dash Mounted PTT switches • 1 Pump panel Intercom Station • 1 Tail Board Intercom Station • 500 Beldon 8723 4-Conductor Shielded Cable per ft. • 2 Mobile Radio Interfaces • Power Distribution • 1 Misc. Parts and Materials (Panels, Mounts, Etc.) • 1 LVD for Battery and Ignition Powered Items • 1 Power Distribution Fuse Block 8 x 30 amps • 1 Ground Distribution Block and 15' Black 4 Ga. Cable • 1 Battery Switched Relay (intercom/radio ignition fuse block) • 1 Install 150 Amp Breaker in place of MIDI Fuse Other Equipment • 1 AM/FM/CD/Bluetooth Car Stereo4 In Cab Speakers & Antenna • 4 Pelican Flashlights (CS)1Launch Port iPad Charger (supplied by City) • 1 T.I.C. Camera Charger (supplied by City) • 1 Drager Charger (supplied by City) • 1 KNOX Box (supplied by City) • 4 Pac Set Holders installed on cab doors • 1 Build / Spray / Mount New Communications Cabinet Board • 1 Wire Chase for Power and Ground to Comm Cabinet		

	Meets Request	
	Yes	No
• 1 Custom Console on Doghouse for MDC Mount and Wire Chase with rear drawer and cup holders • 2 Flashlight Mounting Plates • 1 Binder Storage Box and jacket/helmet platform behind Captain Seat • 1 Dash mounted storage tray for clipboard • 2 Cup Holders on Dash for Capt. and Engineer • 1 Aluminum Angle Lip installed at Capt. Dash • 1 Helmet Holder installed on back seat headliner (supplied by City) • 2 Additional Handheld radio pockets for rear seat phone storage		
VEHICLE CAMERA SYSTEM There shall be a color vehicle camera system provided with the following: • 1 camera located at the rear of the apparatus, pointing rearward, displayed automatically with the vehicle in reverse. • 1 camera located on the right side of the apparatus, pointing rearward, displayed automatically with the right-side turn signal. • 1 camera located on the left side of the apparatus, pointing rearward, displayed automatically with the left side turn signal. The camera images shall be displayed on a 7.00" LCD display located in the view of the driver in the custom dash, per instrument panel layout the display shall include manual camera activation capability and audio from the rear camera. The following components shall be included: • 1 M0700136DC Display • 1 SV-CW134639CAI rear camera • 2 CS134404CI Side cameras • All necessary cables	X	
VEHICLE CAMERA GUARD There shall be 1 aluminum treadplate guard(s) fastened over the vehicle camera(s) located over the camera.	X	

	Meets Request	
	Yes	No
ELECTRICAL POWER CONTROL SYSTEM 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.	X	
Distribution centers located throughout the vehicle shall contain battery powered studs for supplying customer installed equipment thus providing a lower cost of ownership.	X	
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.	X	
Solid-State Control System 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, electronic control modules to include black housings, a power indicator and status indicator located near their point of use to reduce harness lengths and improve reliability. The control system shall comply with SAE J1939-11 recommended practices.	X	
The control system shall operate as a master-slave system whereas the main control module instructs all other system components. The system shall contain patented Mission Critical software that maintains critical vehicle operations in the unlikely event of a main controller error. The system shall utilize a Real Time Operating System (RTOS) fully compliant with OSEK/VDX™ specifications providing a lower cost of ownership.	X	
For increased reliability and simplified use, the control system modules shall include the following attributes: • Green LED indicator light for module power • Red LED indicator light for network communication stability status • Control system self-test at activation and continually throughout vehicle operation	X	

	Meets Request	
	Yes	No
• No moving parts due to transistor logic • Software logic control for NFPA mandated safety interlocks and indicators • Integrated electrical system load management without additional components • Integrated electrical load sequencing system without additional components • Customized control software to the vehicle's configuration • Factory and field programmable to accommodate changes to the vehicle's operating parameters		
To assure long life and operation in a broad range of environmental conditions, the solid-state control system modules shall meet the following specifications: • Module circuit board shall meet SAE J771 specifications • Operating temperature from -40C to +70C • Storage temperature from -40C to +70C • Vibration to 50g	X	
IP67 rated enclosure (Totally protected against dust and also protected against the effect of temporary immersion between 15 centimeters and 1 meter)	X	
Operating voltage from 8 volts to 32 volts DC	X	
The main controller shall activate status indicators and audible alarms designed to provide warning of problems before they become critical.	X	
Circuit Protection and Control Diagram 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.	X	
On-Board Electrical System Diagnostics The on-board information center shall include the following diagnostic information: • Text description of active warning or caution alarms • Simplified warning indicators • Amber caution indication with intermittent alarm • Red warning indication with steady tone alarm	X	
Advanced diagnostic feature shall be provided in this control system. From the Command Zone display or connected wireless device, these features allow the user to monitor the real-time status of every input or output on the vehicle. It also allows users	X	

	Meets Request	
	Yes	No
logged in as an administrator to force on inputs or outputs to assist the troubleshooting process.		
TCU Module with Wi-Fi An in-cab module shall provide Wi-Fi wireless interface and data logging capability (no exception). The Wi-Fi interface shall comply with IEEE 802.11 b/g/n capabilities while communicating at 2.4 Gigahertz. The module shall communicate through a white Wi-Fi antenna allowing a line of site communication range of up to 300 feet with a roof mounted antenna.	X	
The module shall transmit a password protected web page to a Wi-Fi enabled device (i.e., most smart phones, tablets, or laptops) allowing two levels of user interaction. The firefighter level shall allow vehicle monitoring of the vehicle and firefighting systems on the apparatus. The technician level shall allow diagnostic access to inputs and outputs installed on the Command Zone™, control and information system.	X	
The TCU capability shall record faults from the engine, transmission, ABS and Command Zone™, control and information systems as they occur. No other data shall be recorded at the time the fault occurs. The data TCU shall provide up to 2 Gigabytes of data storage.	X	
The TCU shall provide a means to download the TCU information and update software in the device.	X	
Indicator Light and Alarm Prove-Out System A system shall be provided which automatically tests basic indicator lights and alarms located on the cab instrument panel.	X	
Voltage Monitor System 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.	X	
The alarm shall activate if the system falls below 11.8 volts DC for more than 2 minutes.	X	
Dedicated Radio Equipment Connection Points There shall be 3 studs provided in the primary power distribution center located in front of the officer for two-way radio equipment. The studs shall consist of the following: • 12-volt 40-amp battery switched power • 12-volt 60-amp ignition switched power • 12-volt 60-amp direct battery power	X	

	Meets Request	
	Yes	No
There shall also be a 12-volt 100-amp ground stud located in or adjacent to the power distribution center.	X	
EMI/RFI Protection 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.	X	
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 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.	X	
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.	X	
ELECTRICAL SYSTEM PROGNOSTICS There shall be a software-based vehicle tool provided to predict remaining life of the vehicle's critical fluid and events.	X	
The system shall send automatic indications to the information center and/or wireless enabled devices to proactively alert of upcoming service intervals.	X	
Prognostics shall include the following: • Engine oil and filter • Transmission oil and filter	X	

	Meets Request	
	Yes	No
ELECTRICAL 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.	X	
Electrical wiring and equipment shall be installed utilizing the following guidelines: 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. 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. 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. 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). 5. All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area. 6. All electrical terminals in exposed areas shall have silicon applied completely over the metal portion of the terminal.	X	
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.	X	
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.	X	
The results of the tests shall be recorded and provided to the purchaser at time of delivery.	X	

	Meets Request	
	Yes	No
BATTERY SYSTEM 6 12 volt, Deka, Model 1231MF, maintenance free group 31 batteries that include the following features, each, shall be provided: • 1000 CCA (cold cranking amps) • 185 reserve capacity • High cycle • Ref CA of 1190 at 0 degrees Fahrenheit • 185 reserve capacity • Female threaded	X	
BATTERY SYSTEM There shall be a single starting system with an ignition switch and starter button provided and located on the cab instrument panel.	X	
MASTER BATTERY SWITCH There shall be a Blue Sea 9003E, red master battery switch provided within the cab within easy reach of the driver to activate the battery system.	X	
An indicator light shall be provided on the instrument panel to notify the driver of the status of the battery system.	X	
BATTERY COMPARTMENTS Batteries shall be placed on non-corrosive mats and be stored in well ventilated compartments located under the cab.	X	
Heavy-duty battery cables shall be used to provide maximum power to the electrical system. Cables shall be color coded.	X	
Battery terminal connections shall be coated with anti-corrosion compound. Battery solenoid terminal connections shall be encapsulated with semi-permanent rubberized compound.	X	
JUMPER STUDS 1 set of battery jumper studs with plastic color-coded covers shall be included on the battery compartments.	X	
BATTERY CHARGER There shall be a Kussmaul. Auto Charge 4000	X	

	Meets Request	
	Yes	No
The battery charger shall be wired to the AC shoreline inlet through an AC receptacle adjacent to this battery charger.		
There shall be a Kussmaul™, Model #091-189-12-3.5D digital display included.		
Battery charger shall be located in the cab behind the driver seat.		
The battery charger indicator shall be located in the driver's step area.		
SHORELINE There shall be 1 30-amp 120-volt AC twist lock inlet(s) NEMA L5-30 with gray cover(s) provided to operate the dedicated 120-volt AC circuits on the apparatus.	X	
The shoreline(s) shall be connected to the battery charger.	X	
A mating connector body shall also be supplied with the loose equipment.	X	
There shall be a label installed near the inlet(s) that state the following: • Line Voltage • Current Ratting (amps) • Phase • Frequency	X	
The shoreline receptacle shall be located in the driver side lower step well of cab.	X	
JUMPER STUDS There shall be 1 set of battery jumper studs with plastic color-coded covers provided under the passenger side battery box.	X	
ALTERNATOR A Delco Remy®, Model 55SI, alternator shall be provided. It shall have a rated output current of 430 amps, as measured by SAE method J56. The alternator shall feature an integral regulator and rectifier system that has been tested and qualified to an ambient temperature of 257 degrees Fahrenheit (125 degrees Celsius). The alternator shall be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.	X	
ELECTRONIC LOAD MANAGER 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.	X	

	Meets Request	
	Yes	No
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.	X	

The system shall include the following features:
• 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 activate before any electric loads are shed and deactivate with the service brake.
  o If enabled:
  ▪ "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.
	X	

The information center, where applicable, includes a "Load Manager" screen indicating the following:
• Load managed items list, with priority levels and item condition.
• Individual load managed item condition:
  o ON = not shed
  o SHED = shed		

SEQUENCER 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.	X	
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.	X	

	Meets Request	
	Yes	No
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.	X	
When the emergency master switch is deactivated, the sequencer shall deactivate the warning light loads in the reverse order.	X	
Sequencing of the following items shall also occur, in conjunction with the ignition switch, at half-second intervals: • Cab Heater and Air Conditioning • Crew Cab Heater (if applicable) • Crew Cab Air Conditioning (if applicable) • Exhaust Fans (if applicable) • Third Evaporator (if applicable)	X	
HEADLIGHTS There shall be 4 JW Speaker®, Model 8800, 4" x 6" rectangular LED lights with heated lens mounted in the front quad style, chrome housing on each side of the cab grille: • the outside light on each side shall contain a part number 055***1 low beam module • the inside light on each side shall contain a part number 055***1 high beam module • the headlights to include chrome bezels	X	
The low beam lights shall be activated when the headlight switch is on.	X	
The high beam and low beam lights shall be activated when the headlight switch and the high beam switch is activated.	X	
DIRECTIONAL LIGHTS There shall be 2 Whelen 600 series, LED combination directional/marker lights provided. The lights shall be located on the outside cab corners, next to the headlights. The color of the lenses shall be the same color as the LED's.	X	
INTERMEDIATE LIGHT There shall be 2 Weldon, Model 9186-8580-29, amber LED turn signal marker lights furnished, 1 each side, in the rear fender panel. The light shall double as a turn signal and marker light.	X	

	Meets Request	
	Yes	No
CAB CLEARANCE/MARKER/ID LIGHTS There shall be 7 amber LED lights provided per the following: • 3 amber LED identification lights shall be installed in the center of the cab above the windshield. • 2 amber LED clearance lights shall be installed, 1 on each outboard side of the cab above the windshield as close to the outside of the apparatus as practical. • 2 amber LED clearance lights shall be installed, 1 on each side of the cab as high and far forward as practical. The lights shall be installed without guards.	X	
FRONT CAB SIDE DIRECTIONAL/MARKER LIGHTS There shall be 2 Truck-Lite®, Model 19036Y, amber LED lights installed to the outside of the chrome wrap around bezel, 1 on each side of the cab.	X	
The lights shall activate as marker lights with the headlight switch and directional lights with the corresponding directional circuit.	X	
REAR CLEARANCE/MARKER/ID LIGHTING There shall be 3 LED identification lights located at the rear installed per the following: • As close as practical to the vertical centerline • Centers spaced not less than 6.00" or more than 12.00" apart • Red in color • All at the same height	X	
There shall be 2 LED lights installed at the rear of the apparatus used as clearance lights located at the rear of the apparatus per the following: • To indicate the overall width of the vehicle • 1) each side of the vertical centerline • As near the top as practical • Red in color • To be visible from the rear	X	
There shall be 2 LED lights installed on the side of the apparatus used as marker lights as close to the rear as practical per the following: • To indicate the overall length of the vehicle • 1 each side of the vertical centerline • As near the top as practical	X	

	Meets Request	
	Yes	No
• All at the same height • All at the same height		
There shall be 2 red reflectors located on the rear of the truck facing to the rear, 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.	X	
There shall be 2 red reflectors located on the side of the truck facing to the side, 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.	X	
Per FMVSS 108 and CMVSS 108 requirements.	X	
REAR FMVSS LIGHTING The rear stop/tail and directional lighting shall include the following: • 2 Whelen®, Model M62BTT, 4.30" high x 6.70" wide x 1.40" deep brake/taillights with red LEDs • 2 Whelen, Model M62T, 4.30" high x 6.70" wide x 1.40" deep directional lights with amber LEDs. • The directional lights shall be set to Steady On (Arrow) flash pattern. • The lens color lenses to be same as the LEDs. • The lights to include chrome trim.	X	
2 Whelen Model M6BUW, LED backup lights shall be provided with a flange.	X	
LICENSE PLATE BRACKET There shall be 1 license plate bracket mounted on the rear of the body.	X	
A white LED light shall illuminate the license plate. A stainless-steel light shield shall be provided over the light that shall direct illumination downward, preventing white light to the rear.	X	
LIGHTING BEZEL There shall be 2 Whelen, Model M6FCV4P, 4 place chromed ABS housings with Pierce logos provided for the rear M6 series stop/tail, directional, back up, scene lights or warning lights.	X	
BACK-UP ALARM A PRECO, Model 1040, solid-state electronic audible back-up alarm that actuates when the truck is shifted into reverse shall be provided. The device shall sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum 10 dBA above surrounding environmental noise levels.	X	

	Meets Request	
	Yes	No
REAR STEP BUZZER There shall be 2) buzzer button(s) located one each side of the rear body, below the handrail that shall be labeled 1-Stop, 2-Go and 3-Back.	X	
The button(s) shall activate the alarm in the cab.	X	
The switches shall be located within 62.00" to the ground.	X	
SYNCHRONIZE WARNING LIGHTS The sync wires to the following 2 lights located on the lower rear warnings and the upper M7 lights on the beacon housing to create a x pattern. on the apparatus shall be connected together to maintain the flash patterns of the lights.	X	
The lights located Tbd shall remain on phase 1 or flash together.	X	
The lights located Tbd shall be changed to phase 2 or flash opposite the lights selected above.	X	
CAB PERIMETER SCENE LIGHTS There shall be 4 TecNiq, Model T10-LC00-1, 15.00" lights with white LEDs and 45-degree stainless steel brackets provided per the following: • 1 under the driver's side cab access step • 1 under the passenger's side cab access step • 1 under the passenger's side crew cab access step • 1 under the driver's side crew cab access step	X	
The lights shall be activated when the battery switch is on, when the respective door is open and by the same control selected for the body perimeter lights.	X	
PUMP HOUSE PERIMETER LIGHTS There shall be 2 TecNiq, Model T10-LC00-1, 15.00" white 12-volt DC LED weatherproof strip lights provided under the pump panel running boards, 1 each side.	X	
The lights shall be controlled by the same means as the body perimeter lights.	X	
BODY PERIMETER SCENE LIGHTS There shall be 2 TecNiq, Model T10-LC00-1, 15.00" 12-volt DC LED strip lights provided at the rear step area of the body, 1 each side shining to the rear.	X	
The perimeter scene lights shall be activated when a switch within reach of the driver is activated, a switch at the passenger's side pump panel is activated and a cab door is open.	X	

	Meets Request	
	Yes	No
ADDITIONAL PERIMETER LIGHTS There shall be 4 TecNiq, Model T10-LC00-1, 1.25" high x 15.00" long white LED light(s) provided under the LS2, LS3, RS1 and RS3 compartments.	X	
These additional lights shall be controlled with the other body perimeter lights.	X	
ENHANCED SOFTWARE FOR PERIMETER LIGHTS All perimeter lights and scene lights shall be deactivated when the parking brake is released.	X	
The cab and crew cab perimeter lights shall dim after 10 seconds or immediately if the vehicle's transmission is put into gear.	X	
STEP LIGHTS There shall be 2 white LED step lights shall be provided at the rear to illuminate the tailboard/step area.	X	
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 10 inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same 10-inch distance below the light.	X	
These step lights shall be actuated with the perimeter scene lights.	X	
All other steps on the apparatus shall be illuminated per the current edition of NFPA 1901.	X	
SIDE SCENE LIGHTS There shall be 2 Whelen®, Model M9LZC, 6.50" high x 10.37" long x 1.37" deep light(s) white LEDs and chrome trim installed on the side of the apparatus, 1 high and forward on driver's side body and 1 high and rearward on driver's side body.	X	
The light(s) shall be activated by a switch at the driver's side switch panel.	X	
The light(s) may be load managed when the parking brake is applied.	X	
12 VOLT LIGHTING There shall be 1 Whelen® Model P*H2*, 17,750 lumens 12-volt DC light(s) with a combination of flood and spot optics provided on the front visor, centered.	X	
The housing(s) painted parts of this light assembly to be white. The light(s) shall be controlled by a switch at the driver's side switch panel.	X	
These light(s) may be load managed when the parking brake is applied.	X	

	Meets Request	
	Yes	No
CUSTOM VISOR LIGHT BRACKET There shall be 1 custom visor light bracket attached to the cab brow. The bracket shall be fabricated to match customer provided image and shall be painted job color.	X	
12 VOLT DC SCENE LIGHTS There shall be 1 Whelen® Model P*H2*, 17,750 lumens 12-volt DC powered lights with white LEDs and a combination of flood and spot optics installed on the apparatus located on the passenger side rear of the cab.	X	
The light(s) to be installed on push upside mount outside pole length to be 12.00" long with a handle holder and sensor connecting the pole to the Do Not Move Truck Indicator circuit.	X	
The painted parts of this light assembly to be white.	X	
The lights shall be activated by a switch at the driver's side switch panel.	X	
The light(s) may be load managed when the parking brake is applied.	X	
12 VOLT DC SCENE LIGHTS There shall be 1 Whelen® Model P*H2*, 17,750 lumens 12-volt DC powered lights with white LEDs and a combination of flood and spot optics installed on the apparatus located, on the passenger driver side rear of the cab. The light(s) to be installed on push upside mount, outside pole length to be 12.00" long with handle holder and sensor connecting the pole to the Do Not Move Truck Indicator circuit.	X	
The painted parts of this light assembly to be white.	X	
The lights shall be activated by a switch at the driver's side switch panel.	X	
The light(s) may be load managed when the parking brake is applied.	X	
12 VOLT LIGHTING There shall be 2 Whelen® Model MP**, 4,100 lumens 12-volt DC light(s) with white LEDs installed on the apparatus body located, mounted high on the driver and passenger side rear body.	X	
The painted parts of this light assembly to be white.	X	
The light(s) to be installed on adjustable bail bracket(s).	X	
The lights shall be controlled by a switch at the driver's side switch panel.	X	
The light(s) may be load managed when the parking brake is applied.	X	
12 VOLT LIGHTING		

	Meets Request	
	Yes	No
There shall be 1 Whelen® Model PCPSM2*, 16,000 lumens 12-volt DC surface mount light(s) installed on the body of the apparatus located, centered on the driver side body hatch compartment.	X	
The light(s) shall include housing(s) with a chrome cover.	X	
The light(s) shall be controlled by a switch at the driver's side switch panel and by a switch at the passenger's side switch panel.	X	
The light(s) may be load managed when the parking brake is applied.	X	
12 VOLT LIGHTING		
There shall be 1 Whelen® Model PCPSM2*, 16,000 lumens 12-volt DC surface mount light(s) installed on the body of the apparatus located, centered on the passenger side body hatch compartment.	X	
The light(s) shall include housing(s) with a chrome cover.	X	
The light(s) shall be controlled by a switch at the driver's side switch panel and by a switch at the passenger's side switch panel.	X	
The light(s) may be load managed when the parking brake is applied.	X	
	X	
HOSE BED LIGHTS		
There shall be white 12-volt DC LED light strips with stainless steel protective cover, provided to light the hose bed area. Hose Bed lights shall meet the photometric levels listed in NFPA 1901 for Hose Bed lighting requirements.	X	
• Light strip(s) shall be installed along the upper edge of the left side of the hose bed. • Light strip(s) shall be installed along the upper edge of the right side of the hose bed.	X	
The lights shall be activated by a cup switch at the rear of the apparatus no more than 72.00" from the ground.	X	
WALKING SURFACE LIGHT		
There shall be Model FRP, 4" round black 12-volt DC LED floodlight(s) with bolt mount provided to illuminate the entire designated walking surface on top of the body.	X	
The light(s) shall be activated when the body step lights are on.	X	
CITY/FREEWAY SWITCH IPO EMASTER		
There shall be 2 switches provided in the cab on the switch panel, 1 switch will be labeled CITY and 1 switch shall be labeled FREEWAY. These switches shall be in place of the E-master switch.	X	
The CITY switch shall operate same as E-master switch and enable all warning lights.	X	
The FREEWAY switch shall operate as a E-master switch with special warning light operation. The Freeway switch shall activate the steady burn lower front warning, lower rear warning and upper rear warning lights.	X	

	Meets Request	
	Yes	No
The FREEWAY switch shall deactivate the roof lights, the side warning lights, the flashing front warning lights, and Hi Beam flash if enabled.	X	
The deactivated warning lights can be manually reactivated if required.	X	
WATER TANK		
Booster tank shall have a capacity of 500 gallons and be constructed of polypropylene plastic by United Plastic Fabricating, Incorporated.	X	
Tank joints and seams shall be nitrogen welded inside and out.	X	
Tank shall be baffled in accordance with NFPA Bulletin 1901 requirements.	X	
Baffles shall have vent openings at both the top and bottom to permit movement of air and water between compartments.	X	
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.	X	
Transverse partitions shall extend from 4.00" off the bottom of the tank to the underside of the top cover.	X	
All partitions shall interlock and shall be welded to the tank bottom and sides.	X	
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.	X	
Tank top shall be sufficiently supported to keep it rigid during fast filling conditions.	X	
Construction shall include 2.00" polypropylene dowels spaced no more than 30.00" apart and welded to the transverse partitions, 2 of the dowels shall be drilled and tapped (.50" diameter, 13.00" deep) to accommodate lifting eyes.	X	
A sump that will be sized dependent on the tank to pump plumbing shall be provided at the bottom of the water tank.	X	
Sump shall include a drain plug and the tank outlet.	X	
Tank shall be installed in a fabricated cradle assembly constructed of structural steel.	X	
Sufficient crossmembers shall be provided to properly support bottom of tank. Crossmembers shall be constructed of steel bar channel or rectangular tubing.	X	

	Meets Request	
	Yes	No
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.	X	
Stops or other provision shall be provided to prevent an empty tank from bouncing excessively while moving vehicle.	X	
Mounting system shall be approved by the tank manufacturer.	X	
Fill tower shall be constructed of .50" polypropylene and shall be a minimum of 8.00" wide x 14.00" long.	X	
Fill tower shall be furnished with a .25" thick polypropylene screen and a hinged cover.	X	
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.	X	
TANK DRAIN A 2.00" tank drain shall be installed with a 2.00" ball valve located underneath the left front compartment that is properly labeled.	X	
SLEEVE, PLUMBING, THROUGH TANK 1 sleeve shall be provided in the water tank for a 3.00" pipe to the rear.	X	
WATER TANK RESTRAINT A heavy-duty water tank restraint shall be provided.	X	
BODY HEIGHT The height of the body shall be 92.00" from the bottom of the body to the top of the body.	X	
HOSE BED The hose bed shall be fabricated of .125"-5052 aluminum with a nominal 38,000 psi tensile strength.	X	
The interior of the hose bed shall be unpainted.	X	
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.	X	
The hose bed walls shall be unpainted and with a brushed finish.	X	

	Meets Request	
	Yes	No
Hose bed shall accommodate 350' of 1.75", 750' of 3", 750' of 3", 250' of 1.75".	X	
HOSE BED DIVIDER 3 hose bed dividers shall be furnished for separating hose. Each divider shall be constructed of a .125" brushed aluminum sheet fitted and fastened into a slotted, 1.50" diameter radiused extrusion along the top, bottom, and rear edge.	X	
Divider shall be fully adjustable by sliding in tracks, located at the front and rear of the hose bed.	X	
Divider shall be held in place by tightening bolts, at each end.	X	
Acorn nuts shall be installed on all bolts in the hose bed which have exposed threads.	X	
HOSE BED COVER 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 modular bridgework support.	X	
The cover shall be reinforced so that it can support the weight of a man walking on the cover.	X	
The cover is designed with the left cover opening first.	X	
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.	X	
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.	X	
The hose bed cover shall be connected to the Do Not Move Truck indicator. The light shall be activated if the cover is not in the stowed position and the parking brake is released.	X	
HOSEBED END FLAP There shall be a red vinyl flap installed at the rear of the hose bed.	X	
The vinyl flap shall have nylon tie down straps, with quick release thumb spring buckles. Fasnap model 207668 stainless steel buckles shall be attached to the flaps. The vinyl end skirt shall be installed directly to the hose bed frame.	X	

	Meets Request	
	Yes	No
Rubber coated hooks and stainless-steel footman loops shall secure the end skirt/bed cover to the main body.	X	
RUNNING BOARDS Running boards shall be fabricated of .125" bright aluminum treadplate.	X	
Each running board shall be supported by a welded 2.00" square tubing and channel assembly, which shall be bolted to the pump compartment substructure.	X	
Running boards shall be 12.75" deep and spaced .50" away from the pump panel.	X	
A splash guard shall be provided above the running board treadplate.	X	
TAILBOARD The tailboard shall be constructed of .125" bright aluminum treadplate and spaced .50" from the body, as well as supported by a structural steel assembly.	X	
The tailboard area shall be 16.00" deep and full width of the body. The outboard sides of the tailboard shall be angled at 45 degrees beginning at the point where the body meets the tailboard at the outboard edge angling rearward to the rear edge of the tailboard.	X	
The exterior side shall be flanged down and in for increased rigidity of tailboard structure.	X	
SMOOTH ALUMINUM REAR WALL The rear wall shall be smooth aluminum.	X	
TOW BARS 2 tow bars shall be installed under the tailboard.	X	
Tow bars shall be fabricated of 1.00" CRS bar rolled into a 3.00" radius.	X	
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.	X	
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.	X	
Tow bar design shall have been fully tested and evaluated using strain gauge testing and finite element analysis techniques.	X	
HITCH RECEIVER		

	Meets Request	
	Yes	No
A hitch receiver shall be installed at the rear and the sides of the apparatus. The side receivers shall be located to the rear of the wheels, under the rear platform. The side hitch receivers shall be capable of retaining a 9,000 lb. portable winch.	X	
The hitch receivers shall be constructed of heavy steel tubing and reinforced to the truck framework, for the receiving portion. Slide-in portion shall be held in place by 1 safety pin with clip.	X	
LABEL A label shall be provided near the rear receiver explaining that a trailer is neither rated nor approved to be attached to the receiver.	X	
RUNNING BOARD HOSE RESTRAINT A pair of 2.00" wide black nylon straps with Velcro fasteners shall be provided for each hose tray to secure the hose during travel. There shall be 2 hose trays located in the left side running board	X	
HOSE TRAY 2 hose trays shall be recessed 1 in each side running board.	X	
Capacity of the tray shall be 9" Deep x 56" Long x 9" Wide.	X	
Rubber matting shall be installed on the floor of the tray to provide proper ventilation. Drain holes shall be provided.	X	
COMPARTMENTATION The apparatus body shall be built of aluminum construction using a minimum of 0.125" thick, 5052-H32 aluminum.	X	
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.	X	
Welded construction shall consist of 1.00" x 0.38" 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.	X	
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.	X	

	Meets Request	
	Yes	No
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.	X	
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).	X	
Side compartment flooring shall be of the sweep out design with the floor minimum of 1.00" higher than the compartment door lip.	X	
Drip protection shall be provided above the doors by means of aluminum extrusion or formed bright aluminum treadplate.	X	
The top of the compartment shall be sheet metal and covered with bright aluminum treadplate rolled over the edges on the front, and rear. These covers shall have the corners welded.	X	
The aluminum treadplate covers shall not make up the ceiling of the compartment (no exception).	X	
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.	X	
UNDERBODY SUPPORT SYSTEM Due to the severe loading requirements of this pumper a method of body and compartment support suitable for the intended load shall be provided.	X	
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 0.375" 80k high strength steel and bolted to the chassis frame rails with 0.625" diameter Grade 8 bolts.	X	
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.	X	
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.	X	

	Meets Request	
	Yes	No
The isolators shall have a broad load range, proven viability in vehicular applications, be of a failsafe design and allow for all necessary movement in 3 transitional and rotational modes.	X	
The neoprene isolators shall be installed in a modified V 3-point mounting pattern to reduce the natural flex of the chassis being transmitted to the body.	X	
A design with body compartments simply hanging/sitting on the chassis in an unsupported (cantilever) fashion shall not be acceptable.	X	
AGGRESSIVE WALKING SURFACE All exterior surfaces designated as stepping, standing, and walking areas shall comply with the required average slip resistance of the current NFPA standards.	X	
LOUVERS All body compartments shall have a minimum of 1 set of automotive style, dust resistant louvers pressed into a wall. The louvers shall incorporate a 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.	X	
TESTING OF BODY DESIGN Body structural analysis shall be fully tested. Proven engineering and test techniques such as finite element analysis, strain gauging, and model analysis shall be performed with special attention given to fatigue, life and structural integrity of the body and substructure.	X	
Body shall be tested while loaded to its greatest in-service weight.	X	
The criteria used during the testing procedure shall include: • Raising opposite corners of the vehicle tires 9.00" to simulate the twisting a truck may experience when driving over a curb. • Making a 90-degree turn, while driving at 20 mph to simulate aggressive driving conditions. • Driving the vehicle at 35 mph on a washboard road. • Driving the vehicle at 55 mph on a smooth road. • Accelerating the vehicle fully, until reaching the approximate speed of 45 mph on rough pavement.	X	
Evidence of actual testing techniques shall be made available upon request.	X	
FEA shall have been performed on all substructure components.	X	

	Meets Request	
	Yes	No
ENGINEER COMPARTMENT A transversed engineer compartment shall be provided ahead of the water pump.	X	
Compartment shall be 15.00" wide x 38.00" high x 66.00" deep. The door opening shall be 13.50" wide x 36.25" high. The clear height of the transverse section over the chassis frame rails shall be 21.00" high.	X	
Compartment shall be furnished with vertically hinged, lap style, compartment doors that have a "D" handle latch and positive door hold open device.	X	
A section of the back wall of each compartment shall be removable for access to the fire pump.	X	
LEFT SIDE COMPARTMENTATION The left side compartmentation shall consist of three lap door compartments.	X	
A full height vertically hinged double door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 35.75" wide x 63.63" high x 26.00" deep in the lower 53.63" of the compartment and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 32.00" wide x 58.88" high.	X	
A horizontally hinged, single lift-up door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 60.00" wide x 32.88" high x 26.00" deep in the lower 22.88" of the compartment and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 57.25" wide x 27.00" high.	X	
A full height, vertically hinged, double door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 51.75" wide x 64.63" high x 26.00" deep in the lower 54.63" of the compartment and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 48.00" wide x 59.88" high.	X	
The interior height of the compartments shall be measured from the compartment floor to the ceiling. The depth of the compartments shall be measured from the back wall to the inside of the door frame.	X	
The vertically hinged doors shall be furnished with a positive door holder. Closing of the doors shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.	X	
The lift-up door shall be furnished with two gas-charged cylinders to assist in the opening of the door and to maintain the door in an open position. There shall be a field	X	

	Meets Request	
	Yes	No
adjustable, three-position bracket mounted on the vertical side door opening that shall allow the door to be held open at 87, 90, or 93.		
RIGHT SIDE COMPARTMENTATION The right-side compartmentation shall consist of three lap door compartments.	X	
A full height vertically hinged double door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 35.75" wide x 53.63" high x 26.00" deep in the lower 53.63" of the compartment and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 32.00" wide x 58.88" high.	X	
A horizontally hinged, single lift-up door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 60.00" wide x 22.88" high x 26.00" deep in the lower 22.88" of the compartment and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 57.25" wide x 27.00" high.	X	
A full height, vertically hinged, double door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 51.75" wide x 54.63" high x 26.00" deep in the lower 54.63" of the compartment and 12.00" deep in the remaining upper portion. The clear door opening shall be a minimum of 48.00" wide x 59.88" high.	X	
The interior height of the compartments shall be measured from the compartment floor to the ceiling. The depth of the compartments shall be measured from the back wall to the inside of the door frame.	X	
The vertically hinged doors shall be furnished with a positive door holder. Closing of the doors shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.	X	
The lift-up door shall be furnished with 2 gas-charged cylinders to assist in the opening of the door and to maintain the door in an open position. There shall be a field adjustable, 3-position bracket mounted on the vertical side door opening that shall allow the door to be held open at 87, 90, or 93.	X	
SIDE COMPARTMENT DOORS All hinged compartment doors shall be lap style with double panel construction and shall be a minimum of 1.50" thick. The doors shall be made from the same material as the body. To provide additional door strength a "C" section reinforcement shall be installed between the outer and interior panels.	X	

	Meets Request	
	Yes	No
Doors shall be provided with a closed cell rubber gasket around the surface that laps onto the body. A second heavy-duty automotive rubber molding with a hollow core shall be installed on the door framing that seals onto the interior panel, to ensure a weather resisting compartment.	X	
All compartment doors shall have polished stainless steel continuous hinge with a pin diameter of .25" that is bolted or screwed on with stainless steel fasteners. (Hinges which are welded on shall not be acceptable.)	X	
All door locking mechanisms shall be fully enclosed within the door panels to prevent fouling of the lock in the event equipment inside shifts into the lock area.	X	
Doors shall be latched with recessed, polished stainless steel "D" ring handles and FMVSS approved door locking mechanisms.	X	
To prevent corrosion caused by dissimilar metals, compartment door handles shall not be attached to outer door panel with screws. A rubber gasket shall be provided between the "D" ring handle and the door.	X	
REAR COMPARTMENTATION A vertically hinged, double door compartment above the rear tailboard shall be provided.	X	
The interior dimensions of this compartment shall be 37.00" wide x 32.50" high x 25.88" deep. The interior height of the compartments shall be measured from the compartment floor to the ceiling. The depth of the compartments shall be measured from the back wall to the inside of the door frame.	X	
A removable access panel shall be furnished on the back wall of the compartment.	X	
The rear compartment shall be open into the rear side compartments. The transverse opening shall be a minimum of 22.00" wide x 23.50" high	X	
The clear door opening of this compartment shall be 32.63" wide x 27.63" high.	X	
Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.	X	
The vertically hinged compartment doors shall be provided with a positive door holder.	X	

	Meets Request	
	Yes	No
REAR COMPARTMENT DOORS All hinged compartment doors shall be lap style with double panel construction and shall be a minimum of 1.50" thick. To provide additional door strength, a "C" section reinforcement shall be installed between the outer and interior panels.	X	
Doors shall be provided with a closed cell rubber gasket around the surface that laps onto the body. A second heavy-duty automotive rubber molding with a hollow core shall be installed on the door framing that seals onto the interior panel, to ensure a weather resisting compartment.	X	
All compartment doors shall have polished stainless steel continuous hinge with a pin diameter of .25", that is bolted or screwed on with stainless steel fasteners. (Hinges which are welded on shall not be acceptable.) A strip of dielectric isolation tape shall be provided between the hinge and door jamb.	X	
All door lock mechanisms shall be fully enclosed within the door panels to prevent fouling of the lock in the event equipment inside shifts into the lock area.	X	
Doors shall be latched with recessed, polished stainless steel "D" ring handles and Eberhard 106 locks.	X	
To prevent corrosion caused by dissimilar metals, compartment door handles shall not be attached to outer door panel with screws. A rubber gasket shall be provided between the "D" ring handle and the door.	X	
REVERSE HINGED DOOR The 1 compartment door, located LS5, shall have the hinge at the rear of the door.	X	
SCUFFPLATE ON INTERIOR OF COMPARTMENT DOOR(S) The 12 compartment doors shall include a brushed stainless steel scuffplate to cover the entire width and height on the inside panel of each door pan.	X	
Scuffplate shall be located all compartment doors.		
COMPARTMENT LIGHTING There shall be 7 compartment(s) with 2 white 12-volt DC LED compartment light strips. The dual light strips shall be centered vertically along each side of the door framing. There shall be 2 light strips per compartment. The dual light strips shall be in all body compartment(s).	X	
Any remaining compartments without light strips shall have a 6.00" diameter Truck-Lite, Model: 79384 lights. Each light shall have a number 1076 one filament, two wire bulb.	X	

	Meets Request	
	Yes	No
Opening the compartment door shall automatically turn the compartment lighting on.	X	
HATCH COMPARTMENTS Hatch compartments with 2 lift-up, top opening hatch doors shall be provided above the left and right-side body compartments. Each hatch compartment shall extend the full length of the side body compartmentation x 28.00" wide. The left side hatch compartment shall be 24.00' maximum depth. The right-side hatch compartment shall be 10.00" 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.	X	
Sides of the compartments shall be constructed of the same material as the body and painted job color on the outside panels. A 2.00" tall, formed aluminum painted to match the lower body color shall be provided to cover the seam between the top of the body panel and the bottom of the hatch compartment. The vertical outboard seam at the center of the compartment shall have a 2.00" wide formed painted aluminum trim.	X	
Top of the compartments shall be constructed of bright aluminum treadplate.	X	
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.	X	
These double pan doors shall have lipped edges with a rubber seal for weather resistance.	X	
Doors shall be hinged on the outboard side and shall be held open with pneumatic stay arms.	X	
The compartments shall have a 3/4" drain that extends to below the body.	X	
Black rubber matting shall be provided to help prevent stored equipment in pooled water. shall be provided on the compartment floor to stop wet equipment from sitting in water pools.	X	
Handrails shall be provided at the step area to the rear of the hatch compartment, 1 curved handrail shall be mounted on the outboard side of the step area at the rear and curve over the top and 1 straight handrail shall be mounted vertically along the inboard side of the step area.	X	
HATCH COMPARTMENT LIGHTING		

	Meets Request	
	Yes	No
There shall be LED strip lights mounted full length on the interior, hinged side of each compartment.	X	
Opening the hatch compartment door shall automatically turn the hatch compartment lighting on	X	
MOUNTING TRACKS There shall be recessed tracks installed vertically to support the adjustable shelf(s).	X	
Tracks shall not protrude into any compartment in order to provide the greatest compartment space and widest shelves possible.	X	
The tracks shall be provided in each compartment except for the one that contains the pump operator's panel.	X	
ADJUSTABLE SHELFS There shall be 8 shelves, with a capacity of 500 lb. provided. The shelf construction shall consist of 12-gauge stainless steel with 2.00" sides. Each shelf shall be infinitely adjustable by means of a threaded fastener, which slides in a track. Each shelf shall be unpainted with a natural finish.	X	
The location shall be determined at a later date	X	
SLIDE-OUT ADJUSTABLE HEIGHT TRAY There shall be 1 slide-out tray provided.	X	
Each tray shall have 2.00" high sides and a minimum capacity rating of 250 lb. in the extended position.	X	
Each tray shall be constructed of aluminum with a dual action finish	X	
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.	X	
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.	X	
The location(s) shall be determined at a later date	X	
SLIDE-OUT/TILT-DOWN TRAY There shall be 5 slide-out trays provided.	X	

	Meets Request	
	Yes	No
The bottom of each tray shall constructed of 0.188" thick brushed 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.	X	
Each tray shall be at maximum width and depth for each compartment.	X	
A spring-loaded lock shall be provided on each side at the front of the tray. Releasing the locks shall allow the tray to slide out approximately two-thirds (2/3) 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.	X	
Rubber padded stops shall be provided for the tray in the extended positions.	X	
The capacity rating of the tray shall be a minimum of 215 lb. in the extended position.	X	
The vertical position of the tray within the compartment shall be adjustable.	X	
The tray(s) shall be located to be determined.	X	
SLIDE-OUT FLOOR MOUNTED TRAY There shall be 1 floor mounted slide-out tray(s) provided.	X	
Each tray shall have 2.00" high sides and a minimum capacity rating of 500 lb. in the extended position.	X	
Each tray shall be constructed of aluminum with a dual action finish	X	
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.	X	
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. 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.	X	
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.	X	
The location(s) shall be B1.	X	

	Meets Request	
	Yes	No
DRAWER ASSEMBLY There shall be a total of 1 cabinet with 6 drawers provided. The cabinet shall be installed as wide as possible in the LS5 compartment.	X	
All drawers in the cabinet shall be the same width and depth. The drawers in this cabinet shall be 21.00" deep and shall be as wide as possible up to a maximum of 36.00" wide. A full-width 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.	X	
The height of each drawer, starting with the first drawer at the top of the cabinet shall be: • The first drawer shall have a clear height of 2.00" with a face plate that is 3.00". • The second drawer shall have a clear height of 2.75" with a face plate that is 3.00". • The third drawer shall have a clear height of 2.75" with a face plate that is 3.00". • The fourth drawer shall have a clear height of 2.75" with a face plate that is 3.00". • The fifth drawer shall have a clear height of 2.75" with a face plate that is 3.00". • The sixth drawer shall have a clear height of 2.75" with a face plate that is 3.00".	X	
Each drawer shall have a maximum capacity of 250 lb.	X	
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 shall completely enclose all of the drawers.	X	
PARTITION, TRANSVERSE REAR COMPARTMENT 2 partitions shall be bolted in place to separate the left and right-side rear compartments from the rear tailboard compartment. The partition shall be body material painted spatter gray.	X	
Each partition shall be permanently sealed with caulk to ensure no water shall leak to or from the adjoining compartments.	X	
MATTING, COMPARTMENT SHELVING Dri-Deck rubber compartment matting shall be provided in 9 (9) shelves. The locations are, to be determined.	X	
The Dri-Deck shall be black, and .562" thick with holes in the decking to allow air to flow.	X	

	Meets Request	
	Yes	No
RUB RAIL The bottom edge of the side compartments shall be trimmed with a brushed stainless steel rub rail. The rub rail shall be 2.00" high and extend 1.00" away from the body, with slanted ends to provide a pleasing appearance.	X	
These rub rails shall not be an integral part of the body construction, which allows replacement in the event of damage.	X	
BODY FENDER CROWNS Polished stainless steel fender crowns shall be provided around the rear wheel openings.	X	
A fender liner constructed of unpainted brushed stainless shall be provided to avoid paint chipping. The liners shall be removable to aid in the maintenance of rear suspension components.	X	
A dielectric barrier shall be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion	X	
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.	X	
HARD SUCTION HOSE 2 lengths of 6.00" clear corrugated PVC hard suction hose, 8' in length, shall be provided. The hose shall be equipped with a long handle female coupling on 1 end and a rocker lug male coupling on the other end. Couplings shall be hard coated aluminum.	X	
HOSE TROUGH A quantity of 2 hard suction hoses shall be carried in troughs, mounted side by side inside the hose bed, located on the left side and on the right side of hose bed. Troughs shall be constructed of stainless steel. This option shall include a permanent box divider to be used as the side of this compartment.		X
A hook and loop strap shall be provided at the rear of the troughs to contain the hard suction hose. A section of hose bed grating is provided above the storage area	X	
HANDRAILS The handrails shall be 1.25" diameter knurled aluminum to provide a positive gripping surface.	X	

	Meets Request	
	Yes	No
Chrome plated end stanchions shall support the handrail. Plastic gaskets shall be used between end stanchions and any painted surfaces.	X	
Drain holes shall be provided in the bottom of all vertically mounted handrails.	X	
Handrails shall be provided to meet NFPA 1901 section 15.8 requirements. The handrails shall be installed as noted on the sales drawing.	X	
HANDRAILS The handrails shall be 1.25" diameter knurled aluminum to provide a positive gripping surface.	X	
Chrome plated end stanchions shall support the handrail. Plastic gaskets shall be used between end stanchions and any painted surfaces.	X	
Drain holes shall be provided in the bottom of all vertically mounted handrails.	X	
Handrails shall be provided to meet NFPA 1901 section 15.8 requirements. The handrails shall be installed as noted on the sales drawing.	X	
1 vertical handrail shall be located on each rear bulkhead.	X	
ADDITIONAL HANDRAIL 2 handrails, 8.00" long, shall be mounted high on the forward portion of the body.	X	
AIR BOTTLE STORAGE (DOUBLE) A quantity of 2 air bottle compartments, 15.25" wide x 7.75" tall x 26.00" deep, shall be provided on the right side forward of the rear wheels and on the right-side rearward of the rear wheels. A brushed stainless-steel door with a Southco raised trigger C2 chrome lever latch shall be provided to contain the air bottle. The door shall be sized to allow access to only one bottle at a time. A dielectric barrier shall be provided between the door hinge, hinge fasteners and the body sheet metal. Inside the compartment, black rubber matting shall be provided.	X	
EXTINGUISHER STORAGE A quantity of 2 extinguisher compartments shall be provided on the left side forward of the rear wheels and on the left-side rearward of the rear wheels. The extinguisher compartment shall be in the form of a 9.00" square tube and of adequate depth to accommodate different size extinguishers. A brushed stainless-steel door with a Southco raised trigger C2 chrome lever latch shall be provided to contain the extinguisher. A dielectric barrier shall be provided between the door hinge, hinge fasteners, and the body sheet metal.	X	

	Meets Request	
	Yes	No
Inside the compartment, black rubber matting shall be provided. There shall also be a drain hole for each compartment.	X	
EXTENSION LADDER There shall be a 24' two-section aluminum Duo-Safety Series 900-A extension ladder provided.	X	
ROOF LADDER There shall be a 14' aluminum Duo-Safety Series 775-A roof ladder provided.	X	
HYDRAULIC LADDER RACK Ground ladders shall be mounted above the right side of the hose body in a specially designed swing-down cradle. This cradle shall be electric/hydraulic operated. The system design shall have been life cycle tested for dependable service.	X	
An independent hydraulic pump powered by a 12-volt electric motor shall operate the hydraulics. Operation of the hydraulic system for the ladder rack by an engine-powered pump shall be unacceptable. The hydraulic pump and reservoir shall be accessible from the ground through a stainless-steel inspection door.	X	
The ladder rack shall incorporate two hydraulic rotary actuators, one each located inside the front compartment and the rear compartment. The actuators shall be completely enclosed within each compartment to eliminate any pinch points while operating the ladder rack. Lifting arms shall be attached outside the compartment body to the front and rear actuator. A center-lifting arm built into the compartment space is unnecessary and is unacceptable.	X	
The rack can be designed in certain situations to provide lifting capabilities up to 500 lb. The maximum height of the rack from the ground in the lowered position shall be no more than 47.00".	X	
The electric control panel shall have a master switch on/off switch, an actuation switch, an operation indicator light, and operation instructions. The electric controls shall be located at the pump panel adjacent to the ladder rack in such a manner to allow the operator full view of the area into which the ladders shall be lowered.	X	
2 air operated safety locks shall be furnished to securely maintain the ladder bracket assembly in the travel position. These air operated safety locks shall be controlled from the ladder rack control panel.	X	
A polished stainless-steel enclosure shall be provided over the hydraulic ladder rack locks at the front and the rear on the right side to cover the ladder rack locks (2) and provide mounting for any rear warning lights.	X	

	Meets Request	
	Yes	No
Ladders shall be secured to the brackets with 2 locks retaining the roof ladder and the extension ladder. The locks shall be such that when the roof ladder is removed, the clamps can be moved a half turn to hold the extension ladder in place.	X	
LADDER RACK INTERLOCK AND NOT STOWED INDICATOR LIGHT An interlock shall be provided to prevent operation of the ladder rack unless the apparatus parking brake has been activated.	X	
A steady red indicator light shall be located on the cab instrument panel and illuminated when the hydraulic ladder rack is not in the stowed position.	X	
The light shall be labeled "Ladder Rack". In addition, the "Do Not Move Apparatus" light located in the cab shall be activated when the hydraulic ladder rack is not in the stowed position.	X	
HYDRAULIC LADDER RACK DEPLOYED LIGHTS There shall be 2 Truck-Lite catalog number 15***, 1.20" high x 2.49" wide x 0.94" deep lights with chrome trim, amber flashing LEDs and provided per the following: • 1 light installed on the front of the hydraulic ladder rack • 1 light Installed on the rear of the hydraulic ladder rack • The warning light lens colors to be the same as the LEDs	X	
The lights shall be activated when the battery switch is on and the hydraulic ladder rack is not in the stowed position.	X	
FOLDING LADDER 1 10.00' aluminum, Series 585-A, Duo-Safety folding ladder shall be installed.	X	
BACKBOARD COMPARTMENT 1 backboard compartment shall be mounted to the underside of the bright aluminum treadplate hose bed cover on the right side.	X	
The compartment(s) shall be fabricated of bright aluminum treadplate and shall have a bright aluminum treadplate drop-down door at the rear with Southco C2 chrome flush latch. The compartment(s) shall be sized for a backboard 72.00" long x 18.00" wide x 2.00" high.	X	
6' PIKE POLE 1 pike pole 6' long RH-6DA Nupla ventilation hook(s) with an aluminum D-grip handle shall be provided and located in the D-Handle storage behind the ladder rack.	X	

	Meets Request	
	Yes	No
PIKE POLE PROVIDED BY FIRE DEPARTMENT NFPA 1901, 2016 edition, Section 5.9.4 requires 1, 8 ft or longer pike pole mounted in a bracket fastened to the apparatus.	X	
The pike pole is not on the apparatus as manufactured. The fire department shall provide and mount the pike pole.	X	
The pike pole(s) shall be a Duo-Safety 10' pike pole	X	
. 6 FT PIKE POLE There shall be 1 Fire Hooks Unlimited, Model RH-6, 6' pike pole(s) with steel shaft and ram knob end provided.	X	
TRASH HOOK STORAGE There shall be 1 stainless steel U-shaped trough(s) provided for storage of D-handle style trash hook(s). The trough(s) shall be installed behind the ladder rack.	X	
PIKE POLE STORAGE Aluminum tubing shall be used for the storage of 2 pike poles and shall be located in ladder storage compartment. If the head of a pike pole can come in contact with a painted surface, a stainless-steel scuff plate shall be provided.	X	
LABEL There shall be 2 label(s) provided one each side of the rear body, above the lubrication manifolds with the following information "Rear Shackle & Pin Lubrication".	X	
STEP A folding step shall be provided on the left side front bulkhead. The step shall be a bright finished, non-skid step with a black tread coating on the stepping surface. The step shall incorporate an LED light to illuminate the stepping surface. The step can be used as a hand hold with two openings wide enough for a gloved hand.	X	
REAR FOLDING STEPS Bright finished; non-skid Signature 4 folding steps shall be provided at the rear. Each step shall incorporate an LED light to illuminate the stepping surface. The steps can be used as a hand hold with one opening wide enough for a gloved hand.	X	
I-ZONE BRACKETS - WILDLAND STYLE A pair of I-Zone brackets shall be provided and mounted at the rear of the apparatus, built into either side of the rear hose deflector step. The brackets shall be designed with adequate reinforcement to eliminate flexing of the body (oil canning) and not interfere with rear facing lights while carrying hose.	X	

	Meets Request	
	Yes	No
The design of these I-Zone brackets shall have a 45-degree receiver and a removable extension piece that fits into the brackets for carrying hose.	X	
PUMP COMPARTMENT The pump compartment shall be separate from the hose body and compartments so that each may flex independently of the other. The pump compartment shall be constructed of the same material as the body compartmentation.	X	
The pump compartment substructure shall be a fabricated assembly of steel tubing, angles and channels which supports both the fire pump and the side running boards.	X	
The pump compartment shall be mounted on the chassis frame rails with rubber biscuits in a four-point pattern to allow for chassis frame twist.	X	
Pump compartment, pump, plumbing and gauge panels shall be removable from the chassis in a single assembly.	X	
PUMP MOUNTING Pump shall be mounted to a substructure which shall be mounted to the chassis frame rail using rubber isolators. The mounting shall allow chassis frame rails to flex independently without damage to the fire pump.	X	
PUMP CONTROL PANELS (LEFT SIDE CONTROL) All pump controls and gauges shall be located at the left side of the apparatus and properly identified.	X	
Layout of the pump control panel shall be ergonomically efficient and systematically organized.	X	
The pump operator's control panel shall be removable in 2 main sections for ease of maintenance:	X	
The upper section shall contain sub panels for the mounting of the pump pressure control device, engine monitoring gauges, electrical switches, and foam controls (if applicable). Sub panels shall be removable from the face of the pump panel for ease of maintenance. Below the sub panels shall be located all valve controls and line pressure gauges.	X	
The lower section of the panel shall contain all inlets, outlets, and drains.	X	
All push/pull valve controls shall have 1/4 turn locking control rods with polished chrome plated zinc tee handles. Guides for the push/pull control rods shall be chrome plated	X	

	Meets Request	
	Yes	No
zinc castings securely mounted to the pump panel. Push/pull valve controls shall be capable of locking in any position. The control rods shall pull straight out of the panel and shall be equipped with universal joints to eliminate binding.		
IDENTIFICATION TAGS		
The identification tag for each valve control shall be recessed in the face of the tee handle.	X	
All discharge outlets shall have color coded identification tags, with each discharge having its own unique color. Color coding shall include the labeling of the outlet and the drain for each corresponding discharge.	X	
All line pressure gauges shall be mounted directly above the corresponding discharge control tee handles and recessed within the same chrome plated casting as the rod guide for quick identification. The gauge and rod guide casting shall be removable from the face of the pump panel for ease of maintenance. The casting shall be color coded to correspond with the discharge identification tag.	X	
All remaining identification tags shall be mounted on the pump panel in chrome plated bezels.	X	
The pump panel on the right side shall be removable with lift and turn type fasteners.	X	
Trim rings shall be installed around all inlets and outlets.	X	
PUMP		
Pump shall be a Waterous CMU 1500 gpm 2 stage midship mounted centrifugal type.	X	
Pump shall be the class "A" type.	X	
Pump shall deliver the percentage of rated discharge at pressures indicated below:	X	
- 100% of rated capacity at 150 psi net pump pressure.		
-70% of rated capacity at 200 psi net pump pressure.		
-50% of rated capacity at 250 psi net pump pressure.		
Pump body shall be close-grained gray iron, bronze fitted, and horizontally split in 2 sections for easy removal of the entire impeller shaft assembly (including wear rings).	X	
Pump shall be designed for complete servicing from the bottom of the truck, without disturbing the pump setting or apparatus piping.	X	

	Meets Request	
	Yes	No
Pump case halves shall be bolted together on a single horizontal face to minimize a chance of leakage and facilitate ease of reassembly. No end flanges shall be used.	X	
Discharge manifold of the pump shall be cast as an integral part of the pump body assembly and shall provide a minimum of 3, 3.50" openings for flexibility in providing various discharge outlets for maximum efficiency.	X	
The 3, 3.50" openings shall be located as follows: 1 outlet to the right of the pump, 1 outlet to the left of the pump, and 1 outlet directly on top of the discharge manifold.	X	
Impeller shaft shall be stainless steel, accurately ground to size. It shall be supported at each end by sealed, anti-friction ball bearings for rigid precise support. Impeller shall have flame plated hubs assuring maximum pump life and efficiency despite any presence of abrasive matter in the water supply.	X	
Bearings shall be protected from water and sediment by suitable stuffing boxes, flinger rings, and oil seals. No special or sleeve type bearings shall be used.	X	
PUMP PACKING Stuffing boxes shall be of the conventional 2 piece, split-gland type, to permit adjustment or replacement of Grafoil packing without disturbing the pump. Water shall be fed into stuffing box lantern rings for proper lubrication and cooling when the pump is operating.	X	
Lantern rings shall be located at the inner ends of the stuffing boxes, to avoid having to remove them when replacing pump packing.	X	
Wear rings shall be bronze and easily replaceable to restore original pump efficiency and eliminate the need to replace the entire pump casing due to wear.	X	
PUMP TRANSMISSION The pump transmission shall be made of a 3-piece, aluminum, horizontally split casing. Rower transfer to pump shall be through a high strength Morse HY-VO silent drive chain. By the use of a chain rather than gears, 50% of the sprocket shall be accepting or transmitting torque, compared to 2 or 3 teeth doing all the work.	X	
Drive shafts shall be 2.35" diameter hardened and ground alloy steel and supported by ball bearings. The case shall be designed to eliminate the need for water cooling.	X	

	Meets Request	
	Yes	No
PUMPING MODE An interlock system shall be provided to ensure that the pump drive system components are properly engaged so that the apparatus can be safely operated. The interlock system shall be designed to allow stationary pumping only.	X	
AIR PUMP SHIFT Pump shift engagement shall be made by a 2-position sliding collar, actuated pneumatically (by air pressure), with a 3-position air control switch located in the cab. A manual back-up shift control shall also be located on the left side pump panel.	X	
2 indicator lights shall be provided adjacent to the pump shift inside the cab. 1 green light shall indicate the pump shift has been completed and be labeled "pump engaged". The second green light shall indicate when the pump has been engaged, and that the chassis transmission is in pump gear. This indicator light shall be labeled "OK to pump".	X	
The pump shift shall be interlocked to prevent the pump from being shifted out of gear when the chassis transmission is in gear to meet NFPA requirements.	X	
The pump shift control in the cab shall be illuminated to meet NFPA requirements.		
TRANSMISSION LOCK-UP The direct gear transmission lock-up for the fire pump operation shall engage automatically when the pump shift control in the cab is activated.	X	
AUXILIARY COOLING SYSTEM 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. The heat exchanger shall be a separate unit. It shall be installed in the pump or engine compartment with the control located on the pump operator's control panel. The exchanger shall be plumbed to the master drain valve.	X	
TRANSFER VALVE Transfer valve design shall be of the latest ball type, of all bronze construction and incorporate a hydraulically balanced seal assembly, minimizing leakage around the ball and assuring maximum pump efficiency.	X	
Transfer valve shall operate smoothly and without sticking, even when exposed to sandy or dirty water.	X	

	Meets Request	
	Yes	No
Transfer valve shall be operated electrically with a control switch mounted on the pump operator's control panel, with 2 indicator lights which shall indicate "pressure" or "volume".	X	
Transfer valve shall have the ability to change from series (pressure) operation to parallel (volume) operation without reducing the operating speed of the engine regardless of the operating pressure of the pump, thus always maintaining an effective fire stream at the nozzle.	X	
A manual override shall be provided in the event of electrical malfunction. The manual override system operates with the use of a removable hand crank located at the left side pump panel.		
Cylindrical type transfer valves shall not be acceptable.	X	
INTAKE RELIEF VALVE - PUMP		
There shall be 1 Elkhart Style 40 relief valve(s) installed on the suction side of the pump preset at 150 psig.	X	
The relief valve(s) shall have a working range of 75 psi to 250 psi.	X	
The outlet shall terminate below the frame rails with a 2.50" National Standard hose thread adapter and shall have a "do not cap" warning tag.	X	
The relief valve pressure control shall be located behind the right-side pump panel with a stainless-steel access door.	X	
PRESSURE CONTROLLER		
A waterous adjustable relief valve, specially designed for fire service shall be provided.	X	
Valvealve shall be installed positive, quick acting, and include an instantaneous on/off control. When in the off position, the relief valve shall functionally be removed from the system. When turned back to the on position, the relief valve shall again monitor and maintain the previous pressure setting.	X	
Control for adjusting pressure shall be elliptical shaped for positive grip.	X	
A pressure transducer shall be installed in the inlet manifold on the pump	X	
An easily removable pilot valve strainer shall be provided and accessible from the pump operator's panel.	X	
2 indicator lights shall be furnished, showing the position of the relief valve.	X	

	Meets Request	
	Yes	No
PRIMER SYSTEM A Waterous electric pump priming system conforming to standards outlined in the current edition of NFPA 1901 shall be furnished with the apparatus.	X	
1 VPO electric motor driven rotary vane primer shall be provided.	X	
1 VAP vacuum activated priming valve shall be plumbed to the main pump.	X	
1 momentary push-button control shall be located at the pump operator's panel.	X	
The push button control system control shall operate an electric priming motor and the priming valve shall automatically open during priming and close when the primer is deactivated.	X	
PUMP MANUALS There shall be a total of 2 pump manuals provided by the pump manufacturer and furnished with the apparatus. The manuals shall be provided by the pump manufacturer in the form of 2 electronic copies. Each manual shall cover pump operation, maintenance, and parts.	X	
PLUMBING, STAINLESS STEEL AND HOSE All inlet and outlet lines shall be plumbed with either stainless steel pipe, hydraulic type hose or synthetic rubber hose reinforced with hi-tensile polyester braid. All hoses shall be equipped with brass or stainless-steel couplings. All stainless-steel hard plumbing shall be a minimum of a schedule 10 wall thickness.	X	
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.	X	
Plumbing manifold bodies shall be ductile cast iron or stainless steel.	X	
All piping lines are to be drained through a master drain valve or shall be equipped with individual drain valves. All drain lines shall be extended with a hose to drain below the chassis frame.	X	
All water carrying gauge lines shall be hydraulic or reinforced poly hose.	X	
All piping, hose and fittings shall have a minimum of a 700 PSI hydrodynamic pressure rating.	X	

	Meets Request	
	Yes	No
FOAM SYSTEM PLUMBING All piping that is in contact with the foam concentrate or foam/water solution shall be stainless steel. The fittings shall be stainless steel or brass. Cast iron pump manifolds will be allowed.	X	
MAIN PUMP INLETS A 6.00" pump manifold inlet shall be provided on each side of the vehicle. The suction inlets shall include removable die cast zinc screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.	X	
SHORT SUCTION TUBE(S) The suction tube(s) on the water pump shall have short suction tube(s) installed to allow for installation of adapters, elbows, or intake valves without excessive overhang.	X	
INLET VALVES WITH INTAKE RELIEF VALVE There shall be 2 Task Force Tips (TFT) AX Series aluminum ball intake valve(s) provided at on the driver and passenger side.	X	
The inlet connection shall be 7HNP (4.0" Threaded Swivel Handle) with a matching cap and the outlet connection shall be NX (6.0" Threaded Swivel). There shall be an eight-position adjustable 30 degree swiveling detent elbow on the inlet side of the ball intake valve.	X	
The ball intake valve shall be controlled with a(n) standard crank on the right side.	X	
If ball intake valve is to be controlled with a manual handwheel, the handwheel shall be controlled with a NFPA compliant slow-close hand wheel. A position indicator shall be provided to allow for a quick visualization of the status of the valve in the open, closed or transition position.	X	
If the ball intake valve is to be electrically controlled, the ball intake valve shall be controlled by a remote panel-mounted push-button switch with LED lights for a quick visualization of the status of the valve in the open, closed or transition position. The push button switch shall be mounted on the pump operator's panel.	X	
The ball intake valve shall be equipped with a slip joint adjustable pressure relief valve. The relief valve shall have a working range of 90 PSI to 300 PSI.	X	
A 3/4" TFT bleeder/drain valve shall be provided on the ball intake valve to exhaust excess air or water from the valve.	X	

	Meets Request	
	Yes	No
For corrosion protection the aluminum casting shall have a hard coat anodized finish, with a powder coated internal and external finish. All the components facing the wet side of the valve shall be constructed from stainless steel.	X	
MAIN PUMP INLET CAP The main pump inlets shall have National Standard Threads with a long handle chrome cap.	X	
VALVES All ball valves shall be Elkhart Unibody series. Seats shall be self-adjusting for minimum operating torque and maximum abrasion resistance. The Elkhart valves shall have an automatic locking feature to hold the ball in any throttle position at any operating pressure. The valve body design shall allow any actuator to be mounted to the body.	X	
The location of the valve for the 2 inlets shall be recessed behind the pump panel.	X	
INLET CONTROL The side auxiliary inlet(s) shall incorporate a quarter-turn ball valve with the control located at the inlet valve. The valve operating mechanism shall indicate the position of the valve.	X	
LEFT SIDE INLET There shall be 1 auxiliary inlet with a 2.50" valve at the left side pump panel, terminating with a 2.50" (F) National Standard hose thread adapter.	X	
The auxiliary inlet shall be provided with a strainer, chrome swivel and plug.	X	
RIGHT SIDE INLET There shall be 1 auxiliary inlet with a 2.50" valve at the right-side pump panel, terminating with a 2.50" (F) National Standard hose thread adapter.	X	
The auxiliary inlet shall be provided with a strainer, chrome swivel and plug.	X	
ANODE, INLET A pair of sacrificial zinc anodes shall be provided in the water pump inlets to protect the pump from corrosion.	X	
INLET BLEEDER VALVE A 0.75" bleeder valve shall be provided for each side gated inlet.	X	
The valves shall be located behind the panel with a "T" swing style handle control extended to the outside of the panel.	X	

	Meets Request	
	Yes	No
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.	X	
The water discharged by the bleeders shall be routed below the chassis frame rails.	X	
TANK TO PUMP The booster tank shall be connected to the intake side of the pump with stainless steel piping and a quarter turn 3.00" full flow line valve with the control remotely located at the operator's panel. Tank to pump line shall run straight (no elbows) from the pump into the front face of the water tank and angle down into the tank sump. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing.	X	
A check valve shall be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank.	X	
TANK REFILL A 2.50" combination tank refill and pump recirculation line shall be provided. The tank refill shall incorporate a quarter-turn ball valve with the control located at the pump operator's panel.	X	
DISCHARGE OUTLET CONTROLS 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.	X	
If a handwheel control valve is used, the control shall be a minimum of a 3.9" diameter stainless steel handwheel with a dial position indicator built into the center of the handwheel.	X	
Any 3.00 inch or larger discharge valve shall be a slow-operating valve in accordance with NFPA 16.7.5.3.	X	
LEFT SIDE DISCHARGE OUTLETS There shall be 2 discharge outlets with a 2.50" valve on the left side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.	X	
LEFT SIDE OUTLET ELBOWS The 2.50" discharge outlets located on the left side pump panel shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45-degree elbow.	X	

	Meets Request	
	Yes	No
The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).	X	
RIGHT SIDE DISCHARGE OUTLETS There shall be 2 discharge outlets with a 2.50" valve on the right side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.	X	
RIGHT SIDE OUTLET ELBOWS The 2.50" discharge outlets located on the right-side pump panel shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45-degree elbow.	X	
The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).	X	
REAR DISCHARGE OUTLET There shall be 2 discharge outlets piped to the rear of the hose bed, 1 each side, installed so proper clearance is provided for spanner wrenches or adapters. Plumbing shall consist of 2.50" piping along with a 2.50" full flow ball valve with the control from the pump operator's panel.	X	
REAR OUTLET ELBOWS The 2.50" discharge outlets located at the rear of the apparatus shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45-degree elbow.	X	
The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).	X	
FRONT OF HOSE BED DISCHARGE OUTLET There shall be 2 discharge outlets located at the front of the hose bed, on 1 each side. Plumbing shall consist of 2.00" piping with a 2.00" full-flow ball valve controlled at the pump operator's panel. The discharges shall terminate with an 1.50" (M) National Standard hose thread adapter.	X	
DISCHARGECAPS/ INLET PLUGS Chrome plated, rocker lug, caps with S/S cables shall be furnished for all discharge outlets 1.00" thru 3.00" in size, besides the pre-connected hose outlets.	X	
Chrome plated, rocker lug, plugs with S/S cables shall be furnished for all auxiliary inlets 1.00" thru 3.00" in size.	X	

	Meets Request	
	Yes	No
The caps and plugs shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).	X	
OUTLET BLEEDERS A .75", quarter turn type, 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.	X	
The valves shall be located behind the panel with a handwheel type control extended to the outside of the side pump panel. Bleeders shall be located in a horizontal line 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.	X	
REDUCER There shall be 2 adapters with 2.50" FNST x 1.50" MNST threads and a 1.50" chrome plated cap installed on the driver and passenger side rear discharges.	X	
DELUGE RISER A 3.00" deluge riser shall be installed above the pump in such a manner that a monitor can be mounted and used effectively. Piping shall be installed securely so no movement develops when the line is charged. The riser shall be gated and controlled at the pump operator's panel.	X	
Any 3.00 inch or larger discharge valve shall be a slow-operating valve in accordance with NFPA 16.7.5.3.	X	
TELESCOPIC PIPING The deluge riser piping shall include an 18.00" Task Force Model XG18 Extend-A-Gun extension.	X	
This extension shall be telescopic to allow the deluge gun to be raised 18.00" increasing the range of operation.	X	
A position sensor shall be provided on the telescopic piping that shall activate the "do not move vehicle" light inside the cab when the monitor is in the raised position.	X	
DELUGE OUTLET SPECIAL INSTRUCTIONS The deluge gun outlet shall be located 113" from the ground.	X	

	Meets Request	
	Yes	No
MONITOR An Akron Model 3423 monitor shall be properly installed on the deluge riser. This monitor shall include both a fixed mounting base and a portable base with 2 clappered 2.5" inlets.	X	
The monitor shall be painted to match the body.	X	
NOZZLE, DELUGE Akron model #2499 Quad Stacked pyrolite deluge tips shall be provided.	X	
The tip sizes shall be 1.375", 1.50", 1.75", and 2.00".	X	
This shall include an Akron 3488 pyrolite stream shaper.	X	
The deluge riser shall have male National Pipe Threads for mounting the monitor.	X	
CROSSLAY HOSE BEDS 2 crosslays with 1.50" outlets shall be provided. Each bed to be capable of carrying 200' of 1.75" double jacketed hose and shall be plumbed with 2.00" i.d. pipe and gated with a 2.00" quarter turn ball valve.	X	
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.	X	
The crosslay controls shall be at the pump operator's panel.	X	
The center crosslay dividers shall be fabricated of 0.25" aluminum and shall provide adjustment from side to side. The divider shall be unpainted with a brushed finish.	X	
Vertical scuff plates constructed of stainless steel shall be provided at the front and rear ends of the bed on each side of vehicle.	X	
Crosslay bed flooring shall consist of removable perforated brushed aluminum.	X	
CROSSLAY/DEADLAY HOSE RESTRAINT There shall be red vinyl end flap provided across each end of the 2 crosslay/deadlay opening(s) to secure the hose during travel. Each vinyl end flap shall be permanently attached at the bottom of the crosslay/deadlay opening(s). They shall be attached with Hook and loop straps fasteners.	X	
CROSSLAY COVER A hinged .19" aluminum treadplate cover shall be installed over the crosslay hose beds. It shall include a latch at each end of the cover to hold it securely in place, a chrome	X	

	Meets Request	
	Yes	No
grab handle at each end for opening and closing the cover and a foam rubber gasket where the cover comes into contact to a painted surface.		
The cover shall be provided with rubber latch hold open device.	X	
The hinge shall be to the front of the hose beds.	X	
CROSSLAY COVER HOLDER - RUBBER LATCH 2 rubber latches shall be provided, 1 each side, to hold the crosslay cover in the open position. A clip shall be mounted each side, on the back of the cab, to allow the rubber latches to hold the cover open.	X	
BOOSTER HOSE REELS 2 Hannay electric rewind aluminum booster hose reels shall be installed over the cargo area, one each side.	X	
A polished stainless-steel roller and guide assembly shall be mounted on each side of the apparatus.	X	
Discharge controls shall be provided at the pump operator's panel. Plumbing to the reels shall consist of 1.50" Aeroquip hose and 1.50" valves.	X	
Reel motors shall be protected from overload with 50-amp automatic reset circuit breakers.	X	
Each hose reel shall include the following rewind controls: • 1 foot actuated, stirrup type, electric rewind control switch installed on the right-side pump panel. • 1 push-button switch provided for each reel.	X	
The stirrup and the 2 push-button switches shall be located in a location to be determined.	X	
Booster hose, 1.00" diameter and 300 feet long, with chrome plated Barway, or equal couplings shall be provided on each reel.	X	
Working pressure of the booster hose shall be a minimum of 800 psi.	X	
Capacity of the hose reels shall be 3 lengths of 1" x 100' hose.	X	
NOZZLE CUP AND BRACKET A Zico nozzle cup and chrome plated mounting bracket shall be provided for storage of the booster reel nozzle.	X	

	Meets Request	
	Yes	No
There shall be 2 provided. The nozzle cup(s) shall have a 3-1/8" inside diameter and shall be located to be determined at final.	X	
FOAM CONCENTRATE PROPORTIONING SYSTEM An electronic direct injection foam system shall be provided as the means for the proportioning of foam concentrate into the water stream. An electronic, fully automatic, variable speed, direct injection, discharge side foam proportioning system shall be provided.	X	
This system shall be a single agent system capable of handling Class A foam concentrates, as well as most Class B foam concentrates.	X	
The foam system shall be plumbed to 5 discharges. The discharges capable of dispensing foam shall be both hose reels, rear crosslay, right side rear discharge, and the left rear hose bed discharge.	X	
The foam proportioning system operation shall be based on a direct measurement of water flows and remain consistent within the specified flow and pressure. The system shall be equipped with a digital electronic control display on the pump panel. Incorporated within the control display shall be a microprocessor, which receives input from the system flow meter while also monitoring the foam concentrate pump output. The microprocessor shall compare the values of the water flow versus the foam flow, to ensure the proportion rate is accurate.	X	
1 paddle wheel shall be installed to monitor all foam discharges.	X	
Push button control for the form proportioning rate shall allow a ratio from .1 percent to 3 percent in .1 percent increments.	X	
The rated capacity of this system shall be 166 gpm at 3 percent and 1000 gpm at .5 percent.	X	
A 5-gpm positive displacement, 3-cylinder plunger type foam pump shall be powered by a 3/4 hp 12 vdc electric motor.	X	
1 check valve shall be installed in the plumbing to prevent foam from contaminating the water pump. The check valve shall be approved by the foam system manufacturer.	X	
FOAM TANK The foam tank shall be an integral portion of the polypropylene water tank. The cell shall have a capacity of 20 gallons of foam with the intended use of Class A foam. The	X	

	Meets Request	
	Yes	No
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.		
FOAM TANK DRAIN The foam tank drain shall be a 1.00" drain valve located inside the pump compartment accessible through a door on the right-side pump panel.	X	
The following drawing(s) shall be provided for approval by the customer.	X	
PUMP OPERATOR'S PANEL DRAWING A detailed drawing to scale of the pump operator's panel shall be provided for the customer to review. The drawing shall include all the gauges, controls, switching, etc.., located on the pump operator's panel. The customer will be allowed to make changes and/or mark-ups to this approval drawing. The fire apparatus manufacturer shall make revisions (If needed) to the drawing per the customer changes and/or mark-ups as long as the changes are physically possible within a specific product line.	X	
The finalized and signed customer approved pump operator's panel drawing shall become part of the contract documents.	X	
Due to the way drain(s), bleeder(s), operational/maintenance tag(s) and NFPA required warning tag(s) are placed on pump panel(s), these items will NOT be shown on any pump panel approval drawing(s). These item(s) will be placed on pump panel(s) at the fire apparatus manufacturer discretion.	X	
REMAINING PUMP PANEL(S) Detailed drawing(s) to scale of the remaining pump panel(s) shall be provided for the customer to review. The drawing(s) shall include all of the gauges, controls, switching, etc.., located on the pump panel(s). The customer will be allowed to make changes and/or mark-ups to these approval drawing(s). The fire apparatus manufacturer shall make revisions (If needed) to the drawing(s) per the customer changes and/or mark-ups as long as the changes are physically possible within a specific product line.	X	
The finalized and signed customer approved pump panel drawing(s) shall become part of the contract documents.	X	
Due to the way drain(s), bleeder(s), operational/maintenance tag(s) and NFPA required warning tag(s) are placed on pump panel(s), these items will NOT be shown on any pump panel approval drawing(s). These item(s) will be placed on pump panel(s) at the fire apparatus manufacturer discretion.	X	

	Meets Request	
	Yes	No
COLOR CODED TAGS A detailed drawing/chart of the colors used on all of the inlet(s) and outlet(s) shall be provided for the customer to review. The customer will be allowed to make changes and/or mark-ups to this approval drawing/chart. The fire apparatus manufacturer shall make revisions (If needed) to the drawing per the customer changes and/or mark-ups as long as the changes are physically possible within a specific product line.	X	
The finalized and signed customer approved drawing/chart of the colors shall become part of the contract documents.	X	
SPECIAL TEXT/VERBIAGE TAGS A detailed drawing/chart of the text/verbiage used on all of the inlet(s) and outlet(s) shall be provided for the customer to review. The customer will be allowed to make changes and/or mark-ups to this approval drawing/chart. The fire apparatus manufacturer shall make revisions (If needed) to the drawing per the customer changes and/or mark-ups as long as the changes are physically possible within a specific product line.	X	
The finalized and signed customer approved drawing/chart of the text/verbiage shall become part of the contract documents.	X	
PUMP PANEL CONFIGURATION The pump panel configuration shall be arranged and installed in an organized manner that shall provide user-friendly operation.	X	
PUMP AND GAUGE PANEL The pump and gauge panels shall be constructed of stainless steel with a brushed finish. A polished aluminum trim molding shall be provided on both sides of the pump panel.	X	
PUMP ACCESS		
Right Side Panel The right-side upper pump panel shall be removable.	X	
Panel Fastener The removable panels shall be secured with chrome swell latch.	X	
The left side pump panels shall be attached with screws.	X	
The right-side lower pump panel (drain bank) shall be attached with screws.	X	

	Meets Request	
	Yes	No
PUMP COMPARTMENT LIGHTS There shall be 2 TecNiq, part number E18-LC00-1, 800 lumens 2.50" high x 4.50" long LED light(s) provided inside the pump enclosure.	X	
The lights shall be activated when the battery switch is on and by a lighted indicator switch on the pump panel. The switch to be labeled Pump Maintenance Light.	X	
The following shall be provided on the pump and gauge panels in a neat and orderly fashion:	X	
- Class 1 Enfo 4 System: With LED display of the engine oil pressure, engine temperature and engine rpm. A warning alarm shall be provided for these items.	X	
- Tachometer: Electric		
- Voltmeter		
Also provided at the pump panel shall be the following:		
- Master Pump Drain Control		
ENGINE THROTTLE A Fire Research (FRC) InfinityPRO model ETA400 series remote engine throttle shall be installed on the pump operator's panel. The case and control knob shall be machined from anodized aluminum, waterproof, and have dimensions not to exceed 2.50" diameter and 4.375" deep. The control knob shall be 2.00" in diameter with a serrated grip, no mechanical stops, and have a red idle push button in the center.	X	
The remote engine throttle shall set the engine RPM to idle when the pump engaged interlock signal is recognized regardless of the control knob position. It shall use optical technology to detect the direction and speed of the control knob when it is rotated.	X	
The control knob shall be programmed to be used in the clockwise rotation to increase engine speed and counterclockwise to decrease engine speed.	X	
THROTTLE READY GREEN INDICATOR LIGHT There shall be a green indicator light with label installed on the pump operators' panel that is activated when the pump is in Throttle Ready mode.	X	
OK TO PUMP INDICATOR LIGHT There shall be a green indicator light installed on the pump operators' panel that is activated when the pump is in Ok to Pump mode.	X	

	Meets Request	
	Yes	No
FUEL GAUGE A fuel gauge shall be provided.	X	
AIR HORN BUTTON An air horn control button shall be provided at the pump operator's control panel. This button shall be red in color and properly labeled and put within easy reach of the operator.	X	
STAINLESS STEEL SPEAKER GRILLE There shall be 2 polished stainless-steel grille/s, for a radio speaker/s, provided and installed on the front bulkhead of the body on the pump panel.	X	
The grille shall be constructed with automotive type louvers, so rain and road splash are deflected. The speaker size shall be determined at pre-construction.	X	
RADIO SPEAKER There shall be 2 Atkinson Dynamics, Model ADSF-25-Z, 25-Watt, flush mount speakers shall be provided and mounted at the pump panel. There shall be an on/off rocker switch located next to the speakers. The wiring from the switch shall be terminated at in a location to be determined.	X	
VACUUM AND PRESSURE GAUGES The pump vacuum and pressure gauges shall be dry and manufactured by Ashcroft. The gauges shall be a 1009 series of gauge with the "Plus" needle dampener option installed to prevent needle bounce. The gauge case, ring and bourdon tube shall be S/S.	X	
The gauges shall be a minimum of 6.00" in diameter and shall have white faces with black lettering and a black needle. A "Pierce" logo shall be located in lower portion of the dial on the gauge face. The gauges shall have a pressure range of 30.00" 0-600 psi.	X	
The pump pressure and vacuum gauges shall be installed adjacent to each other at the pump operator's control panel.	X	
Test port connections shall be provided at the pump operator's panel and properly labeled. 1 shall be connected to the intake side of the pump, and the other to the discharge side of the pump. They shall have 0.25 in. standard pipe thread connections and polished stainless-steel plugs.	X	

	Meets Request	
	Yes	No
LINE/PRESSURE GAUGES The individual "line" pressure gauges shall be dry and manufactured by Ashcroft. The gauges shall be a 1009 series of gauge with the "Plus" needle dampener option installed to prevent needle bounce. The gauge case, ring and bourdon tube shall be S/S.	X	
The gauges shall be a minimum of 2.50" in diameter and shall have white faces with black lettering and an Orange needle. A "Pierce" logo shall be located in lower portion of the dial on the gauge face. The gauge shall have a pressure range of 0-600 psi.	X	
The individual line pressure gauge(s) will be installed as close to the discharge outlet control as practical and properly labeled.	X	
WATER LEVEL GAUGE An Ernst sight tube water level indicator shall be mounted on the gauge panel with an unrestricted view for the operator.	X	
Gauge shall have an unbreakable Lexan tube.	X	
FOAM LEVEL GAUGE An electronic foam level gauge shall be provided on the operator's panel that registers foam level by means of 5 colored LED lights. The lights shall be durable, ultra-bright 5 LED design viewable through 180 degrees. The foam level indicators shall be as follows: • 100 percent = Green • 75 percent = Yellow • 50 percent = Yellow • 25 percent = Yellow • Refill = Red	X	
The light shall flash when the level drops below the given level indicator to provide an eighth of a tank indication. To further alert the pump operator, the lights shall flash sequentially when the foam tank is empty.	X	
The level measurement shall be based on the sensing of head pressure of the fluid in the tank.	X	
The display shall be constructed of a solid plastic material with a chrome plated die cast bezel to reduce vibrations that can cause broken wires and loose electronic components. The encapsulated design shall provide complete protection from foam and environmental elements. An industrial pressure transducer shall be mounted to the	X	

	Meets Request	
	Yes	No
outside of the tank. The display shall be able to be calibrated in the field and shall measure head pressure to accurately show the tank level.		
LIGHT SHIELD There shall be an aluminum treadplate stepping surface no less than 8.00" deep and properly reinforced to support a man's weight, installed over the pump operator's panel.	X	
• There shall be at least 2 Whelen part number 01-066D068-00 12-volt DC lights with white LEDs and black trim installed under the step to illuminate the controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus and the equipment provided on it. These lights shall be activated by the pump panel light switch. Additional lights shall be included every 18.00" depending on the size of the pump house.	X	
• There shall be 1 Whelen part number 01-066D068-00 12-volt DC light with white LEDs and black trim installed under this same step that is activated when the pump is shifted into gear from inside the cab.	X	
There shall be a light activated above the pump panel light switch when the parking brake is applied. This is to afford the operator some illumination when first approaching the control panel.	X	
There shall be 1 TecHiq Model E10, 1.39" high x 6.39" wide step light with white LEDs and 45-degree stainless steel bracket provided above this step. The step light shall be activated by the pump panel light switch.	X	
There shall be 2 hand holds cut into the top of the stepping surface, 1 near the front and 1 near the rear of the shield.	X	
ADDITIONAL STEP/LIGHT SHIELD There shall be an aluminum treadplate stepping surface no less than 8.00" deep and properly reinforced to support a man's weight, installed over the right-side pump panel with the following components:	X	
• There shall be at least 2 Whelen part number 01-066D068-00, 12-volt DC lights with white LEDs and black trim installed under the step to illuminate the controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus and the equipment provided on it. The lights shall be activated by the pump panel light switch. Additional lights will be included every 18.00" depending on the size of the pump house.	X	

	Meets Request	
	Yes	No
There shall be 1 TecNiq Model E10, 1.39" high x 6.39" long 12-volt DC step light with white LEDs and 45-degree stainless steel bracket provided above this step. The step light shall be activated by the pump panel light switch.	X	
There shall be 2 hand holds cut into the top of the stepping surface, 1 near the front and 1 near the rear of the shield.	X	
MICROPHONE & SPEAKER COMPARTMENT There shall be 1 special size microphone and speaker compartments, with a polished stainless-steel door, furnished adjacent to the pump operator's panel. Compartment size shall be 9"Wide x 12" High x 8" Deep.	X	
AIR HORN SYSTEM 1 Buell, Model 1063, air horn shall be recessed in the front bumper. The horn system shall be piped to the air brake system wet tank utilizing 0.38" tubing. A pressure protection valve shall be installed in-line to prevent loss of air in the air brake system.	X	
Air Horn Location The air horns shall be located on each side of the bumper, outside of the frame rails.	X	
Air Horn Control The air horn(s) shall be activated by the following: • Steering wheel horn ring with electric/air horn selector switch	X	
AIR HORN CONTROL The air horns shall be programmed to default when the ignition is "ON".	X	
ELECTRONIC SIREN There shall be a Federal, Model EQ2B-200, electronic siren with noise canceling microphone provided.	X	
This siren to be active when the battery switch is on.	X	
Electronic siren head shall be recessed in the driver side center switch panel.	X	
ELECTRONIC SIREN CONTROL The electronic siren shall be activated by the following: • The left side foot switch.	X	

	Meets Request	
	Yes	No
SPEAKERS There shall be 2 Federal Signal DynaMax®, Model ES100, 100-watt speakers provided. The speakers shall use a Federal Signal, Model ESFMT-EF, recess mount with stainless steel grille. Each speaker shall be connected to the siren amplifier.	X	
The speakers shall be recessed in each side of the front bumper, inside of the frame rails.	X	
AUXILIARY MECHANICAL SIREN There shall be a Federal Signal Model Q2B mechanical siren furnished and installed in the front of the apparatus.	X	
The Q2B shall be chrome finish.	X	
The siren shall have a 2-gauge cable connected to a power solenoid that is connected by a 2-gauge cable ran battery direct to the primary chassis batteries and shall be labeled Q2B+ at the battery. The power solenoid shall only be enabled when the emergency master switch is on.	X	
The siren shall have a 2-gauge ground wire connected to the chassis battery stud. The cable shall be labeled Q2B- at the battery.	X	
When the chassis battery switch is on, and the emergency master switch is on, the Q2B siren shall be activated by the following:	X	
The mechanical siren shall be recessed in the front bumper on the left side. The siren shall be supported by the bumper framework.	X	
MECHANICAL SIREN CONTROL The mechanical siren shall be activated by the following: • Left side foot switch. • Right side foot switch.	X	
A momentary chrome push button switch shall be included in the right-side dash panel to activate the siren brake.	X	
VERTICAL STYLE FOOT SWITCH BRACKET There shall be 1 vertical style bracket provided at the on floor on DS forward of Q2B foot switch side on cab the floor. The bracket shall be large enough to hold 1-foot switch.	X	

	Meets Request	
	Yes	No
FRONT ZONE UPPER WARNING LIGHTS There shall be a 72.00" Whelen® Freedom™ IV LED lightbar mounted on the cab roof.	X	
The lightbar shall include the following: • 1 red flashing LED module in the left side rear corner position. • 1 dual alley flashing LED module in the left side end position. • 1 red flashing LED module in the left side front corner position. • 1 red flashing LED module in the left side first front position. • 1 red flashing LED module in the left side second front position. • 1 red flashing LED module in the left side third front position. • 1 red flashing LED module in the left side fourth front position. • 1 white flashing LED module in the left side fifth front position. • 1, 795 LED traffic light controller set to national standard high priority in the center positions. • 1 white flashing LED module in the right side fifth front position. • 1 red flashing LED module in the right side fourth front position. • 1 red flashing LED module in the right side third front position. • 1 red flashing LED module in the right side second front position. • 1 red flashing LED module in the right side first front position. • 1 red flashing LED module in the right-side front corner position. • 1 dual alley flashing LED module in the right-side end position. • 1 red flashing LED module in the right-side rear corner position.		
There shall be left side and right-side red lenses with clear alley lights.	X	
The following switches may be an installed in the cab on the switch panel to control the lightbar: • a switch to control the flashing LED modules. • a switch to control the left side alley LED module. • a switch to control the right-side alley LED module. • the traffic light controller with the roof light switch. • no momentary switch to activate the traffic light controller.	X	
The white flashing LED modules, dual alley LED Flashing Modules and the traffic light controller shall be disabled when the parking brake is applied.	X	

	Meets Request	
	Yes	No
The dual alley LED Module to come on steady burn with scene lights.	X	
The 8 red flashing LED modules in the front positions and the alley LED modules may be load managed when the parking brake is applied.	X	
SIDE WARNING LIGHTS		
There shall be 2, 21.50" Whelen Freedom IV LED lightbars mounted on the roof, 1 on each side, over the cab doors.	X	
Each lightbar shall include the following: • 1 red flashing LED module in the outside rear corner position. • 1 red flashing LED module in the rear outside position. • 1 red flashing LED module in the front outside position. • 1 red flashing LED module in the outside front corner position.	X	
There shall be lenses that are the same color as the LEDs included on the lightbar.	X	
There shall be a switch in the cab on the switch panel to control the lightbars.	X	
These lights may be load managed when the parking brake is applied.	X	
FRONT ZONE LOWER LIGHTS There shall be 4 Whelen®, LED lights installed on the cab face above the headlights, in a common bezel matching the headlamp bezel per the following: • 1 Model M6**, 4.31" high x 6.75" long x 1.38" deep light installed in the outside position on the driver's side. The driver's side front outside warning light to be red. • 1 Model 6RB**, 4.18" high x 6.56"" long x 3.43" deep light installed in the inside position on the driver's side. The driver's side front inside warning light to be red. • 1 Model 6RB**, 4.18" high x 6.56"" long x 3.43" deep light installed in the inside position on the passenger's side. The passenger's side front inside warning light to be red. • 1 Model M6**, 4.31" high x 6.75" long x 1.38" deep light installed in the outside position on the passenger's side. The passenger's side front outside warning light to be red.	X	
The lens colors shall be the same color as the LED's.	X	
There shall be a switch located in the cab on the switch panel to control both sets of lights.	X	

	Meets Request	
	Yes	No
The inside lights may be load managed if colored or disabled if white when the parking brake is applied.	X	
HEADLIGHT FLASHER The high beam headlights shall flash alternately between the left and right side.	X	
There shall be a switch installed in the cab on the switch panel to control the high beam flash. This switch shall be live when the battery switch and the emergency master switches are on.	X	
The flashing shall automatically cancel when the hi-beam headlight switch is activated or when the parking brake is set.	X	
SIDE ZONE LOWER LIGHTING There shall be 6 Whelen®, Model M6**, 4.31" high x 6.75" long x 1.37" deep flashing LED warning lights with chrome trim installed per the following: • 2 lights located, 1 each side on the bumper extension. The driver's side, side front light to include red warning LEDs and the passenger's side, side front light to include red warning LEDs. • 2 lights located, 1 each side of cab rearward of crew cab doors. The driver's side, side middle light to include red warning LEDs and the passenger's side, side middle light to include red warning LEDs. • 2 lights located, 1 each side above rear wheels. The driver's side, side rear light to include red warning LEDs and the passenger's side, side rear light to include red warning LEDs. • The warning light lens colors to be the same as the LEDs. There shall be a switch in the cab on the switch panel to control the lights.	X	
SIDE ZONE LOWER WARNING LIGHT FLASH PATTERN ADJUSTMENT The flash pattern of the 6 Whelen® M6** light(s) located all side warning lights shall be adjusted to CometFlash®75 L/R, pattern number 13.	X	
REAR ZONE LOWER LIGHTING There shall be 2 Whelen®, Model M6*C LED flashing warning lights with chrome trim located at the rear of the apparatus. • The driver's side rear light to be red • The passenger's side rear light to be red	X	
The lenses shall be same color as the LED's.	X	

	Meets Request	
	Yes	No
There shall be a switch located in the cab on the switch panel to control the lights.	X	
REAR BODY WARNING LIGHT FLASH PATTERN ADJUSTMENT The flash pattern of the 4 Whelen® M6** light(s) located at the rear of the apparatus, All Rear emergency lights shall have the flash pattern number 11, CometFlash 75 selected.	X	
REAR OF HOSEBED WARNING LIGHTS There shall be 2 Whelen, Model B63M7**, Super LED beacons with Model M7**, lower LED flashing lights provided in a single polished aluminum housing at the rear of the truck.	X	
There shall be 1 installed on the driver's side with the lower light to the rear: • The driver's side beacon to include red LED's. • The rear lower light on the driver's side to be red.	X	
There shall be 1 installed on the passenger's side with the lower light to the rear: • The passenger's side beacon to include red LED's. • The rear lower light on the passenger's side to be amber.	X	
The color of the lenses for all the LED's to be the same color as the LED's.	X	
There shall be a switch located in the cab on the switch panel to control the lights.	X	
The lower light may be load managed when the parking brake is applied.	X	
ELECTRICAL SYSTEM GENERAL DESIGN FOR ALTERNATING CURRENT The following guidelines shall apply to the 120/240 VAC system installation:	X	
General Any fixed line voltage power source producing alternating current (ac) line voltage shall produce electric power at 60 cycles plus or minus 3 cycles.	X	
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).	X	
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.	X	
Grounding		

	Meets Request	
	Yes	No
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.	X	
An equipment grounding means shall be provided in accordance with Section 250-91 (Grounding Conductor Material) of the NEC.	X	
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.	X	
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.	X	
All power source system mechanical and electrical components shall be sized to support the continuous duty nameplate rating of the power source.	X	
Operation 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.	X	
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	X	
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 following information: • • Rated voltage(s) and type (ac or dc) • • Phase • • Rated frequency • • Rated amperage • • Continuous rated watts • • Power source engine speed	X	

	Meets Request	
	Yes	No
Direct drive (PTO) and portable generator installations shall comply with Article 445 (Generators) of the NEC.	X	
Overcurrent protection 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.	X	
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).	X	
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).	X	
Wiring Methods Fixed wiring systems shall be limited to the following: • 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)	X	
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. • 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	X	
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.	X	
Wiring Identification 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.	X	

	Meets Request	
	Yes	No
Wet Locations 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.	X	
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.	X	
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.	X	
Dry Locations 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.	X	
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.	X	
Listing 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.	X	
Electrical System Testing The wiring and associated equipment shall be tested by the apparatus manufacturer or the installer of the line voltage system.	X	
The wiring and permanently connected devices and equipment shall be subjected to a dielectric voltage withstand test of 900-volts for 1 minute. The test shall be conducted between live parts and the neutral conductor, and between live parts and the vehicle frame with any switches in the circuit(s) closed. This test shall be conducted after all body work has been completed.	X	
Electrical polarity verification shall be made of all permanently wired equipment and receptacles to determine that connections have been properly made.	X	
Operational Test per Current NFPA 1901 Standard 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.	X	

	Meets Request	
	Yes	No
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.	X	
The power source shall be operated at 100 percent of its nameplate voltage for a minimum of 2 hours unless the system meets category certification as defined in the current NFPA 1901 standard.	X	
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.	X	
GENERATOR The apparatus shall be equipped with a complete electrical power system. The generator shall be a Harrison Model MCR Stealth 10.0 kW Hydraulic unit. The wiring and generator installation shall conform to the present National Electrical Codes Standards of the National Fire Protection Association. The installation shall be designed for continuous operation without overheating and undue stress on components.	X	
Generator Performance - Continuous Duty Rating: 10,000 watts - Nominal Volts: 120/240 - Amperage: 80 @ 120 volts, 40 @ 240 volts - Phase: Single - Cycles: 60 hertz - Engine Speed at Engagement: Idle - RPM range: 900 to 3,000 (hydraulic pump)	X	
The output of the generator shall be controlled by an internal hydraulic system. An electrical instrument gauge panel shall be provided for the operator to monitor and control all electrical operations and output.	X	
The generator shall be driven by a transmission power take off unit, through a hydraulic pump and motor.	X	
The generator shall include an electrical control inside the cab. The hydraulic engagement supply shall be operational at any time (no interlocks).	X	

	Meets Request	
	Yes	No
An electric/hydraulic valve shall supply hydraulic fluid to the clutch engagement unit provided on the chassis PTO drive.	X	
Generator Instruments and Controls		
To properly monitor the generator performance a digital meter panel shall be furnished and mounted next to the circuit breaker panel. The meter shall indicate the following items:	X	
- Voltage		
- Amperage for both lines		
- Frequency		
- Generator run hours		
- Over current indication		
- Over temperature indication		
- "Power On" indication		
- 2 fuse holders with 2-amp fuses (for indicator light protection)		
The meter and indicators shall be installed near eye level in the compartment. Instruments shall be flush mounted in an appropriately sized weatherproof electrical enclosure. All instruments used shall be accurate within +/- 2 percent.	X	
Generator Wiring:		
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 as designed for mobile type installations subject to vibration, moisture, and severe continuous usage. The following electrical components shall be the minimum acceptable quality standards for this apparatus:	X	
Wiring:		
All electrical wiring shall be fine stranded copper type. The wire shall be sized to the load and circuit breaker rating; 10 gauge on 30-amp circuits, 12 gauge on 20-amp circuits and 14 gauge on 15-amp circuits. The cable shall be run in corner areas and extruded aluminum pathways built into the body for easy access.	X	

	Meets Request	
	Yes	No
Load Center:		
The main load center shall be a Cutler Hammer with circuit breakers rated to load demand.	X	
Circuit Breakers:		
Individual breakers shall be provided for all on-line equipment to isolate a tripped breaker from affecting any other on-line equipment.	X	
GENERATOR LOCATION The generator shall be mounted on top of the water tank, at the front of the body, at the on the forward portion of the body, rear to the water and foam fill, forward of the cross divider. The water tank in this area shall be either reinforced, or constructed, in such a manner, that it shall handle the additional weight of the generator.	X	
GENERATOR START There shall be a switch provided on the cab instrument panel to engage the generator.	X	
CIRCUIT BREAKER PANEL The circuit breaker panel shall be located high on the back wall of compartment LS3.	X	
120 VOLT LIGHTING There shall be 2 Whelen®, Model PFP2AP1*, 120-volt AC LED flood light(s) with a switch on the light head and Model PBAPEDA, pedestal mounting bracket(s) installed on the driver and passenger side rear of the body.	X	
The painted parts of this light assembly to be white.	X	
The light(s) selected above shall be controlled by the circuit breaker(s) located in the breaker panel and by the following locations: • • a switch at the driver's side switch panel • • no additional switch location • • no additional switch location • • no additional switch location	X	
ELECTRIC CORD REEL Furnished with the 120-volt AC electrical system shall be a Hannay, Series 1600, cord reel. The reel shall be provided with a 12-volt electric rewind switch that is guarded to prevent accidental operation and labeled for its intended use. The switch shall be protected with a fuse and installed at a height not to exceed 72.00" above the operators standing position.	X	

	Meets Request	
	Yes	No
The exterior finish of the reel(s) shall be painted #269 gray from the reel manufacturer.	X	
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.	X	
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.	X	
A total of 2 cord reels shall be provided in the forward portion of the driver and passenger side hatch compartment.	X	
The cord reel should be configured with 3 conductors.	X	
CORD Provided for electric distribution shall be 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.	X	
PORTABLE JUNCTION BOX There shall be 2 Akron EJBX electric junction box(es) provided.	X	
There shall be a cable strain relief and a 1.00' pigtail with black plastic ribbed grip, NEMA L5-20, 20-amp, 120-volt twist lock plug provided for each box.	X	
Each box shall be provided with the following: • 2 15/20-amp 120-volt AC duplex straight blade receptacle with flip up covers • 2 20-amp 120-volt AC twist lock single receptacles with flip up covers • a 120-volt AC light inside the box	X	
JUNCTION BOX HOLDER There shall be an aluminum junction box holder installed adjacent to the cord reel. A total of 2 shall be mounted at pick-up.	X	
120 VOLT RECEPTACLE There shall be 3, 15/20-amp 120-volt AC, 3 wire straight blade duplex receptacle(s) with interior stainless steel wall plate(s), installed to be determined. The NEMA configuration for the receptacle(s) shall be 5-20R.	X	

	Meets Request	
	Yes	No
The receptacle(s) shall be powered from the on board 12-volt DC to 120-volt AC power inverter.	X	
There shall be a label installed near the receptacle(s) that state the following:	X	
• • Line Voltage • • Current Ratting (amps) • • Phase • • Frequency		
120 VOLT RECEPTACLE There shall be 2, 15/20-amp 120-volt AC, 3 wire straight blade duplex receptacle(s) with interior stainless steel wall plate(s), installed to be determined. The NEMA configuration for the receptacle(s) shall be 5-20R.	X	
The receptacle(s) shall be powered from the on-board generator.	X	
There shall be a label installed near the receptacle(s) that state the following:		
• • Line Voltage • • Current Ratting (amps) • • Phase • • Frequency		
120 VOLT RECEPTACLE There shall be 2,15-amp 120-volt AC, 3 wire twist lock receptacle(s) with flip up cover(s) installed on the rear of the body for the tripod lights. The NEMA configuration for the receptacles shall be L5-15R.	X	
The receptacle(s) shall be powered from the on-board generator.		
There shall be a label installed near the receptacle(s) that state the following:		
• • Line Voltage • • Current Ratting (amps) • • Phase • • Frequency		
240 VOLT RECEPTACLE There shall be 1, 30-amp 240-volt AC, 3 wire twist lock receptacle(s) with exterior flip up cover(s) installed to be determined. The NEMA configuration for the receptacles shall be L6-30R.	X	

	Meets Request	
	Yes	No
The receptacle(s) shall be powered from the on-board generator. There shall be a label installed near the receptacle(s) that state the following: • • Line Voltage • • Current Ratting (amps) • • Phase • • Frequency	X	
NOZZLE A Task Force Tips Master Stream Series M-R nozzle shall be provided. The nozzle shall have a range of 250 to 1250 GPM, and manual pattern control.	X	
NFPA REQUIRED LOOSE EQUIPMENT PROVIDED BY CITY (FIRE DEPARTMENT) The following loose equipment as outlined in NFPA 1901, 2016 edition, section 5.9.3 and 5.9.4 shall be provided by the fire department. • 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. • 1 handline nozzle, 200 gpm (750 L/min) minimum. • 2 handline nozzles, 95 gpm (360 L/min) minimum. • 1 smoothbore of combination nozzle with 2.50" shutoff that flows a minimum of 250 gpm. • 1 SCBA complying with NFPA 1981 for each assigned seating position, but not fewer than 4, mounted in brackets fastened to the apparatus or stored in containers supplied by the SCBA manufacturer. • 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). • 1 first aid kit. • 4 combination spanner wrenches. • 2 hydrant wrenches. • 1 double female 2.50" (65 mm) adapter with National Hose threads. • 1 double male 2.50" (65 mm) adapter with National Hose threads. • 1 rubber mallet, for use on suction hose connections. • 2 salvage covers each a minimum size of 12 ft x 14 ft (3.7 m x 4.3 m). • 1 traffic vest for each seating position, each vest to comply with ANSI/ISEA 207, *Standard for High Visibility Public Safety Vests*, and have a five-point breakaway feature that includes 2 at the shoulders, 2 at the sides, and 1 at the front.	X	

	Meets Request	
	Yes	No
• 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. • 5 illuminated warning devices such as highway flares, unless the 5 fluorescent orange traffic cones have illuminating capabilities. • 1 automatic external defibrillator (AED). • 4 ladder belts meeting the requirements of NFPA 1983, *Standard on Fire Service Life Safety Rope and System Components* (if equipped with an aerial device). • If the supply hose carried does not use sexless couplings, an additional double female adapter and double male adapter, sized to fit the supply hose carried, shall be carried mounted in brackets fastened to the apparatus. • If none of the pump intakes are valved, a hose appliance that is equipped with one or more gated intakes with female swivel connection(s) compatible with the supply hose used on one side and a swivel connection with pump intake threads on the other side shall be carried. Any intake connection larger than 3.00" (75 mm) shall include a pressure relief device that meets the requirements of 16.6.6. • If the apparatus does not have a 2.50" National Hose (NH) intake, an adapter from 2.50" NH female to a pump intake shall be carried, mounted in a bracket fastened to the apparatus if not already mounted directly to the intake. • 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.		
SOFT SUCTION HOSE There shall be no soft suction hose provided.	X	
STRAINER PROVIDED BY CITY (FIRE DEPARTMENT) NFPA 1901, 2016 edition, section 5.8.2.1.1 requires a suction strainer when suction hose is provided.	X	
DRY CHEMICAL EXTINGUISHER PROVIDED BY CITY (FIRE DEPARTMENT) NFPA 1901, 2016 edition, section 5.9.4 requires 1 approved dry chemical portable fire extinguisher with a minimum 80-B:C rating mounted in a bracket fastened to the apparatus.	X	

	Meets Request	
	Yes	No
The fire department shall provide and mount the extinguisher.		
WATER EXTINGUISHER PROVIDED BY CITY (FIRE DEPARTMENT) NFPA 1901, 2016 edition, section 5.9.4 requires 1 2.5 gallon or larger water extinguisher mounted in a bracket fastened to the apparatus. The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.	X	
FLATHEAD AXE PROVIDED BY CITY (FIRE DEPARTMENT) NFPA 1901, 2016 edition, Section 5.9.4 requires 1 flathead axe mounted in a bracket fastened to the apparatus. The fire department shall provide and mount the axe.	X	
PICKHEAD AXE PROVIDED BY CITY (FIRE DEPARTMENT) NFPA 1901, 2016 edition, Section 5.9.4 requires 1 pickhead axe mounted in a bracket fastened to the apparatus. The fire department shall provide and mount the axe.	X	
PAINT PROCESS The exterior custom cab and body painting procedure shall consist of a 7-step finishing process as follows: 1. Manual Surface Preparation - All exposed metal surfaces on the custom cab and body shall be thoroughly cleaned and prepared for painting. Imperfections on the exterior surfaces shall be removed and sanded to a smooth finish. Exterior seams shall be sealed before painting. Exterior surfaces that shall not be painted include chrome plating, polished stainless steel, anodized aluminum, and bright aluminum treadplate. 2. Chemical Cleaning and Pretreatment - All surfaces shall be chemically cleaned to remove dirt, oil, grease, and metal oxides to ensure the subsequent coatings bond well. The aluminum surfaces shall be properly cleaned and treated using a high pressure, high temperature 4 step Acid Etch process. The steel and stainless surfaces shall be properly cleaned and treated using a high temperature 3 step process specifically designed for steel or stainless. The chemical treatment converts the metal surface to a passive condition to help prevent corrosion. 3. Surfacer Primer - The Surfacer Primer shall be applied to a chemically treated metal surface to provide a strong corrosion protective basecoat. A minimum thickness of 2 mils of Surfacer Primer is applied to surfaces that require a Critical	X	

	Meets Request	
	Yes	No
aesthetic finish. The Surfacer Primer is a two-component high solids urethane that has excellent sanding properties and an extra smooth finish when sanded. 4. Finish Sanding - The Surfacer Primer shall be sanded with a fine grit abrasive to achieve an ultra-smooth finish. This sanding process is critical to produce the smooth mirror like finish in the topcoat. 5. Sealer Primer - The Sealer Primer is applied prior to the Basecoat in all areas that have not been previously primed with the Surfacer Primer. The Sealer Primer is a two-component high solids urethane that goes on smooth and provides excellent gloss hold out when top coated. 6. Basecoat Paint - Two coats of a high performance, two component high solids polyurethane basecoat shall be applied. The Basecoat shall be applied to a thickness that shall achieve the proper color match. The Basecoat shall be used in conjunction with a urethane clear coat to provide protection from the environment. 7. Clear Coat - 2 coats of Clear Coat shall be applied over the Basecoat color. The Clear Coat is a two-component high solids urethane that provides superior gloss and durability to the exterior surfaces. Lap style and roll-up doors shall be Clear Coated to match the body. Paint warranty for the roll-up doors shall be provided by the roll-up door manufacturer.		
After the cab and body are painted, the color shall be verified to make sure that it matches the color standard. Electronic color measuring equipment shall be used to compare the color sample to the color standard entered into the computer. Color specifications shall be used to determine the color match. A Delta E reading shall be used to determine a good color match within each family color.	X	
All removable items such as brackets, compartment doors, door hinges, and trim shall be removed and painted separately if required, to ensure paint behind all mounted items. Body assemblies that cannot be finish painted after assembly shall be finish painted before assembly.	X	
The paint finish quality levels for critical areas of the apparatus (cab front and sides, body sides and doors, and boom lettering panels) are to meet or exceed Cadillac/General Motors GMW15777 global paint requirements. Orange peel levels are to meet or exceed the #6 A.C.T. standard in critical areas. These requirements must be met in order for the exterior paint finish to be considered acceptable. The manufacture's written paint standards shall be available upon request.	X	

	Meets Request	
	Yes	No
Environmental Impact Contractor shall meet or exceed all current state regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water, and soil. Controls shall include the following conditions: • Topcoats and primers shall be chrome and lead free. • Metal treatment chemicals shall be chrome free. The wastewater generated in the metal treatment process shall be treated on-site to remove any other heavy metals. • Particulate emission collection from sanding operations shall have a 99.99 percent efficiency factor. • Particulate emissions from painting operations shall be collected by a dry filter or water wash process. If the dry filter is used, it shall have an efficiency rating of 98 percent. Water wash systems shall be 99.97 percent efficient • Water from water wash booths shall be reused. Solids shall be removed on a continual basis to keep the water clean. • Paint wastes are disposed of in an environmentally safe manner. • Empty metal paint containers shall be recycled to recover the metal. • Solvents used in clean-up operations shall be recycled on-site or sent off-site for distillation and returned for reuse.	X	
Additionally, the finished apparatus shall not be manufactured with or contain products that have ozone depleting substances. Contractor shall, upon demand, present evidence that the manufacturing facility meets the above conditions and that it is in compliance with his state EPA rules and regulations.	X	
CAB PAINT The cab shall be painted 350 Red.	X	
BODY PAINT The body shall be painted to match the lower section of the cab.	X	
PAINT CHASSIS FRAME ASSEMBLY The chassis frame assembly shall be finished with primer and gloss paint to match the lower job color before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, etc.	X	
Components that are included with the chassis frame assembly that shall be painted are: • Frame rails	X	

	Meets Request	
	Yes	No
• Frame liners • Cross members • Axles • Suspensions • Steering gear • Battery boxes • Bumper extension weldment • Frame extensions • Body mounting angles • Rear Body support substructure (front and rear) • Pump house substructure • Air tanks • Steel fuel tank • Castings • Individual piece parts used in chassis and body assembly		
Components treated with epoxy E-coat protection prior to paint: • 2 C-channel frame rails • 2 frame liners	X	
The E-coat process shall meet the technical properties shown.	X	
AXLE HUB PAINT All axle hubs shall be painted to match lower job color.	X	
The cab wheel wells shall be unpainted.	X	
COMPARTMENT INTERIOR PAINT The interior of all compartments shall be painted with a gray spatter type paint.	X	
REFLECTIVE BAND A 4.00" white reflective band shall be provided across the front of the vehicle and along the sides of the body.	X	
The reflective band provided on the cab face shall be at the headlight level.	X	
REAR CHEVRON STRIPING There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus. The rear surface, excluding the rear compartment door, shall be covered.	X	

	Meets Request	
	Yes	No
The colors shall be red and fluorescent yellow green diamond grade.	X	
Each stripe shall be 6.00" in width.	X	
This shall meet the requirements of the current edition of NFPA 1901, which states that 50% of the rear surface shall be covered with chevron striping.	X	
ADDITIONAL GRAPHICS The reflective stripe shall wrap around all doors and into the hinges on cab and body, except for on the front, leave 1/8" gap from the grille to the stripe. There shall be an 1/8" space on both sides of the signgold stripe up to the scotch lite stripe on both sides where they meet.	X	
CAB DOOR REFLECTIVE STRIPE A 6.00" x 16.00" white reflective stripe shall be provided across the interior of each cab door. The stripe shall be located approximately 1.00" up from the bottom, on the door panel.	X	
This sign shall meet the NFPA 1901 requirement.	X	
CAB STRIPE There shall be a Sign Gold stripe provided on both sides of the cab in place of the chrome molding and on the cab face with shield.	X	
LETTERING The lettering shall be totally encapsulated between 2 layers of clear vinyl.	X	
BODY STRIPE There shall be a Sign Gold stripe around the top, bottom, front, and rear edges of the body compartments with scrolls in each corner.	X	
LETTERING Forty-one (41) to sixty (60) genuine gold leaf lettering, 3.00" high, with outline and shade shall be provided	X	
LETTERING There shall be reflective lettering, 24.00" high, with no outline or shade provided. There shall be 2 letters provided.	X	
LETTERING There shall be sign gold, 3.00" high, with outline provided. There shall be 9 letters provided.	X	
LETTERING There shall be sign gold lettering, 4.00" high, with outline provided. There shall be 4 letters provided.	X	

	Meets Request	
	Yes	No
LETTERING There shall be sign gold lettering, 2.00" high, with outline provided. There shall be 9 letters provided.	X	
LETTERING There shall be sign gold, 3.00" high, outline provided. There shall be 9 letters provided.	X	
LETTERING ON MUD FLAP The front and rear mud flaps shall state the following in reflective lettering: Match Corner Logo There shall be 2 different colors of reflective lettering provided. The following shall be in color 1: LB The font style of the lettering shall be Full Block. The color of the lettering shall be red with white outline. The font style of the lettering shall be full block The color of the lettering shall be red with white outline	X	
EMBLEM OMITTED The logo plate mounted to each cab door shall be omitted.	X	
EMBLEMS There shall be 1 pair of maltese crosses, comprised of sign gold material, provided, and installed on the front cab doors.	X	
EMBLEM/S There shall be 1 pair SignGold with black outline scrolling ribbon/s, installed on the crew cab doors. Each shall have "100 Years of Service", in black lettering.	X	
LETTERING/NUMERALS ON CAB GRILLE 2 painted letters/numerals with outline, as determined by the fire department, shall be provided on the cab grille.	X	
FIRE APPARATUS PARTS MANUAL There shall be 2 custom parts manual(s) in USB flash drive format for the complete fire apparatus provided.	X	
The manual(s) shall contain the following: • Job number • Part numbers with full descriptions • Table of contents • Parts section sorted in functional groups reflecting a major system, component, or assembly	X	

	Meets Request	
	Yes	No
• Parts section sorted in alphabetical order • Instructions on how to locate parts		
Each manual shall be specifically written for the chassis and body model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.	X	
CHASSIS SERVICE MANUALS There shall be 2 chassis service manuals on USB flash drives containing parts and service information on major components provided with the completed unit.	X	
The manual shall contain the following sections: • Job number • Table of contents • Troubleshooting • Front Axle/Suspension • Brakes • Engine • Tires • Wheels • Cab • Electrical, DC • Air Systems • Plumbing • Appendix		
The manual shall be specifically written for the chassis model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.	X	
CHASSIS OPERATION MANUAL The chassis operation manual shall be provided on 1 USB flash drive.	X	
OPERATOR TRAINING One day minimum of on-site training shall take place after delivery and before 1st unit is placed in-service to familiarize Fire Department staff with delivered unit	X	
TECHNICIAN TRAINING One day minimum of on-site training shall take place after delivery and before 1st unit is placed in-service to familiarize Fleet Service Technician staff with delivered unit	X	

	Meets Request	
	Yes	No
TRAINING (FACTORY TYPE) Manufacturer specific training of the purchased chassis, suspension, electrical and multiplex systems shall be provided for 4 Technicians to include all educational supplies, travel, and accommodations. If prerequisite training is required, that shall also be included. All training should be completed at first available dates after delivery of Pumpers.	X	
1 YEAR MATERIAL AND WORKMANSHIP Each new piece of apparatus shall be provided with a minimum **1-year** basic apparatus material and workmanship limited warranty. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the RFP package.	X	
ENGINE WARRANTY A Cummins **5-year** limited engine warranty shall be provided. A copy of the warranty certificate shall be submitted with the RFP package.	X	
STEERING GEAR WARRANTY A Sheppard **3-year** limited steering gear warranty shall be provided. A copy of the warranty certificate shall be submitted with the RFP package.	X	
FIFTY (50) YEAR STRUCTURAL INTEGRITY The chassis frame shall be provided with a **fifty (50) year** material and workmanship limited warranty. The warranty shall cover the chassis frame as being free from defects in material and workmanship that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package	X	
FRONT AXLE 3 YEAR MATERIAL AND WORKMANSHIP WARRANTY Independent front suspension shall be provided with a **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.	X	
SINGLE REAR AXLE 5 YEAR MATERIAL AND WORKMANSHIP WARRANTY A Meritor™ Axle 5-year limited warranty shall be provided.	X	

	Meets Request	
	Yes	No
ABS BRAKE SYSTEM 3 YEAR MATERIAL AND WORKMANSHIP WARRANTY A Meritor Wabco™ ABS brake system **3-year** limited warranty shall be provided.	X	
EXTENDED CAB WARRANTY A copy of the fire apparatus manufacturer's warranty shall be included with the bid. The warranty shall state that the cab shall be free of structural failures caused by defective design or workmanship for an extended warranty period of 5 years past the standard 10-year structural cab warranty for a total of 15 years. Corrosion is not considered a structural defect nor is paint considered part of this warranty. In order for this warranty to remain valid for the 15-year period, a reasonable maintenance schedule as well as annual inspections at 10 years and annual inspections thereafter are to be completed on the apparatus. If routine maintenance and the required inspections are not performed or the unit is involved in an accident, the warranty is void. Warranty is limited to 100,000 miles. Warranty is not transferable.	X	
10 YEAR PRO-RATED PAINT AND CORROSION Each new piece of apparatus shall be provided with a **10-year** pro-rated paint and corrosion limited warranty on the apparatus cab. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package.	X	
5 YEAR MATERIAL AND WORKMANSHIP The electronic modules and display(s) shall be provided with a 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.	X	
A copy of the warranty certificate shall be submitted with the bid package.	X	
CAMERA SYSTEM WARRANTY A 4-year minimum warranty shall be provided for the camera system.	X	
COMPARTMENT LIGHT WARRANTY A 10-year material and workmanship limited warranty shall be provided for the Pierce 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.	X	
A copy of the warranty certificate shall be submitted with the bid package.	X	

	Meets Request	
	Yes	No
TRANSMISSION WARRANTY The transmission shall have a **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.	X	
TRANSMISSION COOLER WARRANTY The transmission cooler shall carry a 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 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.	X	
WATER TANK WARRANTY The UPF poly water tank shall be provided with a lifetime material and workmanship limited warranty.	X	
A copy of the warranty certificate shall be submitted with the bid package.	X	
15 YEAR STRUCTURAL INTEGRITY Each new piece of apparatus shall be provided with a 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.	X	
A copy of the warranty certificate shall be submitted with the bid package.	X	
ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY A Gortite roll-up door limited warranty shall be provided. The mechanical components of the roll-up door shall be warranted against defects in material and workmanship for the lifetime of the vehicle. A **6-year** limited warranty shall be provided on painted and satin roll up doors.	X	
A copy of the warranty certificate shall be submitted with the bid package.	X	
PUMP WARRANTY The Waterous pump shall be provided with a 7-year material and workmanship limited warranty.	X	
A copy of the warranty certificate shall be submitted with the bid package.	X	
10 YEAR PUMP PLUMBING WARRANTY 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 **10**	X	

	Meets Request	
	Yes	No
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.		
A copy of the warranty certificate shall be submitted with the bid package.	X	
10 YEAR PRO-RATED PAINT AND CORROSION Each new piece of apparatus shall be provided with a **10-year** pro-rated paint and corrosion limited warranty on the apparatus body. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.	X	
A copy of the warranty certificate shall be submitted with the bid package.	X	
ONE (3) YEAR MATERIAL AND WORKMANSHIP The gols leaf lamination shall be provided with a 3-year material and workmanship limited warranty. The warranty shall cover the graphic lamination as being free from defects in material, workmanship, fading, and deterioration that would arise under normal use and service.	X	
A copy of the warranty certificate shall be submitted with the bid package.		
VEHICLE STABILITY CERTIFICATION 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.	X	
ENGINE INSTALLATION CERTIFICATION 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 proposer's chassis. The certification shall be provided at the time of delivery.	X	
POWER STEERING CERTIFICATION 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.	X	
CAB INTEGRITY CERTIFICATION The fire apparatus manufacturer shall provide a cab crash test certification with this proposal. The certification shall state that a specimen representing the substantial	X	

	Meets Request	
	Yes	No
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: • European Occupant Protection Standard ECE Regulation No.29. • SAE J2422 Cab Roof Strength Evaluation - Quasi-Static Loading Heavy Trucks. • SAE J2420 COE Frontal Strength Evaluation - Dynamic Loading Heavy Trucks.		
Roof Crush The cab shall be subjected to a roof crush force of 22,500 lb. This value meets the ECE 29 criteria and is equivalent to the front axle rating up to a maximum of 10 metric tons.	X	
Side Impact The same cab shall be subjected to dynamic preload where a 13,275-lb moving barrier is slammed into the side of the cab at 5.50 mph, striking with an impact of 13,000 ft-lb of force. This test is part of the SAE J2422 test procedure and more closely represents the forces a cab shall see in a rollover incident.	X	
Frontal Impact The same cab shall withstand a frontal impact of 32,600 ft-lb of force using a moving barrier in accordance with SAE J2420.	X	
Additional Frontal Impact The same cab shall withstand a frontal impact of 65,200 ft-lb of force using a moving barrier. (Twice the force required by SAE J2420)	X	
The same cab shall withstand all tests without any measurable intrusion into the survival space of the occupant area.	X	
There shall be no exception to any portion of the cab integrity certification. Nonconformance shall lead to immediate rejection of proposal.	X	
CAB DOOR DURABILITY CERTIFICATION Robust cab doors help protect occupants. Cab doors shall survive a 200,000-cycle door slam test where the slamming force exceeds 20 G's of deceleration. The proposer 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.	X	

	Meets Request	
	Yes	No
WINDSHIELD WIPER DURABILITY CERTIFICATION Visibility during inclement weather is essential to safe apparatus performance. Windshield wipers shall survive a 3 million cycle durability test in accordance with section 6.2 of SAE J198 *Windshield Wiper Systems - Trucks, Buses and Multipurpose Vehicles.* The proposer shall certify that the wiper system design has been tested and that the wiper system has met these criteria.	X	
SEAT BELT ANCHOR STRENGTH Seat belt attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat belt anchor design shall withstand 3000 lb. of pull on both the lap and shoulder belt in accordance with FMVSS 571.210 Seat Belt Assembly Anchorages. The proposer shall certify that each anchor design was pull tested to the required force and met the appropriate criteria.	X	
SEAT MOUNTING STRENGTH Seat attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat mounting design shall be tested to withstand 20 G's of force in accordance with FMVSS 571.207 Seating Systems. The proposer shall certify, at time of delivery, that each seat mount and cab structure design was pull tested to the required force and met the appropriate criteria.	X	
PERFORMANCE CERTIFICATIONS		
Cab Defroster Visibility during inclement weather is essential to safe apparatus performance. The defroster system shall clear the required windshield zones in accordance with SAE J381 Windshield Defrosting Systems Test Procedure and Performance Requirements - Trucks, Buses, And Multipurpose Vehicles. The proposer shall certify that the defrost system design has been tested in a cold chamber and passes the SAE J381 criteria.	X	
Cab Auxiliary Heater Good cab heat performance and regulation provides a more effective working environment for personnel, whether in-transit, or at a scene. An auxiliary cab heater shall warm the cab 77 degrees Fahrenheit from a cold soak, within 30 minutes when tested using the coolant supply methods found in SAE J381. The proposer shall certify, at time of delivery, that a substantially similar cab has been tested and has met these criteria.	X	
AMP DRAW REPORT The proposer 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.	X	

	Meets Request	
	Yes	No
The manufacturer of the apparatus shall provide the following: • Documentation of the electrical system performance tests. • A written load analysis, which shall include the following: o The nameplate rating of the alternator. o The alternator rating under the conditions specified per: ▪ Applicable NFPA 1901 or 1906 (Current Edition). o The minimum continuous load of each component that is specified per: ▪ Applicable NFPA 1901 or 1906 (Current Edition). o Additional loads that, when added to the minimum continuous load, determine the total connected load. o Each individual intermittent load.	X	
All the above listed items shall be provided by the proposer per the applicable NFPA 1901 or 1906 (Current Edition).	X	

Attachment C: Authorization & Certification

I certify that:

i. I am authorized to submit this Request for Proposals on behalf of the organization above.

ii. I have read, understand and agree to comply with the terms and conditions specified in this Request for Proposal. Any exceptions to the terms and conditions that will be requested have been documented in the table below, Exceptions to Terms & Conditions.

iii. The proposal is submitted as a firm and fixed request valid and open for 90 days from the submission deadline.

iv. This proposal is genuine, and not sham or collusive, nor made in the interest or in behalf of any person not herein named; the Proposer has not directly or indirectly induced or solicited any other Proposer to put in a sham proposal and the Proposer has not in any manner sought by collusion to secure for himself or herself an advantage over any other Proposer.

v. In addition, this organization and its members are not now and will not in the future be engaged in any activity resulting in a conflict of interest, real or apparent, in the selection, award, or administration of a subcontract.

Furthermore, as a current or potential Contractor for the City of Long Beach (City) your firm, through its business relationship with the City, may be the recipient of federal grant funds. As such, the City is required to document that neither your business entity or organization, nor any of your principals are debarred, suspended, ineligible, or have voluntarily been excluded from receiving federal grant funds. Consistent with Executive Order No. 12549 Title 2 CFR Part 180 Subpart C, all potential recipients of federal grant funds are required to comply with the requirements specified below. By submission of proposal/bid/agreement, the undersigned, under penalty of perjury, certifies that the participant, nor any of its principals in the capacity of owner, director, partner, officer, manager, or other person with substantial influence in the development or outcome of a covered transaction, whether or not employed by the participant:

i. Are not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal department or agency;

ii. Have not, within a three (3) year period preceding this bid/agreement/proposal, been suspended, debarred, voluntarily excluded or declared ineligible by a federal agency;

iii. Do not presently have a proposed debarment proceeding pending;

iv. Have not, within a three (3) year period preceding this bid/agreement/proposal, been indicted or convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct;

v. Have not, within a three (3) year period preceding this bid/agreement/proposal, had one or more public transactions (Federal, State, or local) terminated for cause or default.

vi. If reorganization, management turnover, or a shift or change of principals' status occurs, written notice must be submitted within 21 days. Subsequent disclosure of unfavorable information will be subject to thorough review and remedial action. Updated versions of this certification may be requested on a routine basis.

vii. Where the potential prospective recipient of Federal assistance funds is unable to certify to any of the statement in this certification, such prospective participant shall attach an explanation to the applicable bid/agreement/proposal.

		
Name	Signature	Date

Exceptions to Terms & Conditions

EXCEPTIONS TO TERMS AND CONDITIONS (IF APPLICABLE) *Exceptions to terms and conditions are uncommon, and Proposers are not encouraged to take exception to terms and conditions. However, in the event there are terms that should be reviewed as part of potential negotiation of a final contract, they should be listed here. The City of Long Beach has no obligation to accept any exceptions to terms and conditions. Any award is contingent upon the successful negotiation of final contract terms. If contract negotiations cannot be concluded successfully, the City reserves the right to negotiate a contract with another Contractor or withdraw the RFP.*	
Term & Condition Number	Explanation of Objection

Attachment D

EQUAL BENEFITS ORDINANCE DISCLOSURE

As a condition of being awarded a contract with the City of Long Beach ("City"), the selected Contractor/Vendor ("Contractor") may be required during the performance of the Contract, to comply with the City's nondiscrimination provisions of the Equal Benefits Ordinance ("EBO") set forth in the Long Beach Municipal Code section 2.73 et seq. The EBO requires that during the performance f the contract, the Contractor shall provide equal benefits to its employees with spouses and employees with domestic partners. Benefits include but are not limited to, health benefits, bereavement leave, family medical leave, member ship and membership discounts, moving expenses, retirement benefits and travel benefits. A cash equivalent payment is permitted if an employer has made all reasonable efforts to provide domestic partners with access to benefits but is unable to do so. A situation in which a cash equivalent payment might be used if where the employer has difficulty finding an insurance provider that is willing to provide domestic partner benefits.

The EBO is applicable to the following employers:

- For-profit employers that have a contract with the City for the purchase of goods, services, public works or improvements and other construction projects in the amount of $100,000 or more

- For-profit entities that generate $350,000 or more in annual gross receipts leasing City property pursuant to a written agreement for a term exceeding 29 days in any calendar year

Contractors who are subject to the EBO must certify to the City before execution of the contract that they are in compliance with the EBO by completing the EBO Certification Form, attached, or that they have been issued a waiver by the City. Contractors must also allow authorized City representatives access to records so the City can verify compliance with the EBO.
The EBO includes provisions that address difficulties associated with implementing procedures to comply with the EBO. Contractors can delay implementation of procedures to comply with the EBO in the following circumstances:

1) By the first effective date after the first open enrollment process following the contract start date, not to exceed two years, if the Contractor/vendor submits evidence of taking reasonable measures to comply with the EBO; or
2) At such time that the administrative steps can be taken to incorporate nondiscrimination in benefits in the Contractor/vendor's infrastructure, not to exceed three months; or
3) Upon expiration of the contractor's current collective bargaining agreement(s).

Compliance with the EBO

If a contractor has not received a waiver from complying with the EBO and the timeframe within which it can delay implementation has expired but it has failed to comply with the EBO, the Contractor may be deemed to be in material breach of the Contract. In the event of a material breach, the City may cancel, terminate or suspend the City agreement, in whole or in part. The City also may deem the Contractor an irresponsible bidder and disqualify the Contractor from contracting with the City for a period of three years. In addition, the City may assess liquidated damages against the Contractor which may be deducted from money otherwise due the Contractor. The City may also pursue any other remedies available at law or in equity.

By my signature below, I acknowledge that the Contractor understands that to the extent it is subject to the provisions of the Long Beach Municipal Code section 2.73, the Contractor shall comply with this provision.

Printed Name: Bryden Newell Title: Sales Manager

Signature: Bryden Newell Date: 2-14-23

Business Entity Name: South Coast Fire Equipment

EQUAL BENEFITS ORDINANCE
CERTIFICATION OF COMPLIANCE

Section 1. CONTRACTOR/VENDOR INFORMATION

Name: South Coast Fire Equipment Federal Tax ID No. [redacted]
Address: 2020 S. Baker Ave.
City: Ontario State: CA ZIP: 91761
Contact Person: Bryden Newell Telephone: 909-673-9900
Email: bryden@southcoastfire.net Fax: _____

Section 2. COMPLIANCE QUESTIONS

A. The EBO is inapplicable to this Contract because the Contractor/Vendor has no employees. _____Yes _X_No

B. Does your company provide (or make available at the employees' expense) any employee benefits? _X_Yes _____No
(If "yes," proceed to Question C. If "no," proceed to section 5, as the EBO does not apply to you.)

C. Does your company provide (or make available at the employees' expense) any benefits to the spouse of an employee?
_X_Yes _____No

D. Does your company provide (or make available at the employees' expense) any benefits to the domestic partner of an employee?
_X_Yes _____No (If you answered "no" to both questions C and D, proceed to section 5, as the EBO is not applicable to this contract. If you answered "yes" to both Questions C and D, please continue to Question E. If you answered "yes" to Question C and "no" to Question D, please continue to section 3.)

E. Are the benefits that are available to the spouse of an employee identical to the benefits that are available to the domestic partner of an employee?
_X_Yes ____No
(If "yes," proceed to section 4, as you are in compliance with the EBO. If "no," continue to section 3.)

Section 3. PROVISIONAL COMPLIANCE

A. Contractor/vendor is not in compliance with the EBO now but will comply by the following date:

_____ By the first effective date after the first open enrollment process following the contract start date, not to exceed two years, if the Contractor/vendor submits evidence of taking reasonable measures to comply with the EBO; or

_____ At such time that the administrative steps can be taken to incorporate nondiscrimination in benefits in the Contractor/vendor's infrastructure, not to exceed three months; or

_____ Upon expiration of the contractor's current collective bargaining agreement(s).

B. If you have taken all reasonable measures to comply with the EBO but are unable to do so, do you agree to provide employees with a cash equivalent? (The cash equivalent is the amount of money your company pays for spousal benefits that are unavailable for domestic partners.)
__X__ Yes ____ No

Section 4. REQUIRED DOCUMENTATION

At time of issuance of purchase order or contract award, you may be required by the City to provide documentation (copy of employee handbook, eligibility statement from your plans, insurance provider statement, etc.) to verify that you do not discriminate in the provision of benefits.

Section 5. CERTIFICATION

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that I am authorized to bind this entity contractually. By signing this certification, I further agree to comply with all additional obligations of the Equal Benefits Ordinance that are set forth in the Long Beach Municipal Code and in the terms of the contract of purchase order with the City.

Executed this 14 day of February, 2023, at 2:31 PM, _____

Name Bryden Newell Signature Bryden Newell

Title Sales Manager Federal Tax ID No. [redacted]

4.3 Narrative Proposal Template

Proposers should develop a narrative proposal that includes all of the following information.

Organizational Capacity & Experience

PROPOSER CONTACT INFORMATION		
Organization	Company Name	South Coast Fire Equipment
	Company Address	2020 S. Baker Ave. Ontario, CA 91761
	Federal Tax ID Number	33-0693942
	Website	Southcoastfire.net
Authorized Representative	Name	Adrian Beyer
	Title	Sales Representative
	Email Address	adrian@southcoastfire.net
	Phone Number	909-223-1077
Other Point of Contact (if required)	Name	Kevin Newell
	Title	President
	Email Address	kevin@southcoastfire.net
	Phone Number	909-673-9900
PROPOSER CAPACITY & EXPERIENCE		
What type of enterprise is the organization?		☐ Non-Profit
		☐ Sole Proprietorship
		☐ General Partnership
		☒ Corporation *State and Date of incorporation:* _____CA, Feb, 1996_____
		☐ Limited Liability Company
		☐ Other _____
Please describe why the organization is qualified to provide the services described in this RFP (1-2 paragraphs).		South Coast Fire Equipment has been helping provide Pierce fire apparatus to Southern California since 1996, including the city of Long Beach. The sales team has over 100 years combined in the fire service and fire industry. Pierce manufacturing was founded in 1913, and began producing Fire Apparatus in 1939 and is the leading manufacturer in North America. Pierce has over 27,000 vehicles on the road with over 2,500 employees, including 250 engineers.

Please describe the length of time the organization has been providing the services described in this RFP sentences.	1996 to present
How many employees does the organization have in total and residing in Long Beach?	0
Where are the representative(s) that would service the City's account located?	Corona, CA and Ontario, CA

Who are the key staff involved in the project? For each, please a name, title, and resume either as an attachment or 1 paragraph description.		Adrian Beyer, Sales Representative
REFERENCES		
Reference 1	Company	Kern County Fire Department
	Project Manager	Ron Fox
	Phone Number	661-330-0170
	Project Description	Continuous Fire Apparatus Purchasing
	Project Start and End Dates	
Reference 2	Company	Imperial County Fire Department
	Project Manager	Robert Malek
	Phone Number	760-897-9749
	Project Description	Fire Apparatus Purchasing
	Project Start and End Dates	2019 - Present
Reference 3	Company	Pasadena Fire Department
	Project Manager	Chris Reno
	Phone Number	310-466-5767
	Project Description	Fire Apparatus Purchasing
	Project Start and End Dates	2019- Present
Reference 4	Company	Glendale Fire Department
	Project Manager	Will Williams
	Phone Number	818-548-4823
	Project Description	Fire Apparatus Purchasing
	Project Start and End Dates	2006- Present
Reference 5	Company	San Diego Fire Department
	Project Manager	Ted Moran
	Phone Number	858-573-1409
	Project Description	Fire Apparatus Purchasing
	Project Start and End Dates	1998-Present

SUB-CONTRACTOR CONTACT INFORMATION		
Does the proposal include subcontractors?		☐ Yes ☒ No
If applicable, provide the following for all subcontractors included in this proposal.		
Organization	Company Name	
	Company Address	
Authorized Representative	Name	
	Title	
	Email Address	
	Phone Number	
Other Point of Contact (if required)	Name	
	Title	
	Email Address	
	Phone Number	
SUBCONTRACTOR CAPACITY & EXPERIENCE		
What type of enterprise is the organization?		☐ Non-Profit ☐ Sole Proprietorship ☐ General Partnership ☐ Corporation *State and Date of incorporation:* _____ ☐ Limited Liability Company ☐ Other _____
Which specific requirements of this RFP will the subcontractor perform?		
Please describe why the organization is qualified to provide the services described in this RFP.		
Please describe the length of time the organization has been providing the services described in this RFP.		
How many employees does the organization have nationally, locally, and residing in Long Beach?		
Where are the representative(s) that would service the City's account located?		

Methods of Approach

1. Please describe your proposed product.
The product proposed is a Pierce Enforcer Triple Combination pumper. The Enforcer was designed for ergonomics and safety. It features a panoramic windshield without a center post, with 3 wipers for maximum clearance during inclement weather. The cab structure exceeds all DOT and NFPA requirements for crash/ cab safety. The chassis features the TAK-4 independent suspension which improves ride quality, braking and turning performance. The cab also tilts to a maximum angle for ease of maintenance. The engine filters are remote mounted for easier access. The fender wells are easily removable for maintenance on suspension parts. The layout of the cab, body and pumphouse will closely mimic the City of Long Beach's current fleet for operational continuity while keeping all the specifications requested.
2. Please explain the logic model for how you will achieve the target outcomes/outputs of the RFP.
Pierce manufacturing has produced over 27,000 vehicles and several vehicles for the City of Long Beach. Pierce has been in business for over 95 years. South Coast Fire Equipment is the dealer for the City of Long Beach. South Coast has been working with departments in Southern California for over 25 years, and has the experience in the needs of these unique departments. If the project is awarded to South Coast and Pierce, the dealership will work with the apparatus committee to take the specifications provided in the RFP and make sure that the goals are achievable and carried through to the department's requirements. A preconstruction conference will be held, where the department will meet with the Sales representative, Factory Project manager, and Engineers to go through every detail of the specification to be sure the departments needs are captured and able to be built. The vehicles will be fully engineered, then released to manufacturing. Our manufacturing team will begin the building process, with a dedicated team following the build process to ensure the specifications are being met. The Apparatus committee will then inspect the vehicle halfway through manufacturing process to verify that the vehicle being produced to department specification. When the vehicle is completed, the department will then do a final inspection to inspect and test the vehicle.
3. Please summarize your proposed workplan with timelines for key milestones.
The order is estimated to take 16-20 months to complete from issuance of PO • Receive PO from the City of Long Beach • Submit order to Pierce Manufacturing • Order Acceptance by Pierce and build slots secured 2-3 days after submittal. • Preconstruction can be arranged 2 weeks after issuance of PO • Preconstruction will take place at factory, approximately 3 days of work. • Department will review specs, sales rep will make changes and submit back to Pierce. Based on previous experience 2-3 weeks after preconstruction. • Order will then go into que for engineering

• 2-3 months after preconstruction the order will be reviewed by engineering, submit questions and clarifications to Sales Rep and department. • Order will be released to manufacturing. • Manufacturing will begin about 12 weeks before projected completion. • Department will do a post paint mid inspection about 4 weeks before completion. Any issues found will be addressed before completion • When the vehicles are complete the department will do a Final Inspection at Pierce mfg. Any issues found at final will be addressed before being shipped to South Coast Fire Equipment.
4. Please state how your proposal will meet the objective or criteria of this RFP.
The proposed specifications were carefully examined, and we are able to meet all of the criteria set forward without any issue with the exception of proposed battery charger due to it being obsolete. A proposed replacement is include with the exceptions page that has been submitted.
5. Please outline what your company will need from the City to implement the contract successfully.
Once the PO is received, the only thing needed is timely response to questions from the factory. Based on previous projects, issues with communication are not a concern.
6. Please describe available local to Long Beach service and warranty support.
South Coast Emergency Vehicle Service is the primary warranty provider and preferred service provider. South Coast EVS is located in Ontario, Paso Robles and Vista, CA with several road technicians. Service and Warranty can be provided either in Long Beach or the closest location Ontario.

Communications & Reporting

1. Performance Reports: Please describe how you will provide performance updates, such as progress pictures and/or drawings, supply chain issues, etc.
Throughout the engineering and build process the factory and sales representative will keep the Apparatus Committee informed on any pertinent information. The department will be provided a written specification and drawings before the preconstruction, post engineering and post-delivery. Once the vehicles begin production, photos will be posted weekly of them in production. The apparatus committee has access to all photos throughout the build process and after the trucks are delivered.
2. Please explain how you will coordinate with the City to meet the objectives of the RFP.
As mentioned in the previous responses, there will be several meetings, inspections and updates throughout the whole process. This will allow South Coast and Pierce manufacturing to
3. The City requires that the Awarded Contractor provide proof of payment of any subcontractors used for this project. If the proposal includes subcontractors, please describe the plan for how the City will be notified of such payments.

All paid invoices will be provided to the Apparatus Committee chair after completion of service and payment.

RESCUE ENGINE RESPONSE

WHEELBASE: The dimensions of given for the body, pumphouse and cab, the wheelbase will be 209" The desired wheelbase can be achieved but modifications will need to be made to body and pumphouse dimensions.

CITY OF
LONG BEACH

Memorandum

Date: April 4, 2023

To: Michelle Wilson, Purchasing Agent, Department of Financial Management

From: Kevin Riper, Director of Financial Management Department

Subject: **Selection of RFP FM-22-175 – Fire Engine Pumpers**

Request for Proposal (RFP) FM-22-175 was released on December 21, 2022 seeking proposals for fire engine pumpers for the Long Beach Financial Management Fleet Bureau.

Three (3) responsive proposals were submitted by the February 16, 2023 deadline. Proposals were reviewed by representatives from the Financial Management Fleet Bureau. The proposals were evaluated based upon the following criteria:

- Organizational Capacity & Experience
- Method of Approach
- Communications & Reporting
- Reasonableness of Cost

After review of all proposals, the review panel selected the following provider to provide services:

- South Coast Fire Equipment Inc.

The vendor was selected based on the company's organizational capacity & experience, method of approach, communication & reporting, and reasonableness of cost.

Should additional information be required, please do not hesitate to contact me.

Approved by Purchasing:

Michelle M Wilson
Michelle Wilson, Purchasing Agent

4/4/23
Date

EXHIBIT "B"

Rates/Charges

February 16, 2023

Subject: Long Beach Engine and Rescue Engine Pricing

The table below provides pricing for nine (9) Pierce Enforcer Engines and one (1) Pierce Enforcer Rescue Engine.

Pierce Enforcer Triple Combination Engine Cost Each	**$1,015,425.00**
Total Cost for 9 Enforcer Triple Combination Engines	**$9,138,825.00**
Pierce Enforcer Triple Combination Rescue Engine Cost Each	**$1,136,413.00**
Total Cost for 1 Enforcer Triple Combination Rescue Engine	**$1,136,413.00**
Total Cost for all 10 Engines	**$10,275,238.00**
Sales Tax @ 10.25%	**$1,053,211.90**
Cost of California Tire Fee	**$105.00**
TOTAL COST	**$11,328,554.90**

Pierce Manufacturing is currently holding production slots for the city. Delivery of completed apparatus is expected to begin 14 months after receipt of an order.

- Due to global supply chain constraints, any delivery date contained herein is a good faith estimate as of the date of this order/ contract. Delivery dates will be made available, and a final firm date will be provided as soon as possible.
- Estimated Completion date is June 1, 2024 if contract is received by July 1, 2023.

The quote provided is valid for 30 days from the specified date, After 30 days the right is reserved to withdraw this proposal. Please contact me for any additional information at 909-223-1077.

Sincerely,

Adrian Beyer
Sales Representative
South Coast Fire Equipment
Pierce Mfg. Dealer