Town of Secaucus
1203 Paterson Plank Road
Secaucus, New Jersey 07094

BID DOCUMENTS
FOR
PURCHASE OF ONE (1)
TRIPLE COMBINATION PUMPER

TOWN COUNSEL: CHASAN LEYNER & LAMPARELLO, PC
300 HARMON MEADOW BOULEVARD
SECAUCUS, NEW JERSEY 07094-3621
(201) 348-6000
ATTENTION: ANTHONY V. D'ELIA, ESQ.

TABLE OF CONTENTS

Page

1.0 BID NOTICE 1

2.0 DEFINITIONS 2

3.0 INSTRUCTIONS TO BIDDERS 3

4.0 SPECIFICATIONS 11

SCHEDULE 1 – BID PROPOSAL CHECKLIST

SCHEDULE 2 – BID PROPOSAL FORM

SCHEDULE 3 – TECHNICAL SPECIFICATIONS

SCHEDULE 4 – AFFIDAVIT OF NON-COLLUSION

SCHEDULE 5 – AFFIDAVIT AND QUESTIONNAIRE OF BIDDER'S EXPERIENCE AND FINANCIAL RESPONSIBILITY

SCHEDULE 6 – STATEMENT OF OWNERSHIP OF CORPORATION OR PARTNERSHIP

SCHEDULE 7 - ACKNOWLEDGMENT OF SECAUCUS PAY TO PLAY ORDINANCE

SCHEDULE 8 - DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN

BID NOTICE
TOWN OF SECAUCUS
HUDSON COUNTY, NEW JERSEY

PLEASE TAKE NOTICE that sealed bids for the purchase of one (1) Triple Combination Pumper will be received by the Town Clerk of the Town of Secaucus ("Secaucus" or "Town"), on November 17, 2015, at 11:00 a.m., prevailing time, at Secaucus Town Hall, 1203 Paterson Plank Road, Secaucus, New Jersey 07094, at which time said bids will be publicly opened and read.

All bids must be on the proposal forms obtained from the Town of Secaucus. All bids must be enclosed in a sealed envelope bearing the name and address of the bidder and the words "Triple Combination Pumper - Sealed Bid. The envelope must be addressed to Michael Marra, Town Clerk, Town of Secaucus, 1203 Paterson Plank Road, Secaucus, New Jersey 07094, and may be delivered by hand, overnight courier or mail. The envelope containing the bid must be received by the Town Clerk by the date and time set forth above. No late bids will be accepted.

Specifications and other bid documents may be examined and obtained at the Town's Purchasing Agent's office, 1203 Paterson Plank Road, Secaucus, New Jersey 07094, phone 201-330-2026, during business hours, 9:00 a.m. until 4:00 p.m. The fee for the complete bid package is fifty ($50.00) dollars payable in cash or certified check to the Town of Secaucus.

Each bid must be accompanied by a certified check, cashier's check or bid bond from a surety company licensed to do business in New Jersey, in the amount of ten percent (10%) of the base bid submitted, but not in excess of $20,000.00, made payable to the Town of Secaucus

All bidders are required to comply with the requirements of N.J.S.A. 10:5-31 et seq. (P.L. 1975, c. 127 as amended) and N.J.A.C. 17:27-1.1 et seq.

The Town reserves the right to waive any minor irregularities or to reject any or all bids or parts of bid.

DEFINITIONS

"BID DOCUMENTS" means all documents requesting bid proposals including the Bid Notice, Definitions, Instructions to Bidders, Technical Specifications, Bid Proposal Checklist, Bid Proposal Form, Statement of Bidder's and Manufacturer's Qualifications, Experience and Financial Ability and Questionnaire, Exceptions and Clarification Forms, Specifications Questionnaires, Statement of Ownership of Corporation or Partnership, Affidavit of Non-Collusion, addenda (if any), all documents submitted by the bidder, and the Contract.

"CONTRACT" means the written agreement executed by and between the Contractor and the Town of Secaucus, as amended, changed or modified, and shall include all Bid Documents.

"CONTRACTOR" means the lowest responsible bidder to whom the award of the Contract shall be made pursuant to N.J.S.A. 40A:11-1, et seq., including 40A:11-4 and -15(15).

INSTRUCTION TO BIDDERS

APPARATUSES SOUGHT

Secaucus is soliciting bid proposals from contractors interested in providing one (1) Triple Combination Pumper in accordance with the terms of these Bid Documents.

PRE-BID INSPECTION REQUIRED

Washington Hook & Ladder must be inspected prior to submitting a bid to ensure that the apparatus/truck will be able to navigate the driveway and be stored properly within the firehouse. Failure to inspect the property site prior to submitting a bid will be a basis for rejection of the bid, and for cancelling a contract if one is awarded if the apparatus cannot satisfy the requirements of this paragraph.

BID OPENING

All bids will be publicly opened and read by Michael Marra, Town Clerk, or his designee, as set forth in the Bid Notice.

THE BID SUBMISSION

A. Each document required to be submitted by the bidder (see Bid Proposal Checklist, Volume I, **Schedule 1**) must be properly completed in accordance with these Bid Documents.

B. Bids shall be delivered to the Town of Secaucus as set forth in the Bid Notice.

C. Each bidder shall sign the documents to be submitted, where applicable, as follows:

1. For a corporation, by an authorized principal executive officer;
2. For a partnership or sole proprietorship, by a general partner or the proprietor respectively; or
3. By a duly authorized representative.

D. An original and (1) one copy of all bid proposal documents should be submitted.

BID PROPOSAL FORM

A. On the Bid Proposal Form (**Schedule 2**), the bidder must state the prices, and rates offered, written or typed in ink, in words and numbers for each item requested.

B. If the amount shown in words and its equivalent in figures in the Bid Proposal Form do not agree, the written words shall be binding. In the event there is a discrepancy between the unit prices and the extended totals, including any formula, the unit prices shall prevail.

C. Each bidder shall acknowledge receipt of addenda on the Bid Proposal Form, if applicable.

D. The bidder must submit a bid for each apparatus and each alternate.

E. A contract for the apparatuses will be awarded to the lowest responsible bidder determined based on a comparison of the lump sum bid or, if optional equipment is chosen, based on a comparison of the lump sum bid, plus the selected optional equipment as set forth in the Bid Proposal Form, or, if an Alternate is chosen, based on a comparison of the Total Alternate Costs.

F. Any conditions, limitations, provisos, amendments, or other changes attached or added by the bidder to any of the provisions of these Bid Documents or any changes made by the bidder on the Bid Proposal Form may result in the rejection of the bid.

INTERPRETATION

Prior to the receipt of the bids, no oral interpretation will be made to any potential bidder as to the meaning of the Bid Documents. A request for a written interpretation shall be made in writing, by fax to Secaucus General Counsel, Anthony V. D'Elia, Esq., c/o Chasan Leyner & Lamparello, PC, 300 Harmon Meadow Boulevard, Secaucus, New Jersey 07094 at (201) 348- 6633, at least seven (7) business days prior to the date fixed for the opening of bids. Every interpretation made will be in the form of an addendum to the Bid Documents and notice of same will be in accordance with the Local Public Contracts Law, *N.J.S.A.* 40A:11-23(c). Failure of the bidder to acknowledge receipt of all addenda shall not relieve the bidder from any obligation.

OBJECTIONS TO CONTRACT DOCUMENTS

All potential bidders are advised to examine the Bid Documents carefully. Any potential bidder who wishes to challenge the Bid Documents shall file such challenge in writing with General Counsel, as set forth in the preceding paragraph no less than three (3) business days prior to the opening of the bids.

Challenges filed after that time shall be considered void and having no impact on Secaucus or the award of a contract. N.J.S.A. 40A:11-13.

INTERESTED PARTIES

No employee or elected/appointed officer or official of the Town, or any member municipality of the Town, or member of the immediate family of any such person may bid on this contract or have a financial interest in the contract.

BID GUARANTEE

Each bid must be accompanied by a cashier's check, certified check or bid bond from a surety company licensed to do business in the State of New Jersey, in the amount of ten percent (10%) of the Total Lump Sum Bid submitted in the Bid Proposal Form, but not in excess of $20,000.00, made payable to the Town of Secaucus. Cash will not be accepted. The bid bond submitted shall be in a form satisfactory to the Town and shall comply with the Local Public Contracts Law.

VENDOR/MANUFACTURER QUALIFICATIONS

Secaucus will make any investigation it deems necessary to determine the ability of a bidder to provide the goods required by the Bid Documents. The bidder agrees to furnish to Secaucus all such information and data for this purpose as the Secaucus requests. Secaucus reserves the right to reject any bid if the evidence submitted by, or investigation of, the bidder fails to satisfy the Town that the bidder, vendor and manufacturer are properly qualified to carry out the obligations of the Bid Documents.

NOTICE OF AWARD, EXECUTION OF CONTRACT & DELIVERY OF DOCUMENTS

A. Within ten (10) calendar days of notice of the award of the contract, the successful bidder shall deliver to the Town the executed contract, the performance and payment bond (if one is required by the Bid Documents), insurance documents reflecting the required insurance coverage, the appropriate affirmative action documentation, and any other documents required under the Technical Specifications.

B. Failure to deliver the aforementioned documents in a form satisfactory to the Town, and commence the contract within two weeks of award notification, shall be cause for the Town to declare the bidder non-responsive and to award the contract to the next lowest bidder.

INDEMNIFICATION

To the fullest extent permitted by law, Contractor shall release, indemnify, defend and hold harmless the Town of Secaucus, and its Members, Executive Directors, officers, officials, employees and agents (collectively, the "Indemnified Parties" and individually, an "Indemnified Party") from and against any and all claims, damages, losses, fines, civil penalties, liabilities, judgments, costs and expenses of any kind or nature whatsoever, including, but not limited to, interest, court costs and attorneys' fees, which in any way arise out of or result from any act(s) or omission(s) by Contractor (or anyone directly or indirectly employed by Contractor or anyone for whose acts Contractor may be liable) in the performance or non performance of services, provision of goods, or other obligations under the Bid Documents or in the use or occupancy of any facilities or equipment provided by the Town, including, but not limited to, injury to or death of any person, damage to or destruction of any property, real or personal (including, but not limited to, property owned, leased or under the control of the Town), and liability or obligations under or with respect to any violation of federal, state and local laws, regulations, rules, codes and ordinances (including, but not limited to, those concerning environmental protection, or patent or trademark infringement). This section shall apply regardless of whether or not the damage, loss or injury complained of arises out of or relates to the negligence (whether active, passive or otherwise) of, or was caused in part by, an Indemnified Party. However, nothing contained in this section shall be construed as a release or indemnity by Contractor of an Indemnified Party from or against any loss, liability or claim to the extent arising from the gross negligence or willful misconduct of that Indemnified Party. This section shall not be construed to negate, abridge or otherwise reduce any other right to indemnity which would otherwise exist in favor or any Indemnified Party, or any obligation of Contractor, its officers, directors, employees, agents or contractors to indemnify an Indemnified Party. Contractor's obligations under this section shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits paid or payable by Contractor under workers' compensation laws, disability benefits laws or other employee benefit laws or regulations. The indemnification obligations of this section shall survive termination or expiration of the contract.

AFFIRMATIVE ACTION REQUIREMENTS

The successful bidder agrees to comply with the requirements of N.J.S.A. 10:5-31 et seq. (P.L. 1975, c. 127 as amended) and N.J.A.C. 17:27-1.1 et seq. The bidder agrees to the mandatory language and terms set forth below as required by N.J.A.C. 17:27-1.1 et seq. Prior to the execution of the Contract, the successful bidder will submit (1) evidence that the bidder is operating under an existing federally approved affirmative action program, (2) a Certificate of Employee Information Report, issued in accordance with N.J.A.C. 17:27-4, or (3) a completed initial Affirmative Action Employee Information Report (Form AA-302).

Mandatory Affirmative Action Language

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation or sex. Except with respect to affectional or sexual orientation, the contractor will take affirmative action to ensure that such applicants are recruited and employed, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation or sex. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation or sex.

The contractor or subcontractor, where applicable, will send to each labor union or representative or workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

The contractor or subcontractor agrees to make good faith efforts to employ minority and women workers consistent with the applicable county employment goals established in accordance with N.J.A.C. 17:27-5.2, or a binding determination of the applicable county employment goals determined by the Division, pursuant to N.J.A.C. 17:27-5.2.

The contractor or subcontractor agrees to inform in writing its appropriate recruitment agencies including, but not limited to, employment agencies, placement bureaus, colleges, universities, labor unions, that it does not discriminate on the basis of age, creed, color, national origin, ancestry, marital

status, affectional or sexual orientation or sex, and that it will discontinue the use of any recruitment agency which engages in direct or indirect discriminatory practices.

The contractor or subcontractor agrees to revise any of its testing procedures, if necessary, to assure that all personnel testing conforms with the principles of job-related testing, as established by the statutes and court decisions of the State of New Jersey and as established by applicable Federal law and applicable Federal court decisions.

In conforming with the applicable employment goals, the contractor or subcontractor agrees to review all procedures relating to transfer, upgrading, downgrading and layoff to ensure that all such actions are taken without regard to age, creed, color, national origin, ancestry, marital status, affectional or sexual orientation or sex, consistent with the statutes and court decisions of the State of New Jersey, and applicable Federal law and applicable Federal court decisions.

The contractor shall submit to the public agency, after notification of award but prior to execution of a goods and services contract, one of the following three documents: (1) Letter of Federal Affirmative Action Plan Approval; (2) Certificate of Employee Information Report; or (3) Employee Information Report Form AA302.

The contractor and its subcontractors shall furnish such reports or other documents to the Div. of Contract Compliance & EEO as may be requested by the office from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Div. of Contract Compliance & EEO for conducting a compliance investigation pursuant to Subchapter 10 of the Administrative Code at N.J.A.C. 17:27.

AMERICANS WITH DISABILITIES ACT OF 1990

Discrimination on the basis of disability in contracting for the purchase of goods and services is prohibited. The successful bidder agrees to comply with the requirements of Title II of the Americans With Disabilities Act of 1990 ("Act"). The bidder agrees to the mandatory language and terms of the Act as follows:

The Contractor and the Town do hereby agree that the provisions of Title II of the Americans with Disabilities Act of 1990 (the "Act") (42 U.S.C. § 12101 et seq.), which prohibits discrimination on the basis of disability by public entities in a all services, programs, and activities provided or made available by public entities, and the rules and regulations promulgated pursuant thereunto, are made a part of this contract. In providing any aid, benefit, or service on behalf of the Town pursuant to this contract, the Contractor agrees that the performance shall be in strict compliance with the Act. In the event that the Contractor, its agents,

servants, employees, or subcontractors violate or are alleged to have violated the Act during the performance of this contract, the Contractor shall defend the Town in any action or administrative proceeding commenced pursuant to this Act. The Contractor shall indemnify, protect, and save harmless the Town, its agents, servants, and employees from and against any and all suits, claims, losses, demands, or damages, of whatever kind or nature arising out of or claimed to arise out of the alleged violation. The Contractor shall, at its own expense, appear, defend, and pay any and all charges for legal services and any and all costs and other expenses arising from such action or administrative proceeding or incurred in connection therewith. In any and all complaints brought pursuant to the Town's grievance procedure, the Contractor agrees to abide by any decision of the Town which is rendered pursuant to said grievance procedure. If any action or administrative proceeding results in an award of damages against the Town or if the Town incurs any expense to cure a violation of the Act which has been brought pursuant to its grievance procedure, the Contractor shall satisfy and discharge the same at its own expense.

The Town shall, as soon as practicable after a claim has been made against it, give written notice thereof to the Contractor along with full and complete particulars of the claim. If any action or administrative proceeding is brought against the Town or any of its agents, servants, and employees, the Secaucus shall expeditiously forward or have forwarded to the Contractor every demand, complaint, notice, summons, pleading, or other process received by the Secaucus or its representatives.

It is expressly agreed and understood that any approval by the Town of the services provided by the Contractor pursuant to this contract will not relieve the Contractor of the obligation to comply with the Act and to defend, indemnify, protect, and save harmless the Secaucus pursuant to this paragraph.

It is further agreed and understood that the Town assumes no obligation to indemnify or save harmless the Contractor, its agents, servants, employees and subcontractors for any claim which may arise out of their performance of the contract. Furthermore, the Contractor expressly understands and agrees that the provisions of this indemnification clause shall in no way limit the Contractor's obligations assumed in the contract, nor shall they be construed to relieve the Contractor from any liability, nor preclude the Town from taking any other actions available to it under any other provisions of the contract or otherwise at law.

THE NEW JERSEY WORKER AND COMMUNITY RIGHT TO KNOW ACT

The successful bidder shall insure that the manufacturer or supplier of a substance or mixture shall supply the Chemical Abstracts Service number of all the components of the mixture or substance and the chemical name. The manufacturer and supplier must properly label each container. Further, all

applicable Material Safety Data Sheets (MSDS) – hazardous substance fact sheet – must be furnished.

NEW JERSEY BUSINESS REGISTRATION REQUIREMENTS

The bidder shall comply with the requirements of the Business Registration law, N.J.S.A. 52:32-44 (P.L. 2004, c. 57). The bidder shall submit a copy of its business registration certificate with its bid. The mandatory language and terms of the Business Registration law are set forth below. For information on the Business Registration law go to:

http://www.state.nj.us/dca/lgs/lpcl/index.shtml#BusinessRegistration

N.J.S.A. 52:32-44 (P.L. 2004, c. 57) (Business Registration Law) amends and supplements the business registration provisions of N.J.S.A. 52:32-44, which impose certain requirements upon a business competing for, or entering into a contract with a local contracting agency whose contracting activities are subject to the requirements of the Local Public Contracts Law (N.J.S.A. 40A:11-1, et seq.), or the Public School Contracts Law (N.J.S.A. 18A:18A-1, et seq.)

The contractor shall provide written notice to its subcontractors of the responsibility to submit proof of business registration to the contractor.

Before final payment on the contract is made by the contracting agency, the contractor shall submit an accurate list and the proof of business registration of each subcontractor or supplier used in the fulfillment of the contract, or shall attest that no subcontractors were used.

For the term of the contract, the contractor and each of its affiliates and subcontractors of its affiliates [N.J.S.A. 52:32-44(g)(3)] shall collect and remit to the Director, New Jersey Division of Taxation, the use tax due pursuant to the Sales and Use Tax Act on all sales of tangible personal property delivered into this State, regardless of whether the tangible personal property is intended for a contract with a contracting agency.

A business organization that fails to provide a copy of a business registration as required pursuant to the Business Registration Law, N.J.S.A. 52:32-44, or that provides false business registration information, shall be liable for a penalty of $25 for each day of violation, not to exceed $50,000 for each business registration copy not properly provided under a contract with a contracting agency.

SPECIFICATIONS

TERMS AND CONDITIONS TO BE INCLUDED IN THE CONTRACT

The following terms and conditions shall be incorporated in to the purchase contract:

A. The vehicle shall be delivered to the Town within 330 days after receipt of order.

B. The bidder shall provide liability and casualty/property insurance for the vehicles until they are delivered to the Town and the Town accepts delivery.

C. In the event any vehicle is not delivered in a timely manner, the Contractor shall pay the Town liquidated damages of $30 per day, per vehicle not delivered.

PAYMENTS

A. Before any payments are made to Contractor, the work is subject to inspection and approval by the Fire Department, the Town Administrator, or their designee(s).

B. Payments to the Contractor only will be made upon the submission of a properly completed and approved Town of Secaucus voucher. The Town reserves the right to request as much detail or information together with the payment voucher to confirm the work has been performed and equipment furnished.

C. Payments to the Contractor will be made in accordance with the procedures set forth in the most recent Secaucus Purchasing Procedures.

D. The Town of Secaucus is tax exempt. Therefore, no taxes shall be included on invoices submitted for payment, whether for labor or parts, or any other item or charge.

D. If the successful bidder fails to perform or provide the apparatuses in accordance with the Bid Documents, the Town may deduct or retain from monies due, or which may become due to the successful bidder, or its assignee, such sum sufficient to pay the difference between the price(s) on which the award is made and the price(s) which the Town may or shall be obliged to pay to remedy such failure.

PRE-BID INSPECTION REQUIRED

F. Prior to submitting a bid, Bidders must inspect Washington Hook & Ladder ensuring that the new apparatus clears the apron leading in and out of the firehouse and is able to be stored within the firehouse.

COMPLIANCE WITH LAWS, REGULATIONS AND INDUSTRY STANDARDS

The apparatuses shall comply with applicable State and federal statutes, rules, regulations, codes and standards.

SCHEDULE 1

BID PROPOSAL CHECKLIST

Bidder should initial next to documents, thus indicating that the document has been submitted.

1. _____ Bid Proposal Checklist
2. _____ Bid Proposal Form
3. _____ Completed Technical Specifications "Comments" sections – Schedule 3
4. _____ Affidavit of Non-Collusion
5. _____ Affidavit and Questionnaire of Bidder's Experience and Financial Responsibility
6. _____ Manufacturers Specifications Provided
7. _____ Statement of Ownership of Corporation or Partnership
8. _____ Bid Guarantee
9. _____ Business Registration Certificate issued by the New Jersey Department of Treasury, pursuant to N.J.S.A. 52:32-44(1)(b) (P.L. 2004, c. 57)
10. _____ Acknowledgment Of Secaucus Pay To Play Ordinance
11. _____ Disclosure of Investment Activities in Iran

_____(seal)
(Contractor)

BY: _____
(Authorized Signature)

_____
(Printed Name and Title)

SCHEDULE 2

BID PROPOSAL FORM – 3 pages
Proposal for Triple Combination Pumper

TO: Town of Secaucus

FROM:

_____	_____
(Contractor)	(Phone Number)
_____	_____
_____	(Facsimile Number)
_____	_____
(Mailing Address)	(Beeper Number)
_____	_____
(e-mail address)	(Cellular Phone Number)

The undersigned hereby agrees to provide complete performance in accordance with the Bid Documents for the prices listed in this Bid Proposal Form. The bidder represents that it has read and understands the Bid Documents and that it has duly considered all information contained therein in the course of submitting its bid. Moreover, submission of this bid serves as the bidder's representation that if awarded the contract, it will not make any claims for, or have any right to, any concessions or damages because of lack of understanding of the Bid Documents or lack of information concerning same.

ONE (1) New and Unused "Triple Combination Pumper" (ALL PRICES TO INCLUDE DELIVERY)

MAKE:_____ MODEL: _____

BASE BID

PURCHASE PRICE: $_____ TOTAL: $_____

(In Words)_____

(Bidder to Check Yes or No)

	COMPLY YES	COMPLY NO
DELIVERY:		
Triple Combination Pumper shall be delivered within 330days After receipt of order.	____	____
Acceptance shall be subject to the inspection and approval Of the Town.	____	____
Bidder shall state delivery time and receipt of order		

_____

EXCEPTIONS AND DEVIATIONS:

Bidder shall fully describe every variance, exception and/or deviation. Additional sheets may be used if required.

_____

_____

_____

_____

_____

_____

_____

_____

The bidder states that it has received the following Addenda, Notices or Revisions to the Bid Documents and has given them due consideration in the preparation of its bid.

Addendum No., Title of Notice or Title of Revision	**Date Received**
_____	_____
_____	_____

Witness: _____(seal)
(Contractor)

_____ By: _____
(Signature) (Authorized Signature)

_____ _____
(Printed Name) (Printed Name)

_____ _____
(Title) (Title)

_____ _____
(Date) (Date)

Schedule 3

	Bidder Complies	
	Yes	No

SPECIFICATIONS FOR ONE (1) TRIPLE COMBINATION PUMPER

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

INTENT OF SPECIFICATIONS

It shall be the intent of these specifications to cover the furnishing and delivery of a complete fire apparatus. These detailed specifications cover the requirements as to the type of construction, finish, equipment and tests to which the fire apparatus shall conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor.

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

INSTRUCTIONS TO BIDDERS

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

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

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

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

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

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

	Bidder Complies	
	Yes	No
the apparatus furnished under contract shall conform. These specifications shall indicate size, type, model and make of all components parts and equipment, providing proof of compliance with each and every item in the departments advertised specifications. A letter only, even though written on company letterhead, shall not be sufficient. **An exception to this requirement shall not be acceptable.**		
In accordance with the current edition of NFPA 1901 standards, the proposal shall specify whether the fire department or apparatus dealership shall provide required loose equipment.		
The purchaser will utilize this advertised specification to compare all submitted bid proposals. To facilitate comparison, all bid proposal specifications shall be submitted in the same sequence as the advertised specification. Any bidder who fails to submit a set of bid proposal specifications, or who photo copies and submits these specifications as their own construction details will be considered non responsive. This shall render such proposal ineligible for award.		
The purchaser's specification shall, in all cases, govern the construction of the apparatus, unless a properly documented exception or deviation was approved. Any bid indicating that the manufacturer's proposal shall supersede the purchaser's specification will be considered a complete substitute and immediately rejected.		
THE PURCHASER HAS THE RIGHT TO REJECT ANY BIDS WHICH DOES NOT MEET THESE SPECIFICATIONS AND IS THE SOLE DECIDER TO DEEM WHICH BID IS IN THE BEST INTEREST OF THE PURCHASER.		
EXCEPTIONS These specifications are based upon design and performance criteria which have been developed by the fire department as a result of extensive research and careful analysis. Subsequently these specifications reflect the only type of fire apparatus that is acceptable at this time and all specifications herein contained are considered as minimum. Therefore exceptions to the specifications may not be accepted.		
Bidders shall indicate in the "yes/no" column if their bid complies on each item (paragraph) specified.		
If a product brand name is specified and is commercially available to all bidders, an exception to such items is not acceptable and such bid may be rejected.		
Exceptions shall be allowed if they are equal to or superior to that specified and provided they are listed and fully explained on a separate page. All deviations, no matter how slight, shall be clearly explained on a separate sheet, in the bid sequence, citing the page and paragraph number(s) of the specifications, how the proposal deviation is different, how the deviation meets or exceeds the specifications and why it is necessary, and entitled "EXCEPTIONS TO		

	Bidder Complies	
	Yes	No

SPECIFICATIONS". The buyer reserves the right to require a bidder to provide proof in each case that a substituted item is equal to that specified. The buyer shall be the sole judge in determination of acceptable substitutes.

Proposals that are found to have deviations without listing them or bids taking total exceptions to these advertised specifications will be rejected (no exception).

Bids not including all exceptions is a material breach and shall result in the bid being immediately rejected (no exception).

GENERAL DESIGN AND CONSTRUCTION

The cab, chassis, pump module, and body are to be entirely designed, assembled and painted by the prime vehicle manufacturer, which minimizes third party involvement on engineering, design, service and warranty issues.

All bidders shall provide a list of the company, manufacturing location, and engineering source for each individual major component, including but not limited to the welded cab assembly, the pumphouse module assembly, the chassis assembly, body and electrical system. Apparatus using any subcontracted cab, chassis, pump module, electrical system or body will not be acceptable.

The apparatus shall be designed with due consideration to distribution of load between the front and rear axles. Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Association.

The bidder shall make accurate statements as to the apparatus weight and dimensions.

QUALITY AND WORKMANSHIP

All steel welding shall follow American welding Society D1.1-2004 recommendations for structural steel welding. All aluminum welding shall follow American welding Society and ANSI D1.2-2003 requirements for structural welding of aluminum. All sheet metal welding shall follow American Welding Society B2.1-2000 requirements for structural welding of sheet metal. Flux core arc welding to use alloy rods, type 7000, American welding Society standards A5.20-E70T1. Employees classified as welders are tested and certified to meet the American Welding Society codes upon hire and every three (3) years thereafter. The manufacturer shall be required to have an American welding Society certified welding inspector in plant during working hours to monitor weld quality.

The manufacturer shall also be certified to operate a Quality Management System under the requirements of ISO 9001. These standards sponsored by the International organization for Standardization (ISO) specify the quality systems that shall be established by the manufacturer

	Bidder Complies	
	Yes	No

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

To demonstrate the quality of the product and service, each bidder shall provide a list of at least fifteen (15) fire departments/municipalities in the region that have bought a second time from the representing dealer. **An exception to this requirement shall not be acceptable.**

DELIVERY

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

MANUALS AND SERVICE INFORMATION

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

SAFETY VIDEO

Since video is much more effective than written documentation and can be replayed for new personnel and as a refresher for existing personnel, an apparatus safety video, in DVD format shall be provided at time of delivery. This video shall address key safety considerations for personnel to follow when they are driving, operating, and maintaining the apparatus. Safety procedures for the following shall be included on the video: vehicle pre trip inspection, chassis operation, pump operation and maintenance.

PERFORMANCE TESTS AND REQUIREMENTS

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

A) The apparatus, when fully equipped and loaded, shall have not less than 25 percent nor more than 50 percent of the weight on the front axle, and not less than 50 percent nor more than 75 percent on the rear axle.

B) The apparatus shall be capable of accelerating to 35 mph from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed rpm of the engine.

	Bidder Complies	
	Yes	No

C) The service brakes shall be capable of stopping a fully loaded vehicle in 35 feet at 20 mph on a level concrete highway. The air brake system shall conform to Federal Motor vehicle Safety Standards (FMVSS) 121.

D) The apparatus, fully loaded, shall be capable of obtaining a speed of 50 mph on a level concrete highway with the engine not exceeding the governed rpm (full load).

FAILURE TO MEET TEST

In the event the apparatus fails to meet the test requirements of these specifications on the first trial, second trials may be made at the option of the bidder within 30 days of the date of the first trial. Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection. failure to comply with changes to conform to any clause of the specifications, within 30 days after notice is given to the bidder of such changes, shall also be cause for rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the purchaser or its use by the purchaser during the above-specified period with the permission of the bidder shall not constitute acceptance.

SERVICE AND WARRANTY SUPPORT (DEALERSHIP)

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

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

Each bidder/dealership must be able to display that they are actively in the fire apparatus service business by 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.

The bidder/dealership must state the location of this authorized service center. This service center must have a staff of factory-trained mechanics, well versed in all aspects of service for all major components of the apparatus. The service center must be within fifty (50) miles of the Fire Department.

SERVICE AND WARRANTY SUPPORT (MANUFACTURER)

To provide an additional layer of service support, the successful manufacturer must also own a least two separate service facilities, one located in the northern portion of the US to service both Canada and the northern US states and one in the south to service the southern states.

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

	Bidder Complies	
	Yes	No
that ensures service parts are given priority. The bidder shall provide detailed documentation of service and replacement part resources.		
Parts identification shall be provided to both the dealer and the Fire Department through an on line web based application for the specific truck reflected in this specification. Access will be granted using the specific VIN number of the vehicle. The online web application will provide the ability to view complete bills of materials, digital photographs, parts drawings, assembly drawings, and access to all current operation, maintenance and service publications.		
The manufacturer must also maintain a 24 hour/ 7 day a week, toll free emergency hot line.		
The manufacturer shall employ a staff of adequate size (a minimum of 30 personnel) specifically dedicated to providing customer support and parts for the fielded fleet of vehicles it has produced.		
The manufacturer must be capable of providing both in-house and on-site service for the apparatus.		
The manufacturer shall offer regional factory hands-on repair and maintenance training classes.		
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.		
LIABILITY The successful bidder shall defend any and all suits and assume all liability for the use of any patented process including any device or article forming a part of the apparatus or any appliance furnished under the contract. To ensure this will occur, the bidder shall carry the following minimum insurance.		
COMMERCIAL GENERAL LIABILITY INSURANCE The successful bidder shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of commercial general liability insurance:		
Each Occurrence$1,000,000		
Products/Completed Operations Aggregate$1,000,000		
Personal and Advertising Injury$1,000,000		
General Aggregate$5,000,000		

Specification

	Bidder Complies	
	Yes	No
Coverage shall be written on a Commercial General Liability form. The policy shall be written on an occurrence form and shall include Contractual Liability coverage for bodily injury and property damage subject to the terms and conditions of the policy. The policy shall include Owner as an additional insured when required by written contract.		
COMMERCIAL AUTOMOBILE LIABILITY INSURANCE The successful bidder shall, during the performance of the contract keep in force at least the following minimum limits of commercial automobile liability insurance: Each Accident Combined Single Limit:$1,000,000 Coverage shall be written on a Commercial Automobile liability form.		
UMBRELLA/EXCESS LIABILITY INSURANCE The successful bidder shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of umbrella liability insurance: Aggregate:$25,000,000 Each Occurrence: $25,000,000 The umbrella policy shall be written on an occurrence basis and at a minimum provide excess to the Bidder's General Liability, Automobile Liability and Employer's Liability policies. The required limits can be provided by one (1) or more policies provided all other insurance requirements are met. Coverage shall be provided by a carrier(s) rated A- or better by A.M. Bests. All policies shall provide a 30 day notice of cancellation to the named insured. The Certificate of Insurance shall provide the following cancellation clause: Should any of the above described polices be cancelled before the expiration date thereof, notice shall be delivered in accordance with the policy provisions. Bidder agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with its bid. The certificate shall show the purchaser as certificate holder.		
SINGLE SOURCE MANUFACTURER Bids shall only be accepted from a single source apparatus manufacturer. The definition of single source is a manufacturer that designs and manufactures their products using an integrated approach, including the chassis, cab weldment, cab, pumphouse (including the sheet metal enclosure, valve controls, piping and operators panel) and body being designed, fabricated and assembled on the bidder's premises. The electrical system (hardwire or multiplex) shall be both		

	Bidder Complies	
	Yes	No
designed and integrated by the same apparatus manufacturer. The warranties relative to these major components (excluding component warranties such as engine, transmission, axles, pump, etc.) must be from a single source manufacturer and not split between manufacturers (i.e. body, pumphouse, cab weldment and chassis). The bidder shall provide evidence that they comply with this requirement.		
The bidder shall state the location of the factory where the apparatus is to be built.		
NFPA 2009 STANDARDS This unit shall comply with the NFPA standards effective January 1, 2009, except for fire department specifications that differ from NFPA specifications. These exceptions shall be set forth in the Statement of Exceptions.		
Certification of slip resistance of all stepping, standing and walking surfaces shall be supplied with delivery of the apparatus.		
A plate that is highly visible to the driver while seated shall be provided. This plate shall show the overall height, length, and gross vehicle weight rating.		
The manufacturer shall have programs in place for training, proficiency testing and performance for any staff involved with certifications.		
An official of the company shall designate, in writing, who is qualified to witness and certify test results.		
NFPA COMPLIANCY Apparatus proposed by the bidder shall meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in current edition at time of contract execution. Fire department's specifications that differ from NFPA specifications shall be indicated in the proposal as "non-NFPA".		
VEHICLE INSPECTION PROGRAM CERTIFICATION To assure the vehicle is built to current NFPA standards, the apparatus, in its entirety, shall be third-party, independent, audit-certified through Underwriters Laboratory (UL) that it is built and complies to all applicable standards in the current edition of NFPA 1901. The certification includes: all design, production, operational, and performance testing of not only the apparatus, but those components that are installed on the apparatus (no exception).		
A placard shall be affixed in the driver's side area stating the third party agency, the date, the standard and the certificate number of the whole vehicle audit.		

	Bidder Complies	
	Yes	No
PUMP TEST The pump shall be tested, approved, and certified by Underwriter's Laboratory at the manufacturer's expense. The test results and the pump manufacturer's certification of hydrostatic test; the engine manufacturer's certified brake horsepower curve; and the manufacturer's record of pump construction details shall be forwarded to the Fire Department.		
GENERATOR TEST If the unit has a generator, the generator shall be tested, approved, and certified by Underwriters Laboratories at the manufacturer's expense. The test results shall be provided to the Fire Department at the time of delivery.		
BREATHING AIR TEST If the unit has breathing air, the apparatus manufacturer shall draw an air sample from the air system and certify that the air quality meets the requirements of NFPA 1989, *Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection.*		
COUNTRY OF ORIGIN Pursuant to the requirements of NJSA 40A:11-18, all materials to be supplied under the terms of this contract must be products of the United States where available. As the apparatus being bid is available from United States companies, only bids from companies organized and incorporated in the United States of America shall be considered. There will be no exceptions to this requirement.		
PRELIMINARY DRAWING Bidder shall provide a preliminary drawing of the proposed vehicle with the bid package. This must be drawn to scale and be specific to the unit being proposed. No substitions of "similar" units shall be permitted. These drawings must be supplied on 11x17 paper, minimum, and show 5 views- front, rear, top, driver side and passenger side. Drawing must be complete showing options that have been selected, as much as practical.		
PRE-DELIVERY SERVICE Upon completion on the unit and delivery of same to the New Jersey service center, but prior to delivery to the customer, the apparatus shall undergo a complete service with respect to changing the engine and transmission oils and filters, and fuel filters. All other fluid levels shall be checked and brought to their proper levels. All chassis components shall be re-torqued as required by the manufacturer's pre-delivery inspection sheet and service bulletins. Apparatus is not to be delivered to the fire station to begin training until this service is performed.		
NON-DISCRIMINATION During the performance of the contract, the contractor agrees as follows:		

Specification

	Bidder Complies	
	Yes	No
a.The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, sex, or sexual orientation. The contractor will take affirmative action to ensure that such applicants are recruited and employed, and that employees are treated during employment without regard to their age, race, creed, color, national origin, ancestry, marital status, sex, or sexual orientation. Such action shall include, but not limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoffs or terminations; rates of pay or other forms of compensations; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth provisions of this nondiscrimination clause;		
b.The contractor or subcontractor, where applicable, will in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, sex, or sexual preference.		
c.The contractor or subcontractor, where applicable, will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.		
DELIVERY TRAINING Factory authorized delivery training will be provided by a factory trained delivery technician. This training will consist of a Power Point presentation, using images and descriptions of the customer own apparatus, as well as hands-on training in the use and proper care of the apparatus. A copy of the Power Point presentation will be provided to the purchaser, to be used in subsequent training of new and existing personnel.		
USERS LIST The bidder shall supply at the time of bid a listing of similarly equipped apparatus delivered in the State of New Jersey. The list shall include, at a minimum, the name and address of the purchaser, a contact name and number, the type of chassis, the body type and date of delivery. The listing shall contain a minimum of ten (10) users.		
DELIVERY Apparatus, to insure proper break in of all components while still under warranty, shall be delivered under it own power- rail or truck freight shall not be acceptable. A qualified delivery		

	Bidder Complies	
	Yes	No
person representing the contractor shall deliver the apparatus and remain for a sufficient length of time to instruct personnel in the proper operation, care and maintenance of the delivered unit (s).		
RIGHT TO REJECT BIDS		
The purchaser will accept only that bid which it determines to be in its best interest. The purchaser reserves the right to reject any and all bids.		
THIRD-PARTY WEEKLY PROGRESS REPORTS AND INSPECTIONS		
The successful bidder shall also provide weekly photographic progress reports and inspection services, provided by an independent third party. These progress reports and inspection services shall begin once the apparatus starts the manufacturing and assembly process. The inspection service will **NOT** warranty any aspect of the apparatus operability or design, but shall confirm that the options on the apparatus at final inspection reasonably comport to those in the specification. In addition, after the final inspection has been completed by the customer, the third party inspector shall also review all items noted in the inspection for completion prior to the apparatus leaving the manufacturing facility for delivery local service area for pre-delivery service. **ANY BIDDER WHO DOES NOT COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED NON-CONFORMING AND NOT CONSIDERED.**		
NEW JERSEY BUSINESS CERTIFICATE		
A valid New Jersey Business Registration Certificate, showing that the bidder is licensed to transact business in the State of New Jersey must be provided. Failure to provide a copy of this certificate shall lead to immediate rejection of the bid.		
THIRD-PARTY WEEKLY PROGRESS REPORTS AND INSPECTIONS		
The successful bidder shall also provide weekly photographic progress reports and inspection services, provided by an independent third party. These progress reports and inspection services shall begin once the apparatus starts the manufacturing and assembly process. The inspection service will **NOT** warranty any aspect of the apparatus operability or design, but shall confirm that the options on the apparatus at final inspection reasonably comport to those in the specification. In addition, after the final inspection has been completed by the customer, the third party inspector shall also review all items noted in the inspection for completion prior to the apparatus leaving the manufacturing facility for delivery local service area for pre-delivery service. **ANY BIDDER WHO DOES NOT COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED NON-CONFORMING AND NOT CONSIDERED.**		
ABILITY TO PROVIDE SERVICE		

Specification

	Bidder Complies	
	Yes	No
Equally necessary as a properly designed and constructed apparatus is the ability to obtain repairs and maintenance promptly in order to keep the apparatus in service. Below are listed the minimum requirements with which the bidder or their representative for the geographical area for the bid must comply: 1)Bidder or representative must be the authorized warranty service outlet for the apparatus and pump being bid. 2)Factory Authorized Service for the chassis, apparatus and pump being provided must be available in the purchaser's fire station. 3)The bidder or representative shall maintain a fixed service base within 40 miles of the purchaser's fire station. This facility must provide heated, protected, indoor storage for the apparatus while service is being performed. Pictures of the facility must be provided as part of the bidder's bid package. 4)The bidder or representative must, in addition, have at least five (5) mobile service vans with service and maintenance supplies and tools to perform normal maintenance and repairs in the purchaser's fire station. 5)The bidder or representative shall employ on a full time basis a minimum of five technicians who are factory trained in the service and repair of the chassis, apparatus, the fire pump, and if applicable, the aerial device being bid. A listing of service department personnel with their experience and training shall accompany this bid. A minimum of three (3) Level 3 EVT technicians shall be employed. 6)The bidder or representative shall employ on a full time basis a minimum of two (2) technicians who have obtained the highest level of technician certification in the bidder's service program. Proof of this certification shall be made available upon request. 7)The bidder or representative shall through its own facilities, or through closely controlled sublet facilities, be capable of providing all maintenance and service required on the apparatus being bid within a 40 mile radius of the fire station of the purchaser; and in no case shall it be necessary for the purchaser to return the apparatus to the manufacturing facility in order to obtain routine service or repairs. 8)The bidder or representative shall respond to all "out of service" calls within 24 hours of notification by the purchaser. **USE OF BRAND NAMES IN THESE SPECIFICATIONS** Whenever in these specifications a brand or manufacturer's name is utilized, it is included for descriptive purposes only. Products that are equivalent to that provided by the individual brand		

	Bidder Complies	
	Yes	No
or manufacturer's name may be substituted provided that documentation satisfactory to the purchaser is furnished establishing such equivalency. **FAILURE TO PROVIDE SUPPORTING DOCUMENTATION FOR NONE SPECIFIED BRANDS TO ESTABLISH EQUIVALENCY, OR RELIANCE ON BID PROPOSAL TEXT TO ESTABLISH EQUIVALENCY SHALL NOT DEEMED NOT CONFORMING AND GROUNDS FOR AUTOMATIC REJECTION OF THE BID.**		
FABRICATION AND ASSEMBLY		
The fire apparatus fabrication and assembly may be performed at separate facilities (i.e. chassis built in on facility, body in another, and aerials device in another).Either the bidding manufacturer or their parent company must wholly own the means and methods of operation at each facility. Partial ownership by either the bidding manufacturer or the parent company is NOT acceptable. **A PROPOSAL FROM A BIDDER WHO DOES NOT MEET THIS REQUIREMENT WILL BE DEEMED NON-CONFORMING AND NOT BE CONSIDERED.**		
The operations at any subassembly facilities shall be located within the boundaries of one state and shall be no more than 60 miles from the final assembly facility of the bidding manufacturer. The purchaser must have the ability to meet with engineers for all phases of construction, observe all aspects of construction, and inspect the facilities during the course of a single inspection visit to the final assembler to enable purchaser to make complete and informed decisions. **PROPOSALS THAT REQUIRED TRIPS EXCEEDING 60 MILES FROM THE MAIN FACILITY OR REQUIRE TRIPS INTO NUMEROUS STATES WILL BE DEEMED NON-CONFORMING AND NOT CONSIDERED.**		
AFTERMARKET SUPPORT WEBSITE		
A Customer Service website shall provide authorized dealers access to comprehensive information pertaining to the maintenance and service of their customer's apparatus. This tool shall provide the authorized dealer the ability to service and support their customers to the best of their ability with factory support at their fingertips.		
This website shall also be accessible to the end user through the guest login. Limited access is available and vehicle specific parts information accessible by entering a specific VIN number. All end users should see their local authorized dealer for additional support and service.		
The website shall provide the following to the designated individuals:		
- Authorized dealer only - ability to access truck detail information on the major components of the vehicle, warranty information, available vehicle photographs, vehicle drawings, sales options, applicable vehicle software downloads, etc.		

Specification	Bidder Complies	
	Yes	No
- Authorized dealer and customer - parts look-up capability, with the aid of digital photographs, part drawings, and assembly drawings. - Authorized dealer only - ability to electronically submit warranty claims directly to the factory for reimbursement. - Authorized dealer only - accessibility to multiple dealer reports that allow the dealership to maintain communication with the customer on the status of orders, claims, and phone contacts. - Authorized dealer and customer - access to all currently published Operation and Maintenance and Service publications. - Authorized dealer only - access to manufacturer Service Bulletins and Work Instructions containing information on current service topics and recommendations provided. - Authorized dealer and customer - access to upcoming training classes offered by the manufacturer. - Authorized dealer only - access to interactive electronic learning modules (Operators Guides) covering the operation of major vehicle components. - Authorized dealer only - access to customer service articles, corporate news, quarterly newsletters, and key contacts. **BID BOND** All bidders shall provide a bid bond as security for the bid in the form of a 10% bid bond, not to exceed $20,000, to accompany their bid. This bid bond shall be issued by a Surety Company who is listed on the U.S. Treasury Departments list of acceptable sureties as published in Department Circular 570. The bid bond shall be issued by an authorized representative of the Surety Company and shall be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond shall include language, which assures that the bidder/principal shall give a bond or bonds as may be specified in the bidding or contract documents, with good and sufficient surety for the faithful performance of the contract, including the Basic One (1) Year Limited Warranty, and for the prompt payment of labor and material furnished in the prosecution of the contract. The bidder's bonded warranty shall extend to the chassis and body, regardless of the manufacturer.		

	Bidder Complies	
	Yes	No

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

Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle shall apply only to the Basic One (1) Year Limited Warranty for such vehicle. Any surety bond related to the sale of a vehicle shall not apply to any other warranties that are included within this bid (OEM or otherwise) or to the warranties (if any) of any third party of any part, component, attachment or accessory that is incorporated into or attached to the vehicle. In the event of any contradiction or inconsistency between this provision and any other document or assertion, this provision shall prevail.

There shall be NO exception to the requirement that this bond be provided. Failure to comply will be deemed an immediate and non-curable defect and the bidder's proposal will NOT be considered.

PERFORMANCE BOND

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

Bidder and Bidder's surety agree that the Bond issued hereunder, whether expressly stated or not, also includes the surety's guarantee of the vehicle manufacturer's Bumper to Bumper warranty period included within this proposal. Owner agrees that the penal amount of this bond shall be simultaneously amended to 25 percent of the total contract amount upon satisfactory acceptance and delivery of the vehicle(s) included herein. Notwithstanding anything contained within this contract to the contrary, the surety's liability for any warranties of any type shall not exceed two (2) years from the date of such satisfactory acceptance and delivery, or the actual Bumper to Bumper warranty period, whichever is shorter.

APPROVAL DRAWING

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

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

	Bidder Complies	
	Yes	No

DRAWING, PASSENGER SIDE PUMP PANEL
A detailed drawing to scale of the passenger side pump panel shall be provided for approval prior to construction. This drawing shall include all of the gauges and controls located on the passenger side pump panel.

DRAWING, PUMP OPERATOR'S PANEL
A detailed drawing to scale of the pump operator's panel shall be provided for approval prior to construction. This drawing shall include all of the gauges and controls located on the pump operator's panel.

DIAGRAM, AS BUILT AIR BRAKE SCHEMATIC
There shall be a detailed diagram of the air brake system provided upon delivery. The diagram shall include air lines and parts that shall be located within the system.

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

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

TARGET OVERALL HEIGHT
The target overall height of the apparatus shall be 10' 10".

WHEELBASE
The wheelbase of the vehicle shall be no greater than 235.50".

GVW RATING
The gross vehicle weight rating shall be a minimum of 49,800 lbs..

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

The side rails shall have a 13.38" tall web over the front and mid sections of the chassis, with a continuous smooth taper to 10.75" over the rear axle, no exception.

Specification

	Bidder Complies	
	Yes	No
Each rail shall have a section modulus of 25.992 cubic inches and a resisting bending moment (rbm) of 3,119,040 in-lb over the critical regions of the frame assembly, with a section modulus of 18.96 cubic inches with an rbm of 2,275,200 in-lb over the rear axle.		
The frame rails shall be constructed of 120,000 psi yield strength heat-treated 0.38" thick steel with 3.50" wide flanges.		
FRAME REINFORCEMENT In addition, a mainframe inverted "L" liner shall be provided. It shall be heat-treated steel measuring 12.00" x 3.00" x 0.25". Each liner shall have a section modulus of 7.795 cubic inches, yield strength of 110,000 psi, and rbm of 857,462 in-lb. Total rbm at wheelbase center shall be 3,976,502 in-lb.		
The frame liner shall be mounted inside of the chassis frame rail and extend the full length of the frame.		
FRONT NON DRIVE AXLE The front axle shall be of the independent suspension design with a ground rating of 22,800 lb.		
Upper and lower control arms shall be used on each side of the axle. Upper control arm castings shall be made of 100,000 psi yield strength 8630 steel and the lower control arm casting shall be made of 55,000 psi yield ductile iron.		
The center cross members and side plates shall be constructed out of 80,000 psi yield strength steel.		
Each control arm shall be mounted to the center section using elastomer bushings. These rubber bushings shall rotate on low friction plain bearings and be lubricated for life. Each bushing shall also have a flange end to absorb longitudinal impact loads, reducing noise and vibrations.		
There shall be nine (9) grease fittings supplied, one (1) on each control arm pivot and one (1) on the steering gear extension.		
The upper control arm shall be shorter than the lower arm so that wheel end geometry provides positive camber when deflected below rated load and negative camber above rated load.		
Camber at load shall be 0 degrees for optimum tire life.		
The ball joint bearing shall be of low friction design and be maintenance free.		
Toe links that are adjustable for alignment of the wheel to the center of the chassis shall be provided.		
The wheel ends must have little to no bump steer when the chassis encounters a hole or obstacle.		

Specification

	Bidder Complies	
	Yes	No
The steering linkage shall provide proper steering angles for the inside and outside wheel, based on the vehicle wheelbase.		
The axle shall have a third party certified turning angle of 45 degrees. Front discharge, front suction, or aluminum wheels shall not infringe on this cramp angle.		
FRONT SUSPENSION Front independent suspension shall be provided with a minimum ground rating of 22,800 lb.		
The independent suspension system shall be designed to provide maximum ride comfort. The design shall allow the vehicle to travel at highway speeds over improved road surfaces and at moderate speeds over rough terrain with minimal transfer of road shock and vibration to the vehicle's crew compartment. (Air bag front suspensions shall not be accepted.		
Each wheel shall have torsion bar type spring. In addition, each front wheel end shall also have energy absorbing jounce bumpers to prevent bottoming of the suspension.		
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 be put through a durability test that has simulated a minimum of 140,000 miles of inner city driving.		
FRONT SHOCK ABSORBERS KONI heavy-duty telescoping shock absorbers shall be provided on the front suspension.		
FRONT OIL SEALS Oil seals with viewing window shall be provided on the front axle.		
FRONT TIRES Front tires shall be Goodyear® 425/65R22.50 radials, 20 ply G296 MSA tread, rated for 22,800 lb maximum axle load and 68 mph maximum speed.		
The tires shall be mounted on Alcoa 22.50" x 12.25" polished aluminum disc type wheels with a ten (10)stud, 11.25" bolt circle.		
REAR AXLE The rear axle shall be a Meritor™, Model RS-26-185, with a capacity of 27,000 lb.		

	Bidder Complies	
	Yes	No

TOP SPEED OF VEHICLE

A rear axle ratio shall be furnished to allow the vehicle to reach a top speed of 65 MPH.

REAR SUSPENSION

The rear springs shall be Standens semi-elliptical, 3.00" x 52.00", 12 leaves main with a ground rating of 27,000 lb. Spring hangers shall be castings with provisions for lubrication. The grease fittings shall be 90 degree type and shall be accessible without removing the wheels or cutting any sheet metal. Two (2) top leaves shall wrap the forward spring hanger pin and the top leaf shall wrap the rear spring hanger pin on both the front and rear suspensions.

Kaiser spring pins shall be provided, with double figure-eight grease grooves and a layer of electroless nickel plating, 1.0 mil thick, around the entire pin. The bushing that holds the spring pin in place shall also have a grease groove.

REAR OIL SEALS

Oil seals shall be provided on the rear axle.

REAR TIRES

Rear tires shall be four (4) Goodyear 315/80R22.50 radials, 18 ply "all season" Regional RHD II+ (Regional Haul Drive) tread, rated for 29,560 lb maximum axle load and 75 mph maximum speed.

The tires shall be mounted on Alcoa© 22.50" x 9.00" polished aluminum disc wheels with a ten (10) stud 11.25" bolt circle.

TIRE BALANCE

All tires shall be balanced with Counteract balancing beads. The beads shall be inserted into the tire and eliminate the need for wheel weights.

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 six (6) tires.

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.

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.

	Bidder Complies	
	Yes	No
FRONT HUB COVERS Stainless steel hub covers shall be provided on the front axle. An oil level viewing window shall be provided. **REAR HUB COVERS** A pair of stainless steel high hat hub covers shall be provided on rear axle hubs. **AUTOMATIC TIRE CHAINS** One (1) pair of Rud 18 strand automatic tire chains shall be provided at the rear. The system shall be electric-over-air operated with a switch on the cab instrument panel. The system to be operable at speeds up to 35 mph. **CHROME LUG NUT COVERS** Chrome lug nut covers shall be supplied on front and rear wheels. **MUD FLAPS** Mud flaps shall be installed behind the front and rear wheels of the apparatus. **WHEEL CHOCKS** There shall be one (1) pair of folding Ziamatic, Model SAC-44-E, aluminum alloy, Quick-Choc wheel blocks with easy-grip handle provided. **WHEEL CHOCK BRACKETS** There shall be one (1) pair of Zico, Model SQCH-44-H, horizontal mounting wheel chock brackets provided for the Ziamatic, Model SAC-44-E, folding wheel chocks. The brackets shall be made of aluminum and consist of a quick release spring loaded rod to hold the wheel chocks in place. The brackets shall be mounted below the left side rear compartment. **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 particular wheel begins to lockup, a signal is shall be sent to the control unit. This control unit then shall reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control. **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		

	Bidder Complies	
	Yes	No

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. A "mud/snow" switch shall be provided on the instrument panel. Activation of the switch shall allow additional tire slip to let the truck climb out and get on top of deep snow or mud.

BRAKES

The service brake system shall be full air type.

The front brakes shall be Knorr/Bendix disc type with a 17.00" ventilated rotor for improved stopping distance.

The brake system shall be certified, third party inspected, for improved stopping distance.

The rear brakes shall be Meritor™ 16.50" x 8.63" cam operated with automatic slack adjusters.

AIR COMPRESSOR, BRAKE SYSTEM

The air compressor shall be a Bendix®, Model BA-921, with 15.80 cubic feet per minute output at 1,250 rpm.

BRAKE SYSTEM

The brake system shall include:

- Bendix® dual brake treadle valve with vinyl covered foot surface
- Heated automatic moisture ejector on air dryer
- Total air system capacity of 4,362 cubic inches
- Two (2) air pressure gauges with a red warning light and an audible alarm, that activates when air pressure falls below 60 psi
- Spring set parking brake system
- Parking brake operated by a push-pull style control valve
- A parking "brake on" indicator light on instrument panel
- Park brake relay/inversion and anti-compounding valve, in conjunction with a double check valve system, with an automatic spring brake application at 40 psi
- A pressure protection valve to prevent all air operated accessories from drawing air from the air system when the system pressure drops below 80 psi (550 kPa)

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

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

	Bidder Complies	
	Yes	No

BRAKE SYSTEM AIR DRYER
The air dryer shall be WABCO System Saver 1200 with spin-on coalescing filter cartridge and 100 watt heater.

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

AIR INLET WITH AUTOMATIC EJECT
One (1) air inlet with Kussmaul Air Eject shall be provided. It shall allow station air to be supplied to the apparatus brake system through a shoreline hose. The inlet shall automatically disconnect the air line when the truck is started. It shall be equipped with a male coupling and be located over front wheel driver side. A check valve shall be provided to prevent reverse flow of air. The inlet shall discharge into the "wet" tank of the brake system. A mating female coupling shall also be provided with the loose equipment.

AIR OUTLET
One (1) air outlet shall be installed with a female coupling and shut off valve, located on the driver side pump panel. This system shall tie into the "wet" tank of the brake system and include an 85-psi pressure protection valve in the outlet line to prevent the brake system from losing all air.

Female coupling and male fitting shall be .25" thread.

A mating male fitting shall be provided with the loose equipment.

ADDITIONAL AIR TANK
An additional air tank with 1,454 cubic inch displacement shall be provided to increase the capacity of the air system. This tank shall be dedicated for air horn use.

The air tank shall be primed and painted to meet a minimum 750 hour salt spray test. To reduce the effects of corrosion, the air tank shall be mounted with stainless steel brackets (no exception).

The output flow of the engine air compressor varies with engine rpm. Full compressor output is only achieved at governed engine speed. Engine speed may be limited by generators, pumps and other PTO driven options.

ALL WHEEL LOCK-UP
An all wheel lock-up system shall be installed which applies air to the front brakes and uses the spring brake at the rear.

Front brakes shall apply with the standard rear parking brake control.

	Bidder Complies	
	Yes	No

The all wheel lock-up system shall be operational only when the parking brake is applied, the truck transmission is in neutral and engine is running.

U-BOLT GUARD OVER PARKING BRAKE KNOB

There shall be one (1) U-bolt type protective guard(s) installed over the "Parking Brake" knob to prevent accidental activation of the brake. The guard shall be located on the passenger's side.

PARK BRAKE CONTROL (ADDITIONAL)

A second park brake control valve shall be installed on the officer side of the instrument panel. This valve shall only activate the brakes if manually pulled out; low air pressure shall not activate this valve.

ENGINE OR APPROVED EQUAL 2016 EPA APPROVED

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

Make:	Detroit™
Model:	DD13®
Power:	505 hp at 1625 rpm
Torque:	1750 lb-ft at 1075 rpm
Governed Speed:	2200 rpm
Emissions Certification:	EPA 2016 (GHG17)
Fuel:	Diesel
Cylinders:	Six (6)
Displacement:	781 cubic inches (12.8L)
Starter:	Delco Remy 39MT™
Fuel Filters:	Dual cartridge style with check valve, water separator, and water in fuel sensor

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.

HIGH IDLE

A high idle switch shall be provided, inside the cab, on the instrument panel, that shall automatically maintain a preset engine rpm. A switch shall be installed, at the cab instrument panel, for activation/deactivation.

	Bidder Complies	
	Yes	No
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."		
ENGINE BRAKE A Jacobs® engine brake is to be installed with the controls located on the instrument panel within easy reach of the driver.		
The driver shall be able to turn the engine brake system on/off and have a high, medium and low setting.		
The engine brake shall be installed in such a manner that when the engine brake is slowing the vehicle the brake lights are activated.		
The ABS system shall automatically disengage the auxiliary braking device when required.		
CLUTCH FAN A Horton® fan clutch shall be provided. The fan clutch shall be automatic when the pump transmission is in "Road" position, and fully engaged in "Pump" position.		
ENGINE HEATER A 1000 watt, 120 volt, immersion type engine heater with thermostat shall be installed. The engine heater shall be wired to the shoreline and be active whenever the shoreline is connected.		
ENGINE AIR INTAKE The air intake with an ember separator shall be mounted high on the passenger side of the cab, to the front of the crew cab door. The ember separator is designed to prevent road dirt and recirculating hot air from entering the engine.		
The ember separator shall be easily accessible through a hinged stainless steel grille, with one (1) flush quarter turn latch.		
EXHAUST SYSTEM The exhaust system shall include a diesel particulate filter (DPF) and a selective catalytic reduction (SCR) device to meet current EPA standards. The exhaust system shall be stainless steel from the turbo to the inlet of the SCR device and shall be 5.00" in diameter. An insulation wrap shall be provided on all exhaust pipes between the turbo and SCR to minimize the transfer of heat to the cab. The exhaust shall terminate horizontally ahead of the passenger side rear wheels. A tailpipe diffuser shall be provided to reduce the temperature of the exhaust as it exits. Heat deflector shields shall be provided to isolate chassis and body components from the heat of the tailpipe diffuser.		

	Bidder Complies	
	Yes	No

RADIATOR

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

For maximum cooling performance, the radiator core shall be made of copper fins having a serpentine design, soldered to brass tubes. The tubes shall be welded to brass headers using the patented Beta-Weld process for increased strength, longer road life and solder-bloom corrosion protection. The radiator core shall have a minimum frontal area of 1,396 square inches. Steel supply and return tanks shall be bolted to the core headers and steel side channels to complete the radiator assembly. The radiator shall be compatible with commercial antifreeze solutions.

The radiator shall be mounted in such a manner as to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven ground. The radiator assembly shall be isolated from the chassis frame rails with rubber isolators.

The radiator shall include an integral de-aeration tank, with a remote-mounted overflow tank. For visual coolant level inspection, the radiator shall have a built-in sight glass. The radiator shall be equipped with a 15 psi pressure relief cap.

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.

A heavy-duty fan shall draw in fresh, cool air through the radiator. Shields or baffles shall be provided to prevent recirculation of hot air to the inlet side of the radiator.

COOLANT LINES

Gates, or Goodyear, rubber hose shall be used for all engine coolant lines installed by the chassis manufacturer.

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.

FUEL TANK

A 65 gallon fuel tank shall be provided and mounted at rear of chassis. The tank shall be constructed of unpainted stainless steel. It shall be equipped with swash partitions and a vent. To reduce the effects of corrosion, the fuel tank shall be mounted with stainless steel straps. (no exception).

A .75" drain plug shall be provided in a low point of the tank for drainage.

A fill inlet shall be located on the left hand side of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Ultra Low Sulfur - Diesel Fuel Only".

	Bidder Complies	
	Yes	No
A .50" diameter vent shall be provided running from top of tank to just below fuel fill inlet.		
The tank shall meet all FHWA 393.67 requirements, including a fill capacity of 95 percent of tank volume.		
All fuel lines shall be provided as recommended by the engine manufacturer.		
DIESEL EXHAUST FLUID TANK A 4.5 gallon diesel exhaust fluid (DEF) tank shall be provided and mounted in the driver's side body rearward of the rear axle.		
A 0.50" drain plug shall be provided in a low point of the tank for drainage.		
A fill inlet shall be provided and marked "Diesel Exhaust Fluid Only". The fill inlet shall be located adjacent to the engine fuel inlet behind a common hinged, spring loaded, painted door on the driver side of the vehicle.		
The tank shall meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing.		
The tank shall include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.		
The stainless steel flip door for selecting between DEF fill and the diesel fill shall be spring loaded to default to covering the DEF fill.		
AUXILIARY FUEL PUMP An auxiliary electric fuel pump shall be added to the fuel line for priming the engine. A switch located on the cab instrument panel shall be provided to operate the pump.		
FUEL SHUTOFF A shutoff valve shall be installed in the fuel line, at the fuel tank.		
FUEL COOLER An air to fuel cooler shall be installed in the engine fuel return line.		
TRANSMISSION An Allison 5th generation, Model EVS 4000P, electronic, torque converting, automatic transmission shall be provided.		
The transmission shall be equipped with prognostics to monitor oil life, filter life, and transmission health. A wrench icon on the shift selector's digital display shall indicate when service is due.		

	Bidder Complies	
	Yes	No
Two (2) PTO openings shall be located on left side and top of converter housing (positions 8 o'clock and 1 o'clock).		
A transmission temperature gauge with red light and buzzer shall be installed on the cab instrument panel.		
TRANSMISSION SHIFTER A six (6)-speed push button shift module with the 4 + 2 "Mode" button shall be mounted to right of driver on console. Shift position indicator shall be indirectly lit for after dark operation.		
The Allison shifter shall be a "double-digit" display model.		
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.		
TRANSMISSION COOLER A transmission oil cooler shall be provided that is integral to the radiator and located at the bottom of the radiator. The cooler shall use engine coolant to control the transmission oil temperature.		
DRIVELINE Drivelines shall be a heavy-duty metal tube and be equipped with Spicer® 1810 universal joints.		
The shafts shall be dynamically balanced before installation.		
A splined slip joint shall be provided in each driveshaft. The slip joint shall be coated with Glidecoat® or equivalent.		
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.		
A tilt and telescopic steering column shall be provided to improve fit for a broader range of driver configurations.		
STEERING WHEEL The steering wheel shall be 18.00" in diameter, have tilting and telescoping capabilities, and a four (4)-spoke design.		
There shall be a switch pod provided on each side of the steering wheel between the spokes. The switch pods shall be an integral part of the steering wheel. Each switch pod shall contain four (4) switches. The following switches shall be provided:		

	Bidder Complies	
	Yes	No
Air horn		
Emergency lighting		
Area lighting		
Front dome light		
Rear dome light		
Q2B siren activate		
Q2B siren brake		
Wiper mist		
Full floating horn pad		

LOGO AND CUSTOMER DESIGNATION ON DASH

The dash panel shall have an emblem containing the fire apparatus manufacturer's logo and customer name. The emblem shall have three (3) rows of text for the customer's department name. There shall be a maximum of eight (8) characters in the first row, 11 characters in the second row and 11 characters in the third row.

The first row of text shall be: SECAUCAS

The second row of text shall be: FIRE DEPT

The third row of text shall be: ENGINE 4

BUMPER

A one (1) piece, ten (10) gauge, 304-2B type polished stainless steel bumper, a minimum of 10.00" high, shall be attached to a bolted modular extension frame constructed of 50,000 psi tensile steel "C" channel mounted directly behind it to provide adequate support strength.

The bumper shall be extended 22.00" from front face of cab.

Documentation shall be provided, upon request to show that the options selected have been engineered for fit-up and approval for this modular bumper extension. A chart shall be provided to indicate the option locations and shall include, but not be limited to the following options: air horns, mechanical sirens, speakers, hose trays (with hose capacities), winches, lights, discharge, and suction connections.

Specification

	Bidder Complies	
	Yes	No

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.

HOSE TRAY
A hose tray, constructed of aluminum, shall be placed in the center of the bumper extension.

The tray shall have a capacity of 25' of 5.00" double jacket cotton-polyester hose.

Black rubber grating shall be provided at the bottom of the tray. Drain holes shall also be provided.

CENTER HOSE TRAY RESTRAINT
There shall be one (1) pair of hose tray restraint straps located over the center mounted tray.

The restraints shall be a pair of 2.00" wide black nylon straps with Velcro® fasteners provided. The strap(s) shall be used to secure the hose in the tray.

LEFT SIDE HOSE TRAY
A hose tray shall be placed in the left side of the extended bumper.

The tray shall have a capacity of 100' of 1.75" double jacket cotton-polyester hose.

Black rubber grating shall be provided at the bottom of the tray. Drain holes shall be provided.

BUMPER HOSE RESTRAINT
There shall be one (1) pair hose tray restraint straps located over the left side mounted tray.

The restraints shall be a pair of 2.00" wide black nylon straps with Velcro fasteners provided. The strap(s) shall be used to secure the hose in the tray.

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.

The lift and tow mounts with eyes shall be painted the same color as the frame.

TOW HOOKS
No tow hooks are to be provided. This truck shall be equipped with a lift and tow package with integral tow eyes.

	Bidder Complies	
	Yes	No

FRONT BUMPER LINE-X COATING

Protective black Line-X® coating shall be provided on the outside exterior of the top front bumper flange. It shall not be sprayed on the underside of the flange.

The lining shall be properly installed by an authorized Line-X dealer.

CAB

The cab shall be designed specifically for the fire service and shall be manufactured by the chassis builder.

The cab shall be built by the apparatus manufacturer in a facility located on the manufacturer's premises (no exception).

For reasons of structural integrity and enhanced occupant protection, the cab shall be of heavy duty design, constructed to the following minimal standards.

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. The B-pillar and C-pillar shall be constructed from 0.25" heavy wall extrusions. The rear wall shall be constructed of two (2) 4.00" x 2.00" outer aluminum extrusions and two (2) 3.00" x 2.00" inner aluminum extrusions. All main vertical structural members shall run from the floor to 6.50" x 4.875" x 0.1875" thick roof extrusions to provide a cage-like structure with the A-pillar and roof extrusions being welded into a 0.36" thick corner casting at each of the front corners of the roof assembly.

The front of the cab shall be constructed of a 0.25" thick gusset plate, covered with a 0.090" front skin (for a total thickness of 0.34"), and reinforced with a 95.00" wide x 11.13" deep x 0.50" thick cross-cab support located just below the windshield. The cross-cab support shall run the full width of the cab and weld to each A-pillar, the 0.25" thick gusset plate and the front skin.

The cab floors shall be constructed of 0.1875" thick aluminum plate and reinforced at the firewall with an additional 0.50" thick cross-floor support providing a total thickness of 0.6875" of structural material at the front floor area. The front floor area shall also be supported with one (1) 0.50" plate bolted to one (1) 0.78" plate that also provides the mounting point for the cab lift. This tubing shall run from the front of the cab to the 0.187" thick engine tunnel, creating the structure to support the forces created when lifting the cab.

The cab shall be 94.75" wide (outside door skin to outside door skin) to maintain maximum maneuverability (no exception).

The forward cab section shall have an overall height (from the cab roof to the ground) of approximately 103.00". The crew cab section shall have a 10.00" raised roof, with an overall cab height of approximately 113.00". The overall height listed shall be calculated based on a truck

	Bidder Complies	
	Yes	No
configuration with the lowest suspension weight ratings, the smallest diameter tires for the suspension, no water weight, no loose equipment weight, and no personnel weight. Larger tires, wheels, and suspension shall increase the overall height listed.		
The floor to ceiling height inside the crew cab shall be 64.00" in the center and 69.25" in the outboard positions.		
The crew cab floor shall measure 54.12" from rear wall to the back side of engine tunnel.		
The engine tunnel, at the rearward highest point (knee level), shall measure 61.75" to the back wall.		
The crew cab shall be of the totally enclosed design with access doors constructed in the same manner as the driver and passenger doors.		
The cab shall be a full tilt cab style.		
A 3-point cab mount system with rubber isolators shall improve ride quality by isolating chassis vibrations from the cab.		
INTERIOR CAB INSULATION The cab shall include 1.50" insulation in the ceiling and side walls, and 2.00" insulation in the rear wall to maximize acoustic absorption and thermal insulation.		
FENDER LINERS Full circular inner fender liners in the wheel wells shall be provided.		
WINDSHIELD A curved safety glass windshield shall be provided with over 2,754 square inches of clear viewing area. The cab windshield shall have bright trim inserts in the rubber molding holding the glass in place. Economical windshield replacement glass shall be readily available from local auto glass suppliers.		
All cab glass shall be tinted.		
WINDSHIELD WIPERS Two (2) electric windshield wipers with washer shall be provided that meet FMVSS and SAE requirements.		
The washer reservoir shall be able to be filled without raising the cab.		
GLOVE BOX A glove box with a drop-down door shall be installed in the front dash panel in front of the officer's position.		

	Bidder Complies	
	Yes	No

ENGINE TUNNEL

Engine hood side walls shall be constructed of 0.50" aluminum. The top shall be constructed of 0.19" aluminum and shall be tapered at the top to allow for more driver and passenger elbow room.

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.

CAB REAR WALL EXTERIOR COVERING

The exterior surface of the rear wall of the cab shall be overlaid with bright aluminum treadplate except for areas that are not typically visible when the cab is lowered.

CAB LIFT

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

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

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

The engine shall be easily accessible and capable of being removed with the cab tilted. The cab shall be capable of tilting 45 degrees and 90 degrees with crane assist.

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

The hydraulic cylinders shall be equipped with a velocity fuse that protects the cab from accidentally descending when the control is located in the tilt position.

For increased safety, a redundant mechanical stay arm shall be provided that must be manually put in place on the driver 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.

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.

GRILLE

A bright finished aluminum mesh grille screen, inserted behind a bright finished grille surround, shall be provided on the front center of the cab.

	Bidder Complies	
	Yes	No

DOOR JAMB SCUFFPLATES

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

SCUFFPLATES, REAR CAB CORNER GUARDS

Both rear cab corners shall be furnished with a full height, brushed stainless steel corner guard scuffplate. The guard shall extend 1.00" from the corner to protect paint from damage when pulling items (such as booster hose) around the cab.

MIRRORS

A Retrac, Model 613423, dual vision, motorized, west coast style mirror, with chrome finish, shall be mounted on each side of the front cab door with spring loaded retractable arms. The flat glass and convex glass shall be heated and adjustable with remote control within reach of the driver.

DOORS

To enhance entry and egress to the cab, the forward cab doors shall be a minimum of 37.50" wide x 74.25" high. The crew cab doors shall be located on the sides of the cab and shall be constructed in the same manner as the forward cab doors. The crew cab doors shall measure a minimum of 34.88" wide x 84.25" high.

The forward cab and crew cab doors shall be constructed of extruded aluminum with a nominal material thickness of 0.125". The exterior door skins shall be constructed from 0.090" aluminum.

A flush mounted, chrome plated paddle type door handle shall be provided on the exterior of each cab door. Each door shall also be provided with an interior flush paddle handle.

The cab doors shall be provided with both interior (rotary knob) and exterior (keyed) locks as required by FMVSS 206. The locks shall be capable of activating when the doors are open or closed. The doors shall remain locked if locks are activated when the doors are opened, then closed.

A 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.

A chrome grab handle shall be provided on the inside of each cab and crew cab door.

The cab steps at each cab door location shall be located inside the cab doors to protect the steps from weather elements.

	Bidder Complies	
	Yes	No

DOOR PANELS

There shall be a full height brushed stainless steel door panel installed on the inside of all cab doors. The cab door panels shall be removable without disconnecting door and window mechanisms.

ELECTRIC OPERATED CAB DOOR WINDOWS

All four (4) cab doors shall be equipped with electric operated windows with flush mounted automotive style switches.

The driver's side lower instrument panel shall also have three (3) controls, officer's door window and both crew cab door windows.

CAB STEPS

The forward cab and crew cab access steps shall be a full size two (2) step design to provide largest possible stepping surfaces for safe ingress and egress. The bottom steps shall be designed with a grip pattern punched into bright aluminum treadplate material to provide support, slip resistance, and drainage. The bottom steps shall be a bolt-in design to minimize repair costs should they need to be replaced. The forward cab steps shall be a minimum 24.75" wide, and the crew cab steps shall be 21.25" wide with an 8.00" minimum depth. The inside cab steps shall not exceed 18.00" in height and be limited to two (2) steps. Three (3) step entrance designs shall not be acceptable due to safety concerns. A slip-resistant handrail shall be provided adjacent to each cab door opening to assist during cab ingress and egress.

STIRRUP STEPS

Hinged, swing style stirrup steps shall be provided below each cab and crew cab door.

The stirrup step shall be lit by a white 12 volt DC LED light provided on the step.

The step light shall be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body step lights.

STEP LIGHTS

For reduced overall maintenance costs compared to incandescent lighting, there shall be four (4) white LED step lights provided. The lights shall be installed at each cab and crew cab door, one (1) per step. The lights shall be located in the driver side front doorstep, driver side crew cab doorstep, passenger side front doorstep and passenger side crew cab doorstep.

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

The lights shall be activated when the adjacent door is opened.

	Bidder Complies	
	Yes	No

FENDER CROWNS

Stainless steel fender crowns shall be installed at the cab wheel openings. The fender crowns shall have a radius outside corner that allows the fender crown to extend beyond the side wall of the front tires and also allow the crew cab doors to open fully.

CREW CAB WINDOWS

One (1) fixed window with tinted glass shall be provided on each side of the cab, to the rear of the front cab door. The windows shall be sized to enhance light penetration into the cab interior. The windows shall measure 17.50" wide x 21.00" high.

One (1) fixed window with tinted glass shall be provided on each side of the cab, to the rear of the crew cab door. The windows shall measure 17.50" wide x 21.00" high.

The rear wall of the crew cab shall have two (2) windows, each being 11.29" wide x 17.95" high.

WINDOW TINT

Crew cab windows shall be tinted with 8 percent light transmission tint (shall block 92 percent of visible light). The following windows are included:

- Crew cab side windows
- Crew cab door, roll-up windows
- Top fixed window in crew cab doors
- Rear opera windows (If applicable)
- All windows in raised roof (If applicable)

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 24.75" wide x 13.12" high x 26.50" deep (driver side) and 22.50" deep (passenger side). The top 7.38" of the upper compartment shall be full width (transverse) of the crew cab. The lower section on both sides shall be 24.75" wide x 16.75" high x 16.50" deep. The front of the driver side lower compartment shall have a 6.00" wide x 5.00" deep blister to provide clearance to the cab lift pump. The compartment shall extend from the bottom of the cab to top of the seat riser.

There shall be an access door on both sides of the cab with reverse hinged double pan doors.

Doors shall be latched with recessed, polished stainless steel "D" ring handles and Eberhard 106 locks. The doors shall include gas shock style positive door holders.

	Bidder Complies	
	Yes	No
There shall be one (1) drop down door, single pan construction, on the forward face of the seat riser. Drop down door shall include two (2) flush quarter turn latches. The crew cab door grab handles shall be located above the side compartment doors. The cab side access doors shall be painted to match the cab exterior and the drop down door inside the cab shall be constructed of polished stainless steel. **EXTERIOR ACCESS LIGHTING** Exterior compartment access lighting shall consist of eight (8) white LED strip lights, one (1) each side of lower and upper exterior compartment door opening. **SLIDING TRAY** There shall be two (2) sliding trays provided in the cab transverse compartment, one (1) on each side. Locks shall be provided to hold the tray while in the stowed position or fully extended to the sides of the cab. The trays shall be 17.00" wide x 42.00" long and have a 3.00" lip on four (4) sides. The trays shall be fabricated from aluminum and shall be painted to match the compartment interior. **SCUFFPLATE** A full-height brushed stainless steel scuffplate shall be installed on the inside of each of the extended cab compartment door pans. **MOUNTING PLATE ON ENGINE TUNNEL** Equipment installation provisions shall be installed on the engine tunnel. A .188" aluminum plate shall be bolted to the top surface of the engine tunnel, including the wire raceway cover behind the driver seat and the angled portion of the blister for the engine. The plate shall be spaced off the engine tunnel .75" to allow for wire routing below the plate. The mounting surface shall be painted to match the cab interior. **EQUIPMENT MOUNTING SHELF** There shall be one (1) shelves for permanent mounting of equipment provided. Each shelf shall have a 2.00" lip around the edge. The size of the shelves shall be 10" deep X full width if interior of crew cab back wall over forward facing seats. Each shelf shall be fabricated from aluminum and shall be painted to match the cab interior. The shelves shall be located full width side to side.		

	Bidder Complies	
	Yes	No
Not intended for storage of loose equipment. Items stored on tray shall be permanently attached to meet NFPA requirements.		
CAB INTERIOR The left and right side dash and center console shall be a flat faced design to provide easy maintenance and shall be constructed out of painted aluminum.		
The engine tunnel shall be padded and covered with 46 ounce leather grain vinyl resistant to oil, grease and mildew.		
The headliner shall be installed in both forward and rear cab sections. Headliner material shall be vinyl. A sound barrier shall be part of its composition. Material shall be installed on aluminum sheet and securely fastened to interior cab ceiling.		
Forward portion of cab headliner shall provide easy access for servicing electrical wiring or for other maintenance needs without removing the entire unit.		
CAB INTERIOR UPHOLSTERY The cab interior upholstery shall be black.		
CAB INTERIOR PAINT The cab interior metal surfaces shall be painted black, vinyl texture paint.		
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.		
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, for no water absorption, which offers a sound dampening material for reducing sound levels.		
CAB DEFROSTER There shall be a 41,000 BTU defroster in the cab located under the engine tunnel.		
The defroster ventilation shall be built into the design of the cab dash instrument panel and shall be easily removable for maintenance.		
The defroster shall have a 3-speed blower and temperature controls accessible to the driver and officer.		
The defroster ducts shall be designed to provide maximum defrosting capabilities for the front cab windows.		

	Bidder Complies	
	Yes	No

CAB/CREW CAB HEATER

Two (2) auxiliary heaters with 32,000 BTU each shall be provided in the cab. The heaters shall have a 3-speed blower and temperature controls accessible to the driver and officer. There shall also be louvers located below the rear facing seat riser and below the driver and officer positions for airflow.

The heaters shall be mounted, one (1) within each rear facing seat riser.

AIR CONDITIONING

A high-performance, customized air conditioning system shall be furnished inside the cab and crew cab. A 19.10 cubic inch compressor shall be installed on the engine.

The air conditioning system shall be capable of cooling the average cab temperature from 100 degrees Fahrenheit to 72 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.

A roof-mounted condenser that meets and exceeds the performance specification shall be installed on the cab roof. Mounting the condenser below the cab or body would reduce the performance of the system and shall not be acceptable.

An evaporator unit that meets and exceeds the performance specification shall be installed in the cab, located in the center of the cab ceiling over the engine tunnel. The evaporator shall include two (2) high performance cores and plenums with multiple outlets, one (1) plenum directed to the front and one (1) plenum directed to the rear of the cab.

The evaporator unit shall be provided with adjustable air outlets strategically located to direct air flow to the driver, officer and crew cab area.

All hose used shall be class 1 type to reduce moisture ingression into the air conditioning system.

The air conditioner refrigerant shall be R-134A and shall be installed by a certified technician.

The air conditioner shall be controlled by a single electronic control panel. For ease of operation, the control panel shall include variable adjustment for temperature and fan control and be conveniently located on the dash in clear view of the driver. The control panel shall include robust knobs for both fan speed and temperature adjustment.

SUN VISORS

Two (2) smoked Lexan™ sun visors provided. The sun visors shall be located above the windshield with one (1) mounted on each side of the cab.

There shall be no retention bracket provided to help secure each sun visor in the stowed position.

	Bidder Complies	
	Yes	No

GRAB HANDLE

A black rubber covered grab handle shall be mounted on the lower portion of the driver's side cab entrance to assist in entering the cab. The grab handle shall be securely mounted to the post area between the door and steering wheel column.

An additional black rubber covered grab handle shall be mounted on the driver's side door post of the driver's side cab door to assist in entering the cab. The grab handle shall be securely mounted to the post area between the door and windshield.

A black rubber covered grab handle shall be mounted on the passenger's side door post, above the instrument panel.

ENGINE COMPARTMENT LIGHTS

There shall be one (1) Whelen, Model 3SC0CDCR, 12 volt DC, 3.00" white LED light(s) with Whelen, Model 3FLANGEC, chrome flange kit(s) installed under the cab to be used as engine compartment illumination.

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. The door shall be 17.75" wide x 12.75" high and be flush with the wall of the engine tunnel.

The engine oil dipstick shall allow for checking only. The transmission dipstick shall allow for both checking and filling. An additional port shall be provided for filling the engine oil.

The door shall have a rubber seal for thermal and acoustic insulation. One (1) flush latch shall be provided on the access door.

SEATING CAPACITY

The seating capacity in the cab shall be eight (8).

DRIVER SEAT

A seat shall be provided in the cab for the driver. The seat design shall be a cam action type, with air suspension. For increased convenience, the seat shall include a manual control to adjust the horizontal position (6.00" travel). The manual horizontal control shall be a towel-bar style located below the forward part of the seat cushion. To provide flexibility for multiple driver configurations, the seat shall have an adjustable reclining back. The seat back shall be a high back style with side bolster pads for maximum support. For optimal comfort, the seat shall be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control).

Specification

	Bidder Complies	
	Yes	No
The seat shall be furnished with a 3-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.		
OFFICER SEAT A seat shall be provided in the cab for the passenger. The seat shall be a fixed type, with no suspension. For optimal comfort, the seat shall be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle that shall activate an alarm indicating a seat is occupied but not buckled.		
The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.		
The seat shall be furnished with a 3-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.		
RADIO COMPARTMENT A radio compartment shall be provided under the officer's seat.		
The inside compartment dimensions shall be 14.00" wide x 7.50" high x 14.50" deep.		
A drop-down door with a chrome plated lift and turn latch shall be provided for access.		
The compartment shall be constructed of smooth aluminum and painted to match the cab interior.		
REAR FACING DRIVER SIDE OUTBOARD SEAT There shall be one (1) rear facing seat provided at the driver side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 15.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle that shall activate an alarm indicating a seat is occupied but not buckled.		
The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA		

	Bidder Complies	
	Yes	No

cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.

The seat shall be furnished with a 3-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.

REAR FACING PASSENGER SIDE OUTBOARD SEAT

There shall be one (1) rear facing seat provided at the passenger side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 15.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle that shall activate an alarm indicating a seat is occupied but not buckled.

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

The seat shall be furnished with a 3-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.

FORWARD FACING DRIVER SIDE OUTBOARD SEAT

There shall be one (1) forward facing, seat provided at the driver side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 15.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle, that shall activate an alarm indicating a seat is occupied but not buckled.

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

The seat shall be furnished with a three (3)-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing

	Bidder Complies	
	Yes	No

easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.

FORWARD FACING CENTER SEATS

There shall be two (2) forward facing seats provided at the center position in the crew cab. For optimal comfort, the seats shall be provided with 15.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seats shall be equipped with seat belt sensors in the seat cushion and belt receptacle that shall activate an alarm indicating a seat is occupied but not buckled.

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

The seats shall be furnished with 3-point shoulder type seat belts. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion providing easy accessibility. The seat belts shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.

FORWARD FACING PASSENGER SIDE OUTBOARD SEAT

There shall be one (1) forward facing, seat provided at the passenger side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 15.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle, that shall activate an alarm indicating a seat is occupied but not buckled.

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

The seat shall be furnished with a three (3)-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.

OVERHEAD STORAGE COMPARTMENT

There shall be an overhead rear-facing storage compartment installed at the raised roof within the crew cab. The compartment shall be 74.00" wide x 10.00" high x 12.00" deep.

	Bidder Complies	
	Yes	No
The compartment shall include four (4) lift up compartment doors. Non-locking latch paddle handle latches and gas operated stay arms shall be provided. The compartment shall be provided with a divider between each door opening. The compartment shall be constructed of smooth aluminum and painted to match the cab interior. **SEAT UPHOLSTERY** All seat upholstery shall be black Turnout Tuff material. **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. There shall be a quantity of seven (7) SCBA brackets. **SEAT EMBROIDERY** The seats in the cab and crew cab shall be provided with custom embroidery. The Fire Department shall determine what the embroidery shall be by providing pictures at the time of order. The embroidery shall be provided on eight (8) seats. **SEAT BELTS** All seating positions in the cab and crew cab shall have red seat belts. The belts shall also include the Ready Reach® D-loop assembly to the shoulder belt system. The Ready Reach feature adds an extender arm to the D-loop location placing the D-loop in a closer, easier to reach location. **SHOULDER HARNESS HEIGHT ADJUSTMENT** All seating positions furnished with 3-point shoulder type seat belts shall include a height adjustment. This adjustment shall optimize the belts effectiveness and comfort for the seated firefighter.		

	Bidder Complies	
	Yes	No

SEAT BELT MONITORING SYSTEM

A seat belt monitoring system (SBMS) shall be provided. The SBMS shall be capable of monitoring up to ten (10) seat positions indicating the status of each seat position with a green or red LED indicator as follows:

- Seat Occupied & Buckled = Green
- Seat Occupied & Unbuckled = Red
- No Occupant & Buckled = Red
- No Occupant & Unbuckled = Not Illuminated

Audible Alarm

The SBMS shall include an audible alarm that shall be activated when a red illumination condition exists and the parking brake is released, or a red illumination condition exists and the transmission is not in park.

HELMET STORAGE, PROVIDED BY FIRE DEPARTMENT

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

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

CAB DOME LIGHTS

There shall be six (6) dual LED dome lights with black bezels provided. Two (2) lights shall be mounted above the inside shoulder of the driver and officer and four (4) lights shall be installed and located, two (2) on each side of the crew cab.

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

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

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

In order to ensure exceptional illumination, each white LED dome light shall provide a minimum of 10.1 foot-candles (fc) covering an entire 20.00" x 20.00" square seating position when mounted 40.00" above the seat.

OVERHEAD MAP LIGHTS

There shall be two (2) Peterson, Model M371S, rectangular LED adjustable map lights installed in the cab:

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

	Bidder Complies	
	Yes	No

Each light shall include a switch on the light housing.

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

HAND HELD LIGHT

There shall be four (4) Streamlight, Fire Vulcan, Model #44451, hand lights provided with a vehicle mount with 12VDC direct wire charging rack and quick release buckle strap mounted at pickup.

Each light housing shall be orange in color and be provided with a C4, LED and two (2) "ultra bright blue tail light LEDs" The tail light LEDs shall have a dual mode of blinking or steady.

CAB INSTRUMENTATION

The cab instrument panel shall consist of gauges, an LCD display, telltale indicator lights, alarms, control switches, and a diagnostic panel. The function of instrument panel controls and switches shall be identified by a label adjacent to each item. Actuation of the headlight switch shall illuminate the labels in low light conditions. Telltale indicator lamps shall not be illuminated unless necessary. The cab instruments and controls shall be conveniently located within the forward cab section directly forward of the driver. Gauge and switch panels shall be designed to be removable for ease of service and low cost of ownership.

CAB INTERIOR

The wrap-around style high impact ABS plastic cab dash fascia shall be designed to provide unobstructed visibility to instrumentation. The dash layout shall provide the driver with a quick reference to gauges that allows more time to focus on the road.

GAUGES

The gauge panel shall include the following ten (10) ivory gauges with chrome bezels to monitor vehicle performance:

- Voltmeter Gauge (Volts):
  - Low volts (11.8 VDC)
    - Amber indicator on gauge assembly with alarm
  - High volts (15 VDC)
    - Amber indicator on gauge assembly with alarm
  - Very low volts (11.3 VDC)
    - Amber indicator on gauge assembly with alarm
  - Very high volts (16 VDC)
    - Amber indicator on gauge assembly with alarm
- Tachometer (RPM)
- Speedometer (Primary (outside) MPH, Secondary (inside) Km/H)
- Fuel Level Gauge (Empty - Full in fractions):

	Bidder Complies	
	Yes	No

- Low fuel (1/8 full)
    - Amber indicator on gauge assembly with alarm
- Very low fuel (1/32) fuel
    - Amber indicator on gauge assembly with alarm

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

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

INDICATOR LAMPS

To promote safety, the following telltale indicator lamps shall be integral to the gauge assembly and are located above and below the center gauges. The indicator lamps shall be "dead-front" design that is only visible when active. The colored indicator lights shall have descriptive text or symbols.

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)

	Bidder Complies	
	Yes	No

- Caution (triangle symbol)
- Water in fuel
- DPF (engine diesel particulate filter regeneration)
- Trailer ABS (where applicable)
- Wait to start (where applicable)
- HET (engine high exhaust temperature) (where applicable)
- ABS (antilock brake system)
- MIL (engine emissions system malfunction indicator lamp) (where applicable)
- SRS (supplemental restraint system) fault (where applicable)
- DEF (low diesel exhaust fluid level)
- The following red telltale lamps shall be present:
- 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

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.

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.

Alarm silence: Any active audible alarm shall be able to be silenced by holding the ignition switch at the top position for three (3) to five (5) seconds. For improved safety, silenced audible alarms shall intermittently chirp every 30 seconds until the alarm condition no longer exists. The intermittent chirp shall act as a reminder to the operator that a caution or warning condition still exists. Any new warning or caution condition shall enable the steady or pulsing tones respectively.

	Bidder Complies	
	Yes	No

INDICATOR LAMP AND ALARM PROVE-OUT

Telltale indicators and alarms shall perform prove-out at initial power-up to ensure proper performance.

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:

- Emergency master switch: A molded plastic push button switch with integral indicator lamp shall be provided. Pressing the switch shall activate emergency response lights and siren control. A green lamp on the switch provides indication that the emergency master mode is active. Pressing the switch again disables the emergency master mode.
- Headlight / Parking light switch: A three (3)-position maintained rocker switch shall be provided. The first switch position shall deactivate all parking lights and the headlights. The second switch position shall activate the parking lights. The third switch position shall activate the headlights.
- Panel back lighting intensity control switch: A three (3)-position momentary rocker switch shall be provided. The first switch position decreases the panel back lighting intensity to a minimum level as the switch is held. The second switch position is the default position that does not affect the back lighting intensity. The third switch position increases the panel back lighting intensity to a maximum level as the switch is held.

The following standard controls shall be integral to the gauge assembly and are located below the right hand gauges. All switches have backlit labels for low light applications:

- High idle engagement switch: A two (2)-position momentary rocker switch with integral indicator lamp shall be provided. The first switch position is the default switch position. The second switch position shall activate and deactivate the high idle function when pressed and released. The "Ok To Engage High Idle" indicator lamp must be active for the high idle function to engage. A green indicator lamp integral to the high idle engagement switch shall indicate when the high idle function is engaged.
- "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.
- The following standard controls shall be provided adjacent to the cab gauge assembly within easy reach of the driver. All switches shall have backlit labels for low light applications.
- Ignition switch: A three (3)-position maintained/momentary rocker switch shall be provided. The first switch position shall deactivate vehicle ignition. The second switch position shall activate vehicle ignition. The third momentary position shall disable the

	Bidder Complies	
	Yes	No

Command Zone audible alarm if held for three (3) to five (5) seconds. A green indicator lamp shall be activated with vehicle ignition.

- Engine start switch: A two (2)-position momentary rocker switch shall be provided. The first switch position is the default switch position. The second switch position shall activate the vehicle's engine. The switch actuator is designed to prevent accidental activation.
- 4-way hazard switch: A two (2)-position maintained rocker switch shall be provided. The first switch position shall deactivate the 4-way hazard switch function. The second switch position shall activate the 4-way hazard function. The switch actuator shall be red and includes the international 4-way hazard symbol.
- Turn signal arm: A self-canceling turn signal with high beam headlight and windshield wiper/washer controls shall be provided. The windshield wiper control shall have high, low, and intermittent modes.
- Parking brake control: An air actuated push/pull park brake control valve shall be provided.
- Chassis horn control: Activation of the chassis horn control shall be provided through the center of the steering wheel.

CUSTOM SWITCH PANELS

The design of cab instrumentation shall allow for emergency lighting and other switches to be placed within easy reach of the operator thus improving safety. There shall be positions for up to three (3) switch panels in the overhead console on the driver's side, up to four (4) switch panels in the engine tunnel console facing the driver, up to three (3) switch panels in the overhead console on the officer's side and up to three (3) switch panels in the engine tunnel rear facing console accessible to both driver and officer. All switches shall have backlit labels for low light applications.

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 engine and ABS systems to provide blink codes should a problem exist. The diagnostic panel shall include the following:

- Engine diagnostic port
- Transmission diagnostic port
- ABS diagnostic port
- SRS diagnostic port (where applicable)
- Command Zone USB diagnostic port
- Engine diagnostic switch (blink codes flashed on check engine telltale indicator)

	Bidder Complies	
	Yes	No

- 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)

CAB LCD DISPLAY

A digital four (4)-row by 20-character dot matrix display shall be integral to the gauge panel. The display shall be capable of showing simple graphical images as well as text. The display shall be split into three (3) sections. Each section shall have a dedicated function. The upper left section shall display the outside ambient temperature. The upper right section shall display odometer, trip mileage, PTO hours, fuel consumption, engine hours, and other configuration specific information. The bottom section shall display INFO, CAUTION, and WARNING messages. Text messages shall automatically activate to describe the cause of an audible caution or warning alarm. The LCD shall be capable of displaying multiple text messages should more than one caution or warning condition exist.

AIR RESTRICTION INDICATOR

A high air restriction warning indicator light LCD message with amber warning indicator and audible alarm shall be provided.

- Officer Speedometer, A Class I digital display speedometer shall be provided on the officer side overhead position.

"DO NOT MOVE APPARATUS" INDICATOR

There shall be a Whelen, Model 5SR00FRR, flashing red LED indicator light located in the driving compartment. The light shall be illuminated automatically per the current NFPA requirements and labeled "Do Not Move Apparatus If Light Is On".

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

DO NOT MOVE TRUCK MESSAGES

Messages shall be displayed on the Command Zone™, color display located within sight of the driver whenever the 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).

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)

	Bidder Complies	
	Yes	No

- DS Body Door Open (Driver Side Body Door Open)
- PS Body Door Open (Passenger's Side Body Door Open)
- Rear Body Door Open
- DS Ladder Rack Down (Driver Side Ladder Rack Down)
- PS Ladder Rack Down (Passenger Side Ladder Rack Down)
- Deck Gun Not Stowed
- Lt Tower Not Stowed (Light Tower Not Stowed)
- Hatch Door Open
- Fold Tank Not Stowed (Fold-A-Tank Not Stowed)
- Aerial Not Stowed (Aerial Device Not Stowed)
- Stabilizer Not Stowed
- Steps Not Stowed
- Handrail Not Stowed

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.

SWITCH PANELS

The emergency light switch panel shall have a master switch for ease of use plus individual switches for selective control. Each switch panel shall contain up to six (6) rocker-type switches each rated for two hundred thousand (200,000) cycles. Panels with less than six (6) switches shall include indicators or blanks. The switch panel(s) shall be located in the "overhead" position above the windshield on the driver side overhead to allow for easy access.

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.

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, a one (1)-speed 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 the wipers are not in use.

	Bidder Complies	
	Yes	No

SPARE CIRCUIT

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

The above wires shall have the following features:

- The positive wire shall be connected directly to the battery power
- The negative wire shall be connected to ground
- Wires shall be protected to 15 amps at 12 volts DC
- Power and ground shall terminate officer side dash area
- Termination shall be with 15 amp, power point plug with rubber cover
- Wires shall be sized to 125 percent of the protection

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

SPARE CIRCUIT

There shall be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires shall have the following features:

- The positive wire shall be connected directly to the battery power
- The negative wire shall be connected to ground
- Wires shall be protected to 20 amps at 12 volts DC
- Power and ground shall terminate behind officer seat
- Termination shall be with 3/8" studs and plastic covers
- Wires shall be sized to 125% of the protection

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

RADIO WITH CD PLAYER

There shall be a Panasonic™, AM/FM/Weather Band stereo radio with compact disc player and auxiliary input jack installed.

The compact disc stereo radio shall be mounted within reach of the officer.

The quantity and location of the speakers shall be one (1) pair of 5.25" speakers in the cab and one (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 in an open space, on the cab roof.

Specification

	Bidder Complies	
	Yes	No

INFORMATION CENTER

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

The information center shall have the following specifications:

- Operate in temperatures from -40 to 185 degrees Fahrenheit
- 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
- A LCD display integral to the cab gauge panel shall be included as outlined in the cab instrumentation area.
- 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.

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 one (1) text message occurs, the messages shall cycle every second until the problem(s) have been resolved. The background color for the "Alert Center" shall change to indicate the severity of the "warning" message. If a warning and a caution condition occur simultaneously, the red background color shall be shown for all alert center messages.
- A label for each button shall exist. The label shall indicate the function for each active button for each screen. Buttons that are not utilized on specific screens shall have a button label with no text or symbol.

HOME/TRANSIT SCREEN

This screen shall display the following:

- Vehicle Mitigation (if equipped)

	Bidder Complies	
	Yes	No

• Water Level (if equipped)
• Foam Level (if equipped)
• 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
 	
VIRTUAL BUTTONS
There shall be four (4) virtual switch panel screens that match the overhead and lower lighting and HVAC switch panels.
 	
PAGE SCREEN
The page screen shall display the following and allow the user to progress into other screens for further functionality:
 	
• Diagnostics
  ○ Faults
  ▪ Listed by order of occurrence
  ▪ Allows to sort by system
  ○ Interlock
  ▪ Throttle Interlocks
  ▪ Pump Interlocks (if equipped)
  ▪ Aerial Interlocks (if equipped)
  ▪ PTO Interlocks (if equipped)		

Specification

	Bidder Complies	
	Yes	No
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 ▪ Night time ▪ Sensitivity o Unit Selection o Home Screen o Virtual Button Setup o On Scene Screen Setup		

	Bidder Complies	
	Yes	No

- Configure Video Mode
  - Set Video Contrast
  - Set Video Color
  - Set Video Tint
- Do Not Move
  - 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 indicate
    - 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)
- Notifications
  - 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)

Button functions and button labels may change with each screen.

VEHICLE DATA RECORDER

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

The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A CD provided with the apparatus shall include the programming to download the information from the VDR. A USB cable can be used to connect the VDR to a laptop to retrieve required information.

Specification

	Bidder Complies	
	Yes	No
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 (7-12 Seating Capacity) • Seat Belt Buckled Status - Yes/No by Position (7-12 Seating Capacity) • Master Optical Warning Device Switch - On/Off • Time - 24 Hour Time • Date - Year/Month/Day		
INTERCOM SYSTEM A seven (7) position David Clark, Model U3800, intercom system with radio interface at three (3) positions shall be provided. The driver and officer positions shall have radio / intercom interface capability. The pump operator shall have radio only interface capability with a belt station. Four (4) crew seats, located at four (4) forward facing seats, shall have intercom only. The following components shall be supplied with this system: • One (1) U3805 Radio Cord Junction Module • One (1) U3815 Radio Interface Module (Driver) • One (1) U3811 Radio Interface Module (Officer) • One (1) U3800 Intercom Unit (2 Crew) • Two (2) U3802 Intercom only (2 Crew) • One (1) U3819 Connector kit with weather proof cap and lanyard (Pump panel) • One (1) C3019 Belt Station (Pump Panel) • One (1) C3820 Power Cable • All station interconnect cables		
RADIO / INTERCOM INTERFACE INCLUDED All radio interfaced stations shall have universal radio interfaces installed. The interface wiring shall be routed within the cab to by officer .		

	Bidder Complies	
	Yes	No

RADIO ANTENNA MOUNT

There shall be two (2) standard 1.125", 18 thread antenna-mounting base(s) installed on the right side on the cab roof with high efficiency, low loss, coaxial cable(s) routed to the instrument panel area. A weatherproof cap shall be installed on the mount.

VEHICLE CAMERA SYSTEM

There shall be a color vehicle camera system provided with the following:

- One (1) camera located at the rear of the apparatus, pointing rearward, displayed automatically with the vehicle in reverse
- One (1) camera located on the passenger side of the apparatus, pointing rearward, displayed automatically with the passenger side turn signal

The camera images shall be displayed on the driver's color Mux display. Audio from the microphone on the rear camera shall be emitted by an amplified speaker with volume control located behind the driver seat.

The following components shall be included:

- One (1) SV-CW134639CAI Camera
- One (1) CS134404CI Side camera
- One (1) Amplified speaker (if applicable)
- All necessary cables

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.

Distribution centers located throughout the vehicle shall contain battery powered studs for supplying customer installed equipment thus providing a lower cost of ownership.

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

	Bidder Complies	
	Yes	No
have a direct current rating of 125 percent of the maximum current for which the circuit is protected per NFPA.		

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 located near their point of use to 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.

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 re programmable to accommodate changes to the vehicle's operating parameters
- Complete operating and troubleshooting manuals
- USB connection to the main control module for advanced troubleshooting

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

IP67 rated enclosure (Totally protected against dust and also protected against the effect of temporary immersion between 15 centimeters and one (1) meter)

	Bidder Complies	
	Yes	No

Operating voltage from eight (8) volts to 16 volts DC

The main controller shall activate status indicators and audible alarms designed to provide warning of problems before they become critical.

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.

ON-BOARD ADVANCED/VISUAL 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

All control system modules, with the exception of the main control module, shall contain on-board visual diagnostic LEDs that assist in troubleshooting. The LEDs shall be enclosed within the sealed, transparent module housing near the face of the module. One LED for each input or output shall be provided and shall illuminate whenever the respective input or output is active. Color-coded labels within the modules shall encompass the LEDs for ease of identification. The LED indicator lights shall provide point of use information for reduced troubleshooting time without the need for an additional computer.

TECH MODULE WITH WIFI

An in cab module will provide Wifi wireless interface and data logging capability. (No Exception) The Wifi interface will comply with IEEE 802.11 b/g/n capabilities while communicating at 2.4 Gigahertz. The module will provide an external antenna connection allowing a line of site communication range of up to 300 feet with a roof mounted antenna.

The module will transmit a password protected web page to a wifi enabled device (i.e. most smart phones, tablets or laptops) allowing two levels of user interaction. The firefighter level will allow vehicle monitoring of the vehicle and firefighting systems on the apparatus. The technician level will allow diagnostic access to inputs and outputs installed on the Command Zone™, control and information system.

The data logging capability will record faults from the engine, transmission, ABS and Command Zone™, control and information systems as they occur. No other data will be recorded at the time the fault occurs. The data logger will provide up to 2 Gigabytes of data storage.

	Bidder Complies	
	Yes	No

A USB connection will be provided on the Tech Module. It will provide a means to download data logger information and update software in the device.

PROGNOSTICS

A software based vehicle tool shall be provided to predict remaining life of the vehicles critical fluid and events (no exceptions).

The system shall send automatic indications to the Command Zone, color display and/or wireless enabled device to proactively alert of upcoming service intervals.

Prognostics shall include:

- Engine oil and filter
- Transmission oil and filter
- Pump oil (if equipped)
- Foam oil (if equipped)
- Aerial oil and filter (if equipped)

ADVANCED DIAGNOSTICS

An advanced, Windows-based, diagnostic software program shall be provided for this control system. The software shall provide troubleshooting tools to service technicians equipped with a Windows-based computer or wireless enabled device.

The service and maintenance software shall be easy to understand and use and have the ability to view system input/output (I/O) information.

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.

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.

The alarm shall activate if the system falls below 11.8 volts DC for more than two (2) minutes.

DEDICATED RADIO EQUIPMENT CONNECTION POINTS

There shall be three (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

Bidder Complies	
Yes	No

- 12-volt 60-amp ignition switched power
- 12-volt 60-amp direct battery power

There shall also be a 12-volt 100-amp ground stud located in or adjacent to the power distribution center.

ENHANCED SOFTWARE

The solid-state control system shall include the following software enhancements:

All perimeter lights and scene lights (where applicable) shall be deactivated when the parking brake is released.

Cab and crew cab dome lights shall remain on for ten (10) seconds for improved visibility after the doors close. The dome lights shall dim after ten (10) seconds or immediately if the vehicle is put into gear.

Cab and crew cab perimeter lights shall remain on for ten (10) seconds for improved visibility after the doors close. The dome lights shall dim after ten (10) seconds or immediately if the vehicle is put into gear.

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.

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.

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.

	Bidder Complies	
	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.

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 (1890) 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.

An operational test shall be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.

The results of the tests shall be recorded and provided to the purchaser at time of delivery.

	Bidder Complies	
	Yes	No

BATTERY SYSTEM

Six (6) 12 volt, Exide, Model 31A950X1W, group 31 batteries that include the following features shall be provided:

- 950 CCA, cold cranking amps
- 190 amp reserve capacity
- High cycle
- Rating of 5700 CCA at 0 degrees Fahrenheit
- 1140 minutes of reserve capacity
- SAE Posts

Each battery case shall be a black polypropylene material with a vertically ribbed container for increased vibration resistance. The cover shall be manifold vented with a central venting location to allow a 45 degree tilt capacity.

The inside of each battery shall consist of a "maintenance free" grid construction with poly wrapped separators and a flooded epoxy bottom anchoring for maximum vibration resistance.

BATTERY SYSTEM

There shall be a single starting system with an ignition switch and starter button provided and located on the cab instrument panel.

MASTER BATTERY SWITCH

There shall be a master battery switch provided within the cab within easy reach of the driver to activate the battery system.

An indicator light shall be provided on the instrument panel to notify the driver of the status of the battery system.

BATTERY COMPARTMENTS

Batteries shall be stored in well-ventilated compartments that are located under the cab and bolted directly to the chassis frame. The battery compartments shall be constructed of unpainted 0.188" stainless steel plate and be designed to accommodate a maximum of three (3) group 31 batteries in each compartment. The battery hold-downs shall be of a non-corrosive material. All bolts and nuts shall be stainless steel.

The compartments shall include stainless steel battery trays for the batteries to sit in.

Heavy-duty battery cables shall be used to provide maximum power to the electrical system. Cables shall be color-coded.

Battery terminal connections shall be coated with anti-corrosion compound. Battery solenoid terminal connections shall be encapsulated with semi-permanent rubberized compound.

	Bidder Complies	
	Yes	No

JUMPER STUDS

One (1) set of battery jumper studs with plastic color-coded covers shall be installed on the bottom of the driver's side battery box. This shall provide for easy jumper cable access.

BATTERY CHARGER/ AIR COMPRESSOR

A Kussmaul Pump Plus 1200, Model 091-9-1200, single output battery charger/air compressor system shall be provided. A Kussmaul, Model 091-194-IND, auto charge status center indicating the state of charge shall be included.

The automatic charger shall maintain one (1) set of batteries with a maximum output current of 40 amps.

The 12-volt air compressor shall be installed to maintain the air system pressure when the vehicle is not in use.

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

Battery charger/compressor shall be located in the front left body compartment.

The battery charger indicator shall be located near the driver's seat riser with special bracketry.

AUTO EJECT FOR SHORELINE

There shall be one (1) Kussmaul™, Model 091-55-20-120, 20 amp 120 volt AC shoreline inlet(s) provided to operate the dedicated 120 volt AC circuits on the apparatus.

The shoreline inlet(s) shall include red weatherproof flip up cover(s).

There shall be a release solenoid wired to the vehicle's starter to eject the AC connector when the engine is starting.

The shoreline(s) shall be connected to the battery charger.

There shall be a mating connector body supplied with the loose equipment.

There shall be a label installed near the inlet(s) that state the following:

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

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

Specification

	Bidder Complies	
	Yes	No

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.

DUAL USB SOCKET

There shall be five (5) Kussmaul, 091-219, dual USB type A charger sockets installed by officer seat, and one in each rear facing compartments in crew cab. Power shall be directly to the battery power .

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.

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.

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 not be controlled by the load manager.
    - 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.

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

- Load managed items list, with priority levels and item condition.

Bidder Complies	
Yes	No

- Individual load managed item condition:
  - ON = not shed
  - 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.

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.

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.

When the emergency master switch is deactivated, the sequencer shall deactivate the warning light loads in the reverse order.

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)

HEADLIGHTS

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

- The outside light on each side shall contain a Model 8800-12V - DOT/ECE I.B LED, low beam module.
- The inside light on each side shall contain a Model 8800 -12V - DOT/ECE HB LED, high beam module.

Specification

	Bidder Complies	
	Yes	No

DIRECTIONAL LIGHTS

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

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

INTERMEDIATE LIGHT

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

CAB CLEARANCE/MARKER/ID LIGHTS

There shall be seven (7) amber LED lights provided to indicate the presence and overall width of the vehicle in the following locations:

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

REAR CLEARANCE/MARKER/ID LIGHTING

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

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

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

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

	Bidder Complies	
	Yes	No
There shall be two (2) LED lights installed on the side of the apparatus used as marker lights as close to the rear as practical per the following: • To indicate the overall length of the vehicle • One (1) each side of the vertical centerline • As near the top as practical • Red in color • To be visible from the side • All at the same height There shall be two (2) red reflectors located on the rear of the truck facing to the rear. One (1) each side, as far to the outside as practical, at a minimum of 15.00", but no more than 60.00", above the ground. There shall be two (2) red reflectors located on the side of the truck facing to the side. One (1) each side, as far to the rear as practical, at a minimum of 15.00", but no more than 60.00", above the ground. Per FMVSS 108 and CMVSS 108 requirements. **REAR FMVSS LIGHTING** The rear stop/tail and directional LED lighting shall consist of the following: • Two (2) Whelen®, Model M6BTT, red LED stop/tail lights • Two (2) Whelen, Model M6T, amber LED arrow turn lights The lights shall be provided with color lenses. The lights shall be mounted in a polished combination housing. There shall be two (2) Whelen Model M6BUW, LED backup lights provided in the tail light housing. **LICENSE PLATE BRACKET** There shall be one (1) license plate bracket mounted on the rear of the body. A white LED light shall illuminate the license plate. A polished stainless steel light shield shall be provided over the light that shall direct illumination downward, preventing white light to the rear.		

	Bidder Complies	
	Yes	No

LIGHTING BEZEL
There shall be two (2) Whelen, Model M6FCV4P, four (4) place chromed ABS housings with logos provided for the rear M6 series stop/tail, directional, back up, scene lights or warning lights.

BACK-UP ALARM
A PRECO, Model 1040, solid-state electronic audible back-up alarm that actuates when the truck is shifted into reverse shall be provided. The device shall sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum ten (10) dBA above surrounding environmental noise levels.

CAB PERIMETER SCENE LIGHTS
There shall be four (4) Truck-lite, Model 44308C, 4.00" white LED lights with Model 40700 grommets provided, one (1) for each cab and crew cab door.

These lights shall be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body perimeter scene lights.

PUMP HOUSE PERIMETER LIGHTS
There shall be four (4) Truck-Lite, Model 44308C, 4.00" white LED lights with Model 40700, grommets provided.

The lights shall be mounted in the following locations:

- One (1) light shall be provided under the driver's side top mount pump panel access step
- One (1) light shall be provided under the driver's side pump panel running board
- One (1) light shall be provided under the passenger's side pump panel running board
- One (1) light shall be provided under the passenger's side top mount pump panel access step

The lights shall be controlled by the same means as the body perimeter lights.

BODY PERIMETER SCENE LIGHTS
There shall be two (2) Truck-Lite, Model 44308C, 4.00" LED, lights with Model 40700, grommets provided under the rear step area on the body, one (1) each side shining to the rear.

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

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

	Bidder Complies	
	Yes	No
In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15.00" x 15.00" square placed 10.00" below the light and a minimum of 1.5 fc covering an entire 30.00" x 30.00" square at the same 10.00" distance below the light. These step lights shall be actuated with the pump panel light switch. All other steps on the apparatus shall be illuminated per the current edition of NFPA 1901. **12 VOLT LIGHTING** There shall be three (3) Whelen®, Model PCP2*, 12 volt LED combination spotlight and floodlight(s) installed in semi-recessed housing(s) Model PBA203, located passenger side behind crew door, mount as high as possible, two installed hatch. The painted parts of this light assembly to be white. The light(s) selected above shall be controlled by the following: • a switch at the driver's side switch panel • a switch at the passenger's side switch panel • a switch at the pump operator's panel • no additional switch location These light(s) may be load managed when the parking brake is set **12 VOLT LIGHTING** There shall be three (3) Whelen®, Model PCP2*, 12 volt LED combination spotlight and floodlight(s) installed in semi-recessed housing(s) Model PBA203, located one driver side behind crew door, mount as high as possible, and two (2) side Hatch on body. The painted parts of this light assembly to be white. The light(s) selected above shall be controlled by the following: • a switch at the driver's side switch panel • a switch at the passenger's side switch panel • a switch at the pump operator's panel • no additional switch location These light(s) may be load managed when the parking brake is set **12 VOLT LIGHTING** There shall be one (1) Whelen® Pioneer™, Model PCP2*, 12 volt LED combination spot/flood light(s) provided on the front visor, centered.		

	Bidder Complies	
	Yes	No

The painted parts of this light assembly to be white.

The light(s) shall be controlled by the following:

- a switch at the driver's side switch panel
- a switch at the passenger's side switch panel
- a switch at the pump operator's panel

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

DECK LIGHTS

There shall be two (2) Whelen, Model PFBP12C, white 12 volt DC LED floodlights with swivel mount provided at the rear of the hose bed, one (1) each side.

The lights shall be activated by a control from a switch at the rear of the truck.

REAR SCENE LIGHT(S)

There shall be two (2) Fire Research, Model SPA900-Q70, LED scene light(s) with chrome trim bezels installed at the rear of the apparatus, one each side rear body panel.

The light(s) shall be controlled by a switch at the driver's side switch panel, by a switch at the passenger's side switch panel and by a switch at the driver's side pump panel.

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

RADIO CUT OUT SWITCH

An on/off switch shall be provided on the driver's side for the AM/FM radio. The switch shall allow the driver to disable the AM/FM radio when it is necessary to hear other communications.

WATER TANK

Booster tank shall have a capacity of 750 gallons and be constructed of polypropylene plastic by United Plastic Fabricating, Incorporated.

The tank shall be stepped in design to allow for a low hosebed.

Tank joints and seams shall be nitrogen welded inside and out.

Tank shall be baffled in accordance with NFPA Bulletin 1901 requirements.

Baffles shall have vent openings at both the top and bottom to permit movement of air and water between compartments.

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.

Specification	Bidder Complies	
	Yes	No
Transverse partitions shall extend from 4.00" off the bottom of the tank to the underside of the top cover.		
All partitions shall interlock and shall be welded to the tank bottom and sides.		
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.		
Tank top shall be sufficiently supported to keep it rigid during fast filling conditions.		
Construction shall include 2.00" polypropylene dowels spaced no more than 30.00" apart and welded to the transverse partitions. Two (2) of the dowels shall be drilled and tapped (.50" diameter, 13.00" deep) to accommodate lifting eyes.		
A sump that is 8.00" long x 8.00" wide x 6.00" deep shall be provided at the bottom of the water tank.		
Sump shall include a drain plug and the tank outlet.		
Tank shall be installed in a fabricated cradle assembly constructed of structural steel.		
Sufficient crossmembers shall be provided to properly support bottom of tank. Crossmembers shall be constructed of steel bar channel or rectangular tubing.		
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.		
Stops or other provision shall be provided to prevent an empty tank from bouncing excessively while moving vehicle.		
Mounting system shall be approved by the tank manufacturer.		
Fill tower shall be constructed of .50" polypropylene and shall be a minimum of 8.00" wide x 14.00" long.		
Fill tower shall be furnished with a .25" thick polypropylene screen and a hinged cover.		
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.		
Two (2) sleeves shall be provided in the water tank for a 3.00" pipe to the rear.		
WATER TANK RESTRAINT A heavy-duty water tank restraint shall be provided.		

Specification

	Bidder Complies	
	Yes	No
DIRECT TANK FILL There shall be one (1) - 2.50" gated external tank fill(s) installed and properly labeled at the driver's side pump panel. Piping, for the fill, shall be routed through the front wall of the tank and include a flow deflector to break up the stream of water entering the water tank. A 2.50" full flow ball valve with 2.50" piping and a 2.50" (F)NST chrome swivel shall be located at the inlet. The valve for the inlet shall be recessed behind the pump panel. A 2.50" chrome plated 30 degree elbow and plug with VLH automatic pressure relieving thread technology shall be provided for the tank fill.		
HOSE BED The hose bed shall be fabricated of .125"-5052 aluminum with a nominal 38,000 psi tensile strength. Extruded body shall not be accepted. The hose bed shall be as low as practical. Hose bed width shall be a minimum of 68.00" inside. Upper and rear edges of side panels shall have a double break for rigidity, a split tube finish shall not be acceptable. The upper inside area of the beavertails shall be covered with brushed stainless steel to prevent damage to painted surface when hose is removed. The interior of the hose bed shall be unpainted with a DA finish. Flooring of the hose bed shall be removable aluminum grating with the top surface corrugated to aid in hose aeration. The grating slats shall be a minimum of 0.50" x 4.50" with spacing between slats for hose ventilation. The hose bed floor shall be 76"" from the ground when the truck is fully loaded. Hose bed shall accommodate 1200' of 5", 600' of 3" 600' of 2.5" 500' of 1-3/4".		
HOSE BED DIVIDER Four (4) adjustable hosebed dividers shall be furnished for separating hose. Each divider shall be constructed of a .125" brushed aluminum sheet fitted and fastened into a slotted, 1.50" diameter radiused extrusion along the top, bottom, and rear edge.		

	Bidder Complies	
	Yes	No
Divider shall be fully adjustable by sliding in tracks, located at the front and rear of the hose bed.		
Divider shall be held in place by tightening bolts, at each end.		
Acorn nuts shall be installed on all bolts in the hose bed which have exposed threads.		
HOSE RESTRAINT REAR		
The hose in the hosebed shall be restrained by 2.00" black nylon webbing with a 1.50" x 4.00" box pattern. The webbing shall be attached to the top of the hosebed cover with seat belt buckles. The female end of the seat buckle shall be permanently attached to the hosebed cover. A nylon strap shall be attached to the seat belt buckle for releasing the buckle on the webbing. The webbing shall be connected at the bottom with seat belt type quick release buckles.		
A cross-divider shall be provided just behind the fill tower. The divider shall be bolted to the side sheet.		
HOSE BED COVER		
A two (2) section hose bed cover, constructed of .125" bright aluminum treadplate shall be furnished. The cover shall be hinged with full length stainless steel piano hinge. The sides shall be slanted down.		
The cover shall be reinforced so that it can support the weight of a man walking on the cover.		
The cover is designed with the left cover opening first.		
If access to the water tank fill tower is blocked by the hose bed cover, then a hinged door shall be provided in it so that the tank may be filled without raising cover doors.		
Chrome grab handles and four (4) 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.		
RUNNING BOARDS		
Running boards shall be fabricated of .125" bright aluminum treadplate.		
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.		
Running boards shall be 14.75" deep and spaced .50" away from the pump panel. The rear outside corner of the running board shall be finished with a 45 degree corner where it lines up with the body.		
A splashguard shall be provided above the running board treadplate.		

Specification

	Bidder Complies	
	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.

The tailboard area shall be 16.00" deep.

The exterior side shall be flanged down and in for increased rigidity of tailboard structure.

REAR WALL, SMOOTH ALUMINUM/BODY MATERIAL

The rear facing surfaces of the center rear wall shall be smooth aluminum.

The bulkheads, the surface to the rear of the side body compartments, shall be smooth and the same material as the body.

Any inboard facing surfaces below the height of the hosebed shall be aluminum diamondplate .

TOW BARS

Two (2) tow bars shall be installed under the tailboard.

Tow bars shall be fabricated of 1.00" CRS bar rolled into a 3.00" radius.

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.

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.

Tow bar design shall have been fully tested and evaluated using strain gauge testing and finite element analysis techniques.

HITCH RECEIVER

A hitch receiver shall be installed at the rear of the apparatus.

The hitch shall be constructed of heavy steel tubing and reinforced to the truck framework, for the receiving portion. This shall be a Class III/IV trailer hitch. A class IV rating shall be obtained only when a weight distributing hitch is used.

Slide-in portion shall be held in place by one (1) safety pin with clip.

The trailer electrical connection shall be a seven (7)-way flat blade recreational vehicle connector for trailer wiring compatible with hydraulic serge brake systems, and a second connector with inverted ground meeting SAE J560 standards providing an auxiliary connection for warning devices.

	Bidder Complies	
	Yes	No

HOSE TRAY

Two (2) hose trays shall be made free floating one (1) in each side running board.

The tray(s) shall be flanged and drop in from the top. The ends shall be tapered at the front and rear towards the center. No fasteners shall be used to secure the tray(s).

Capacity of the tray shall be 20.00' of 5.00" soft suction hose.

Rubber matting shall be installed on the floor of the tray to provide proper ventilation.

COMPARTMENTATION

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

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

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

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

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

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

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

Side compartment covers shall be separate from the compartment tops.

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

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

UNDERBODY SUPPORT SYSTEM NO EXCEPTION

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

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

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

	Bidder Complies	
	Yes	No

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

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

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.

Isolators shall have a broad load range, proven viability in vehicular applications, be of a fail safe design and allow for all necessary movement in three (3) transitional and rotational modes.

The neoprene isolators shall be installed in a modified V three (3)-point mounting pattern to reduce the natural flex of the chassis being transmitted to the body.

A design with body compartments hanging on the chassis in an unsupported fashion shall not be acceptable.

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.

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.

TESTING OF BODY DESIGN

Body structural analysis shall be fully tested. Proven engineering and test techniques such as finite element analysis, stress coating and strain gauging shall be performed with special attention given to fatigue, life and structural integrity of the cab, body and substructure.

Body shall be tested while loaded to its greatest in-service weight.

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.

	Bidder Complies	
	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.

COMPARTMENTATION, DRIVER'S SIDE

A full height, rollup door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 34.50" wide x 57.25" high x 25.88" deep in the lower 25.00" of the compartment and 12.00" deep in the remaining upper portion. The height of the compartment shall be measured from the compartment floor to the bottom edge of the door roll. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 28.75" wide x 57.25" high.

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

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

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

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

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

	Bidder Complies	
	Yes	No

COMPARTMENTATION, PASSENGER'S SIDE

A full height, rollup door compartment ahead of the rear wheels shall be provided.. The interior dimensions of this compartment shall be 34.50" wide x 58.25" high x 25.88" deep in the lower 26.00" of the compartment and 12.00" deep in the remaining upper portion. The height of the compartment shall be measured from the compartment floor to the bottom edge of the door roll. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 28.75" wide x 58.25" high.

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

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

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

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

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

ROLLUP DOOR, SIDE COMPARTMENTS

There shall be six (6) compartment doors installed on the side compartments. The doors shall be double faced aluminum construction, painted one (1) color to match the lower portion of the body and manufactured by A&A Manufacturing (Gortite).

Lath sections shall be an interlocking rib design and shall be individually replaceable without complete disassembly of door.

	Bidder Complies	
	Yes	No
Between each slat at the pivoting joint shall be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals shall allow door to operate in extreme temperatures ranging from plus 180 to minus 40 degrees Fahrenheit. Side, top and bottom seals shall be provided to resist ingress of dirt and weather and be made of Santoprene.		
All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from plus 300 to minus 40 degrees Fahrenheit. Hardened plastic shall not be acceptable.		
A polished stainless steel lift bar with locking key latches to be provided for each roll-up door. The keys to be Model 751 to match all compartment and cab doors. Lift bar shall be located at the bottom of door and have latches on the outer extrusion of the doors frame. A ledge shall be supplied over lift bar for additional area to aid in closing the door.		
Doors shall be constructed from an aluminum box section. The exterior surface of each slat shall be flat. The interior surfaces shall be concave to provide strength and prevent loose equipment from jamming the door from inside.		
To conserve space in the compartments, the spring roller assembly shall not exceed 3.00" in diameter. A garage style roll door shall not be acceptable.		
The header for the rollup door assembly shall not exceed 4.00".		
A heavy-duty magnetic switch shall be used for control of open compartment door warning lights.		
COMPARTMENTATION, REAR A rollup door compartment above the rear tailboard shall be provided.		
Interior dimensions of this compartment shall be 40.00" wide x 33.63" high x 25.88" deep in the lower 26.00" of the compartment and 15.75" deep in the remaining upper portion. Depth of the compartment shall be calculated with the compartment door closed.		
For a chassis with a rear mounted fuel tank, a louvered removable access panel shall be furnished on the back wall of the compartment.		
Rear compartment shall be open into the rear side compartments.		
Clear door opening of this compartment shall be 33.25" wide x 26.00" high.		
Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.		

	Bidder Complies	
	Yes	No

ROLLUP DOOR, REAR COMPARTMENT

There shall be a rear rollup door. The door shall be double faced aluminum construction, an anodized satin finish and manufactured by A&A Manufacturing (Gortite).

Lath sections shall be an interlocking rib design and shall be individually replaceable without complete disassembly of door.

Between each slat at the pivoting joint shall be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals shall allow door to operate in extreme temperatures ranging from plus 180 to minus 40 degrees Fahrenheit. Side, top and bottom seals shall be provided to resist ingress of dirt and weather and be made of Santoprene.

All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from plus 300 to minus 40 degrees Fahrenheit. Hardened plastic shall not be acceptable.

A polished stainless steel lift bar with locking key latches to be provided for each roll-up door. The keys to be Model 751 to match all compartment and cab doors. Lift bar shall be located at the bottom of door and have latches on the outer extrusion of the doors frame. A ledge shall be supplied over lift bar for additional area to aid in closing the door.

Door shall be constructed from an aluminum box section. The exterior surface of each slat shall be flat. The interior surface shall be concave to provide strength and prevent loose equipment from jamming the door from inside.

To conserve space in the compartments, the spring roller assembly shall not exceed 3.00" in diameter. A garage style roll door shall not be acceptable.

The header for the rollup door assembly shall not exceed 4.00".

A heavy-duty magnetic switch shall be used for control of open compartment door warning lights.

DOOR GUARD

There shall be seven (7) compartment doors that shall include a guard/drip pan designed to protect the rollup door from damage when in the retracted position and contain any water spray. The guard shall be fabricated from stainless steel and installed driver side forward compartment, driver side over the wheel compartment, driver side rearward compartment, rear compartment, passenger side forward compartment, passenger side over the wheel compartment and passenger side rearward compartment.

	Bidder Complies	
	Yes	No

ROLL-UP DOOR TRIM

The exterior of the aluminum trim around the door opening shall be painted to match the color of the applicable door.

There shall be six (6) compartments located each door with the trim painted.

COMPARTMENT LIGHTING

There shall be seven (7) compartment(s) with two (2) white 12 volt DC LED compartment light strips. The dual light strips shall be centered vertically along each side of the door framing. There shall be two (2) light strips per compartment.The dual light strips shall be in all body compartment(s).

Any remaining compartments without light strips shall have a 6.00" diameter Truck-Lite, Model: 79384 light. Each light shall have a number 1076 one filament, two wire bulb.

Opening the compartment door shall automatically turn the compartment lighting on.

HATCH COMPARTMENT

Two (2) hatch compartments 151.75" long x 13.75" wide x 22.00" maximum depth shall be provided above the driver and passenger side compartments, with two (2) liftup top opening hatch doors.

Compartment shall extend the full length of the side body compartmentation.

Sides of the compartment shall be constructed of the same material as the body and painted job color. A chrome and black vinyl molding shall be provided to cover the seam between the top of the body panel and the bottom of the hatch compartment.

Top of the compartment shall be constructed of bright aluminum treadplate.

Two (2) liftup, bright aluminum treadplate doors shall be provided on the top of the compartment, each with a chrome grab handle.

Doors shall have lipped edges with a rubber seal for weather resistance, and an inner pan with one (1) recessed light.

Doors shall be hinged on the outboard side and shall be held open with rubber covered chains.

One (1) socket and plunger type latch shall be provided with each door to hold the doors in the closed position.

Each door shall have a clear door opening of 64.00" long x 7.50" wide.

Compartment shall drain to an area below the hose bed.

	Bidder Complies	
	Yes	No

MOUNTING TRACKS

There shall be seven (7) sets of tracks for mounting shelf(s) in D3, D2, D1, P1, P2 and P3. 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.

ADJUSTABLE SHELVES

There shall be ten (10) shelves with a capacity of 500 lb provided. The shelf construction shall consist of .188" aluminum with 2.00" sides. Each shelf shall be painted to match the compartment interior. Each shelf shall be infinitely adjustable by means of a threaded fastener, which slides in a track.

The shelves shall be held in place by .12" thick stamped plated brackets and bolts.

The location shall be TBD.

SLIDE-OUT FLOOR MOUNTED TRAY

There shall be five (5) floor mounted slide-out tray(s) with 2.00" sides provided D1, P1, D3, P3 and R1. Each tray shall be rated for up to 500lb in the extended position. The tray(s) shall be constructed of a minimum .13" aluminum with welded corners. The finish shall be painted to match compartment interior.

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.

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.

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.

MATTING, COMPARTMENT SHELVING

Turtle Tile compartment matting shall be provided in 14 shelves. The locations are, each shelf and roll out tray.

The color of Turtle Tile shall be black.

Specification	Bidder Complies	
	Yes	No
Pac Trac equipment mounting system shall be installed on the walls of six (6) compartment(s), all upper sections of compartments.		
RUB RAIL Bottom edge of the side compartments shall be trimmed with a bright aluminum extruded rub rail.		
Rub rail shall be 2.12" high with 1.25" flanges turned outward for rigidity.		
A full length, black poly insert shall be secured on the inside of the aluminum extrusion. The black poly insert shall be approximately 1.50" x 1.50" x full length, and shall extend past the outside edge of the aluminum extrusion by 0.50".		
The rub rails shall not be an integral part of the body construction, which allows replacement in the event of damage.		
BODY FENDER CROWNS Stainless steel fender crowns shall be provided around the rear wheel openings.		
A rubber welting shall be provided between the body and the crown to seal the seam and restrict moisture from entering.		
A dielectric barrier shall be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.		
HARD SUCTION HOSE Two (2) lengths of 6.00" clear corrugated PVC hard suction hose, 10' in length, shall be provided. The hose shall be equipped with a long handle female coupling on one (1) end and a rocker lug male coupling on the other end. Couplings shall be hard coated aluminum.		
HOSE TROUGHS Two (2) hard suction hose troughs shall be provided, one (1) in each hatch compartment.		
Troughs shall be constructed of aluminum painted job color.		
A floor shall be provided above the hard suction hose in each hatch compartment to allow storage of additional equipment in the compartment above the hard suction hose.		
HANDRAILS The handrails shall be 1.25" diameter anodized aluminum extrusion, with a ribbed design, to provide a positive gripping surface.		
Chrome plated end stanchions shall support the handrail. Plastic gaskets shall be used between end stanchions and any painted surfaces.		

	Bidder Complies	
	Yes	No

Drain holes shall be provided in the bottom of all vertically mounted handrails.

Handrails shall be provided to meet NFPA 1901 section 15.8 requirements. The handrails shall be installed as noted on the sales drawing.

HANDRAILS

One (1) vertical handrail, not less than 29.00" long, shall be located on each rear beavertail.

- One (1) horizontal handrail shall be provided above the hose bed at the rear of the apparatus.
- One (1) full width horizontal handrail shall be provided below the hose bed at the rear of the apparatus.

AIR BOTTLE STORAGE (DOUBLE)

A quantity of three (3) air bottle compartments, 15.25" wide x 7.75" tall x 26.00" deep, shall be provided on the driver side forward of the rear wheels, on the passenger side forward of the rear wheels and on the passenger side rearward of the rear wheels . A painted stainless steel door with a Southco non-locking C2 chrome lever latch shall be provided to contain the air bottle. A dielectric barrier shall be provided between the door hinge, hinge fasteners and the body sheet metal.

Inside the compartment, "W" shaped insert formed of composite materials shall be provided.

AIR BOTTLE STORAGE (SINGLE)

A quantity of one (1) air bottle compartment, 7.75" in diameter x 26.00" deep, shall be provided on the driver side rearward of the rear wheels. A painted stainless steel door with a Southco locking C2 chrome lever latch shall be provided to contain the air bottle. A dielectric barrier shall be provided between the door hinge, hinge fasteners and the body sheet metal.

Inside the compartment, black rubber matting shall be provided.

EXTENSION LADDER

There shall be a 24', two-section, aluminum, Duo-Safety, Series 900-A extension ladder provided.

ROOF LADDER

There shall be a 14' aluminum, Duo-Safety, Series 775-A roof ladder provided.

LADDER STORAGE

The ladders shall be stored between the water tank and the passenger's side compartments.

The ladders shall extend into the pump compartment just to the rear of the water pump discharges.

	Bidder Complies	
	Yes	No
The ladder storage area shall be enclosed as practical by means of sheet metal to protect the ladders from road dirt. The ladders that extend into the pump house shall also be enclosed. A black rubber boot shall be provided to enclosed the ladders in the gap between the pump house and the body.		
Each ladder shall be stored vertically in a separate stainless steel storage trough. Each stainless steel trough shall be lined with Dura-Surf nylon slides.		
A bright aluminum treadplate enclosure shall be provided at the rear of the body to properly contain the ladders. This enclosure shall extend to the rear of the side body compartments.		
The enclosure shall also include a vertically hinged smooth aluminum door with a D-handle latch to access the ladders.		
FOLDING LADDER One (1) 10.00' aluminum, Series 585-A, Duo-Safety folding ladder shall be installed in a U-shaped trough inside the ladder storage compartment.		
PIKE POLE PROVIDED BY FIRE DEPARTMENT NFPA 1901, 2009 edition, Section 5.8.3 requires one (1) 8 ft or longer pike pole mounted in a bracket fastened to the apparatus.		
The pike pole is not on the apparatus as manufactured. The fire department shall provide and mount the pike pole.		
The pike pole(s) shall be a Akron 10' pike pole.		
6 FT PIKE POLE PROVIDED BY FIRE DEPARTMENT NFPA 1901, 2009 edition, Section 5.8.3 requires one (1) 6 ft pike pole or plaster hook mounted in a bracket fastened to the apparatus.		
The pike pole is not on the apparatus as manufactured. The fire department shall provide and mount the pike pole.		
The pike pole(s) shall be a Akron 6' pike pole.		
PIKE POLE STORAGE Stainless steel trough be used for the storage of two (2) pike poles, with D-handle style grip, shall be provided and installed in ladder compartment.		
PIKE POLE STORAGE Aluminum tubing shall be used for the storage of two (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 scuffplate shall be provided.		

	Bidder Complies	
	Yes	No

BELL

A chrome plated, 12.00" bronze cast bell, complete with an eagle, shall be mounted on the passenger's side of the front bumper extension. A rope pull, for the bell, shall be installed inside the cab.

REAR FOLDING STEPS

Bright finished, non-skid folding steps with a black coating 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.

Eight (8) additional folding steps shall be located four each side forward bulkhead by pump panel. The step(s) shall be bright finished, non-skid, with a luminescent coating. The luminescent coating is rechargeable from any light source and can hold a charge for up to 24 hours. Each step shall incorporate an LED light to illuminate the stepping surface. The step(s) can be used as a hand hold with two openings wide enough for a gloved hand.

PUMP

Pump shall be a Waterous CMU 2000 gpm two (2) stage midship mounted centrifugal type.

Pump shall be the class "A" type.

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

- 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 two (2) sections for easy removal of the entire impeller shaft assembly (including wear rings).

Pump shall be designed for complete servicing from the bottom of the truck, without disturbing the pump setting or apparatus piping.

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.

Discharge manifold of the pump shall be cast as an integral part of the pump body assembly and shall provide a minimum of three (3) 3.50" openings for flexibility in providing various discharge outlets for maximum efficiency.

The three (3) 3.5" openings shall be located as follows: one (1) outlet to the right of the pump, one (1) outlet to the left of the pump, and one (1) outlet directly on top of the discharge manifold.

	Bidder Complies	
	Yes	No
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.		
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.		
Stuffing boxes shall be of the conventional two (2) piece, split-gland type, to permit adjustment or replacement of Grafoil packing without disturbing the pump. Water shall be fed into stuffing box lantern rings for proper lubrication and cooling when the pump is operating.		
Lantern rings shall be located at the inner ends of the stuffing boxes, to avoid having to remove them when replacing pump packing.		
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.		
PUMP TRANSMISSION Pump transmission shall be made of a three (3) piece, aluminum, horizontally split casing. Power transfer to pump shall be through a high strength Morse HY-VO silent drive chain.		
Drive shafts shall be a minimum of 2.35" diameter hardened and ground alloy steel. All shafts shall be ball bearing supported. The case shall be designed as to eliminate the need for water cooling.		
AIR PUMP SHIFT Pump shift engagement shall be made by a two (2) position sliding collar, actuated pneumatically (by air pressure), with a three (3) position air control switch located in the cab. A manual back-up shift control shall also be located on the pump operator's pump panel.		
Two (2) indicator lights shall be provided adjacent to the pump shift inside the cab. One (1) green light shall indicate the pump shift has been completed and be labeled "pump engaged". The second green light shall indicate when the pump has been engaged, and that the chassis transmission is in pump gear. This indicator light shall be labeled "OK to pump".		
Another green indicator light shall be installed adjacent to the hand throttle on the pump panel and indicate either the pump is engaged and the road transmission is in pump gear, or the road transmission is in neutral and the pump is not engaged. This indicator light shall be labeled "Warning: Do not open throttle unless light is on".		
The pump shift control in the cab shall be illuminated to meet NFPA requirements.		

	Bidder Complies	
	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.

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. Heat exchanger shall be cylindrical type and shall be a separate unit. It shall be installed in the pump or engine compartment with the control located on the pump operator's control panel. Exchanger shall be plumbed to the master drain valve.

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.

Transfer valve shall operate smoothly and without sticking, even when exposed to sandy or dirty water.

Transfer valve shall be operated electrically with a control switch mounted on the pump operator's control panel, with two (2) indicator lights which shall indicate "pressure" or "volume".

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 maintaining an effective fire stream at the nozzle at all times.

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 (driver's) side pump panel.

Cylindrical type transfer valves shall not be acceptable.

INTAKE RELIEF VALVE

A Trident Air Max intake relief valve shall be installed on the suction side of the pump preset at 125 psig.

Relief valve shall have a working range of 50 psig to 350 psig.

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.

	Bidder Complies	
	Yes	No
An adjustable air regulator and pressure indicating gauge shall be located at the pump operator's panel.		

PRESSURE CONTROLLER

A Pressure Governor shall be provided. An electric pressure governor shall be provided which is capable of automatically maintaining a desired preset discharge pressure in the water pump. When operating in the pressure control mode, the system shall automatically maintain the discharge pressure set by the operator (within the discharge capabilities of the pump and water supply) regardless of flow, within the discharge capacities of the water pump and water supply.

A pressure transducer shall be installed in the water discharge of the pump. The transducer continuously monitors pump pressure sending a signal to the Electronic Control Module (ECM).

The governor can be used in two (2) modes of operation, RPM mode and pressure modes.

In the RPM mode, the governor can be activated after vehicle parking brake has been set.When in this mode, the governor shall maintain the set engine speed, regardless of engine load (within engine operation capabilities).

In the pressure mode, the governor system can only operate after the fire pump has been engaged and the vehicle parking brake has been set. When in the pressure mode, the pressure controller monitors the pump pressure and varies engine speed to maintain a precise pump pressure. The pressure controller shall use a quicker reacting J1939 database for engine control.

A preset feature allows a predetermined pressure or rpm to be set.

A pump cavitation protection feature is also provided which shall return the engine to idle should the pump cavitate. Cavitation is sensed by the combination of pump pressure below 30 psi and engine speed above 2000 rpm for more than five (5) seconds.

The throttle shall be a vernier style control, with a large control knob for use with a gloved hand. A throttle ready light shall be provided adjacent to the throttle control. A large 0.75" RPM display shall be provided to be visible at a glance.

Check engine, and stop engine indicator lights shall be provided for easy viewing.

Large 0.75" push buttons shall be provided for menu, mode, preset, and silence selections.

The water tank level indicator shall be incorporated in the pressure governor.

A fuel level indicator shall be incorporated in the pressure controller.

A pump hour meter shall be incorporated in the pressure controller.

	Bidder Complies	
	Yes	No
The pressure controller shall incorporate monitoring for engine temperature, oil pressure, fuel level alarm, and voltage. Pump monitoring shall include, pump gearcase temperature, error codes, diagnostic data, pump service reminders, and time stamped data logging, to allow for fast accurate trouble shooting. It shall also notify the driver/engineer of any problems with the engine and the apparatus. Complete understandable messages shall be provided in a 20-character display, providing for fewer abbreviations in the messages. An automatic dim feature shall be included for night operations.		
The pressure controller shall include a USB port for easy software upgrades, which can be downloaded through a USB memory stick, eliminating the need for a laptop for software installations.		
A complete interactive manual shall be provided with the pressure controller.		
PRIMING PUMP The priming pump shall be a Trident Emergency Products compressed air powered, high efficiency, multistage venturi based AirPrime System, conforming to standards outlined in the current edition of NFPA 1901.		
All wetted metallic parts of the priming system are to be of brass and stainless steel construction.		
One (1) priming control shall open the priming valve and start the pump primer.		
RECIRCULATING LINE WITH CHECK VALVE A 0.50" diameter recirculating line, from the pump to the water tank, shall be furnished with a control installed at the pump operator's control panel. A check valve shall be provided in this line to prevent the back flow of water from the tank to the pump if the valve is left in the open position.		
THERMAL RELIEF VALVE A Hale TRV120-L thermal protection device shall be included on the pump that monitors pump water temperature and opens to relieve water to cool the pump when the temperature of the pump water exceeds 120 Degrees F (49 C).		
The thermal protection device shall include a red warning light and audible alarm. The warning light with a test switch shall be mounted on the pump operator panel.		
The discharge line shall be 3/8 inch diameter tubing plumbed to ground.		
PUMP MANUALS There shall be a total of two (2) pump manuals provided by the pump manufacturer and furnished with the apparatus. The manuals shall be provided by the pump manufacturer in the form of two (2) CDs. Each manual shall cover pump operation, maintenance, and parts.		

	Bidder Complies	
	Yes	No

PLUMBING

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

Where vibration or chassis flexing may damage or loosen piping or where a coupling is required for servicing, the piping shall be equipped with victaulic or rubber couplings.

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

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

MAIN PUMP INLETS

A 6.00" pump manifold inlet shall be provided on each side of the vehicle. The suction inlets shall include removable die cast zinc screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.

MAIN PUMP INLET CAP

The main pump inlets shall have National Standard Threads with a long handle chrome cap.

The cap shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).

VALVES

All ball valves shall be Akron® Brass in-line valves. The Akron valves shall be the 8000 series heavy-duty style with a stainless steel ball and a simple two-seat design. No lubrication or regular maintenance is required on the valve.

Valves shall have a **ten (10) year** warranty.

LEFT SIDE INLET

On the left side pump panel shall be one (1) - 2.50" auxiliary inlet, terminating in 2.50" National Standard Hose Thread. The auxiliary inlet shall be provided with a strainer, chrome swivel and plug.

Inlet valve location shall be behind the pump panel.

	Bidder Complies	
	Yes	No

ANODE, INLET
A pair of sacrificial zinc anodes shall be provided in the water pump inlets to protect the pump from corrosion.

INLET CONTROL
Control for the side auxiliary inlet(s) shall be located at the top mount control panel. There shall be one (1) inlet.

FRONT INLET
A 6.00" inlet front inlet with die cast zinc screens shall be provided using 5.00" welded black iron pipe and a 5.00" butterfly valve. Only radiused elbows shall be used in the piping, no mitered joints.

Drains are furnished in all the low points of piping and have .75" valves with swing handle.

A bleeder valve shall be located at the threaded connection.

The front suction shall be located on the passenger side of the bumper extension.

FRONT INLET CONTROL
The front inlet shall be gated with the control located at the pump operator's panel. The valve operating mechanism shall indicate the position of the valve or an indicator shall be provided to show when the valve is closed.

There shall be an Akron 9323 electric valve controller provided. The controller unit shall be of true position feedback design, requiring no clutches in the motor or current limiting. The controller shall be completely sealed with two (2) button open and close valve position capability and a full color LCD display with backlight.

A manual override with handwheel shall be provided on the valve. A stainless steel door located on the passenger side pump panel shall be provided for access to the manual override.

A momentary toggle switch shall be provided behind the stainless steel access door near the manual override. The switch shall cut off power to the valve to allow for manual valve actuation.

INTAKE RELIEF VALVE
A Trident Air Max intake relief valve, present at 125 psig, shall be installed on the inlet side of the valve.

Relief valve shall have a working range of 50 psig to 350 psig.

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.

	Bidder Complies	
	Yes	No
An adjustable air regulator and pressure indicating gauge shall be located at the left (driver's) side pump panel.		
FRONT INLET CAP The front inlet shall have National Standard hose threads with a long handle chrome plated cap.		
The cap shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).		
The front suction shall have a chromed 6.00" swivel with National Standard hose threads and a long handle chromed plated cap.		
The swivel shall have a smooth surface chrome finish.		
ELBOW, FRONT INLET The inlet, located at the front of the apparatus, shall be furnished with a 6.00" (F) National Standard hose thread x 5.00" Storz 30 degree elbow/adapter with a Storz cap.		
INLET BLEEDER VALVE A 0.75" bleeder valve shall be provided for each side gated inlet. The valves shall be located behind the panel with a swing style handle control extended to the outside of the panel. The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. The water discharged by the bleeders shall be routed below the chassis frame rails.		
TANK TO PUMP The booster tank shall be connected to the intake side of the pump with heavy duty 4.00" piping and a quarter turn 4.00" full flow line valve. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing. A check valve shall be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank.		
There shall be an Akron 9323 Navigator Pro electric valve controller provided at the pump panel. The controller unit shall be of true position feedback design, requiring no clutches in the motor or current limiting. The controller shall be completely sealed with two (2) button open and close valve position capability and a full color LCD display with backlight.		
TANK REFILL A 1.50" combination tank refill and pump re-circulation line shall be provided, using a quarter-turn full flow ball valve controlled from the pump operator's panel.		

Specification

	Bidder Complies	
	Yes	No
LEFT SIDE DISCHARGE OUTLETS There shall be two (2) discharge outlets with a 2.50" valve on the left side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.		
RIGHT SIDE DISCHARGE OUTLETS There shall be one (1) discharge outlet with a 2.50" valve on the right side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.		
LARGE DIAMETER DISCHARGE OUTLET There shall be a 5.00" discharge outlet with a 4.00" Akron valve installed on each side of the apparatus, terminating with a male 5.00" National Standard hose thread.		
There shall be a Akron Navigator Pro electric valve controllers provided at the pump panel. The controller unit shall be of true position feedback design, requiring no clutches in the motor or current limiting. The controller shall be completely sealed with two (2) button open and close valve position capability and a full color LCD display with backlight.		
FRONT DISCHARGE OUTLET There shall be one (1) 1.50" discharge outlet piped to the front of the apparatus and located on the top of the left side of the front bumper.		
Plumbing shall consist of 2.00" piping and flexible hose with a 2.00" ball valve with control at the pump operator's panel. A fabricated weldment made of stainless steel pipe shall be used in the plumbing where appropriate. The piping shall terminate with a 1.50" NST with 90 degree stainless steel swivel.		
There shall be Trident swing handle drains provided at all low points of the piping.		
REAR DISCHARGE OUTLET There shall be two (2) discharge outlets piped to the rear of the hose bed, on one (1) each side, installed so proper clearance is provided for spanner wrenches or adapters. Plumbing shall consist of 3.00" piping along with a 3.00" full flow ball valve with the control from the pump operator's panel. The two (2) discharge outlets shall terminate with a 2.50" male National Standard hose thread adapter.		
DISCHARGE CAPS Chrome plated, rocker lug, caps with chains shall be furnished for all side discharge outlets.		
The caps shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).		

	Bidder Complies	
	Yes	No
OUTLET BLEEDER VALVE A 0.75" bleeder valve shall be provided for each outlet 1.50" or larger. Automatic drain valves are acceptable with some outlets if deemed appropriate with the application. The valves shall be located behind the panel with a swing style handle control extended to the outside of the side pump panel. The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. Bleeders shall be located at the bottom of the pump panel. They shall be properly labeled identifying the discharge they are plumbed in to. The water discharged by the bleeders shall be routed below the chassis frame rails.		
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. The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).		
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. The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).		
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, 30 degree elbow. The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).		
LARGE DIAMETER OUTLET ELBOWS The 5.00" side outlets shall be furnished with a 5.00" (F) National Standard hose thread x 5.00" Storz elbow adapter with Storz cap.		
REDUCER There shall be five (5) adapters with 2.50" FNST x 1.50" MNST threads and a 1.50" chrome plated cap installed on each 2.5" discharge.		

	Bidder Complies	
	Yes	No

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 or an indicator shall be provided to show when the valve is closed.

There shall be one (1) discharge outlet that have Akron electric valve controllers provided. These outlets shall be located 3" deck gun outlet. The controller unit shall be of true position feedback design, requiring no clutches in the motor or current limiting. The controller shall be completely sealed with two (2) button open and close valve position capability and a full color LCD display with backlight.

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.

MONITOR

An Akron Model 3431 Apollo Hi-Riser monitor shall be properly installed on the deluge riser.

A fixed mounting base and a portable base with one (1) 5.00" Storz inlet shall be provided.

A position sensor shall be provided on the monitor that shall activate the "do not move apparatus" light inside the cab when the monitor is in the raised position.

The monitor shall be painted to match the body.

NOZZLE, DELUGE

Akron model #2499 Quad Stacked pyrolite deluge tips shall be provided.

The tip sizes shall be 1.375", 1.50", 1.75", and 2.00".

This shall include an Akron 3488 pyrolite stream shaper.

The deluge riser shall have male National Pipe Threads for mounting the monitor.

SPEEDLAYS

Ahead of the pump enclosure shall be two (2) 1.75" and one (1) 2.5" speedlay hose beds. Two (2) speedlay compartments shall have a 2.00" preconnect line with a 2.00" quarter turn ball valve and terminate with a 1.50" National Standard hose thread 90 degree swivel. One (1) speedlay compartment shall have a 2.5" preconnect with a 2.5" quarter turn ball valve and terminate with a 2.5" National Standard hose thread 90 degree swivel.

Individual controls for the speedlays shall be at the pump operator's panel.

	Bidder Complies	
	Yes	No
Two (2) compartments shall be capable of carrying 200 feet of 1.75" double jacketed hose. One compartment shall be capable of carrying 200 feet of 2.5" double jacketed hose with the one (1) compartment located above the other.		
Scuffplates shall be provided at the sides and bottom of each opening on both sides.		
Speedlay flooring shall consist of removable perforated brushed aluminum.		
CROSSLAY/DEADLAY COVER & NETTING		
A hinged 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.		
The ends shall be made of 1" nylon netting sewn into a box pattern with seat belt buckles on top and 1" Velcro straps with footman loops at the bottom shall be provided on each end of the crosslay/deadlay compartments to secure the hose during travel.		
There shall be a 1" orange pull strap added to each buckle.		
BOOSTER HOSE REEL		
A Hannay electric rewind booster hose reel shall be installed over the pump in a recessed open compartment on the right side of the apparatus. Reel to be fabricated of aluminum and have highly polished end discs.		
A polished stainless steel roller and guide assembly shall be mounted on the reel side of the apparatus.		
Discharge control shall be provided at the pump operator's panel. Plumbing to the reel shall consist of 1.50" Aeroquip hose and a 1.50" valve.		
Reel motor shall be protected from overload with a circuit breaker rated to match the motor.		
An electric rewind control switch shall be installed on the reel side pump panel.		
Booster hose, .75" in diameter and 200' in length, with chrome plated Barway or equal couplings shall be provided.		
The working pressure of the booster hose shall be a minimum of 800 psi.		
Capacity of the hose reel shall be 200 feet of 1.00" booster hose.		
An Akron, model 1702, 1.00" booster hose nozzle with pistol grip shall be provided.		

	Bidder Complies	
	Yes	No

FOAM PROPORTIONER

A foam proportioning system shall be provided that is an on demand, automatic proportioning, single point, direct injection system suitable for all types of Class A and B foam concentrates, including the high viscosity (6000 cps), alcohol resistant Class B foams. Operation shall be based on direct measurement of water flow, and remain consistent within the specified flows and pressures. The system shall automatically balance and proportion foam solution at rates from .1 percent to 9.9 percent regardless of variations in water pressure and flow, up to the maximum rated capacity of the foam concentrate pump.

The design of the system shall allow operation from draft, hydrant, or relay operation. This shall provide a versatile system to meet the demands at a fire scene.

SYSTEM CAPACITY

The system shall have the ability to deliver the following minimum foam solution flow rates that meet or exceed NFPA requirements at a pump rating of 250 psi.

200 gpm @ 6 percent

400 gpm @ 3 percent

1200 gpm @ 1 percent

The foam concentrate setting may be adjusted in .1 percent increments from .1 percent to 9.9 percent. Typical settings are .3 percent, .5 percent and 1.0 percent (The maximum capacity shall be limited to the plumbing and water pump capacity). All above system capacity must be meet or greater than ask for. No exception on foam system flow rates.

CONTROL SYSTEM

The system shall be equipped with a digital electronic control display located on the pump operator's panel. Push button controls shall be integrated into the panel to turn the system on/off, control the foam percentage, direct which foam to use on a multi-tank system, and to set the operation modes (automatic, manual, draft, calibration, or flush).

The percent of injection shall have presets for Class A and Class B foam. These presets can be changed at the fire department as desired. The percent of injection shall be able to be easily changed at the scene to adjust to changing demands.

In order to minimize the use of abbreviations and interpretations, system information shall be displayed on the panel by way of .50 tall LEDs that total 14 characters (two (2) lines of seven (7) each). System on and foam pump on indicator lights shall also be included. Information displayed shall include mode of operation (automatic, manual, draft, calibration, or flush), foam supply selected (Class A or Class B), water total, foam total, foam percentage, remaining gallons, and time remaining.

Specification

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

	Bidder Complies	
	Yes	No

EXTERNAL FOAM CONCENTRATE CONNECTION

An external foam pick-up shall be provided to enable use of a foam agent that is not stored on the vehicle. The external foam pick-up shall be designed to allow continued operation after the on-board foam tank is empty. The external foam pick-up shall be designed to allow use with training foam or colored water for training purposes.

PANEL MOUNTED STRAINER/EXTERNAL PICK-UP CONNECTION

A bronze body strainer/connector unit shall be provided. The unit shall be mounted to the pump panel. The external foam pick-up shall be one (1) 1.00" male connection with chrome-plated cap integrated to a 2.00" strainer cleanout cap. A check valve shall be installed in the pick-up portion of the cleanout cap. A basket style stainless steel screen shall be installed in the body of the strainer/connector unit. Removal of the 2.00" cleanout cap shall be all that is required to gain access to and remove the stainless steel basket screen. The strainer/connector unit shall be ahead of the foam concentrate pump inlet port to insure that all agent reaching the foam pump has been strained.

PICK-UP HOSE

A 1.00" flexible hose with an end for insertion into foam containers shall be provided. The hose shall be supplied with a 1.00" female swivel NST thread swivel connector. The hose shall be shipped loose.

DISCHARGES

The foam system shall be plumbed to three (3) discharges. The discharges capable of dispensing foam shall be Front bumper line, bottom speed lay, and left side rear discharge.

SYSTEM ELECTRICAL LOAD

The foam proportioning shall not impose an electrical load on the vehicle electrical system any greater than five (5) amps at 12VDC.

FOAM SUPPLY VALVE

Electric valves shall be used for the foam supply. The foam supply valves shall be controlled at the foam system control head for ease of operation. The supply valves shall be electric, remote controlled, to eliminate air pockets in the foam tank supply hose.

MAINTENANCE MESSAGE

A message shall be displayed on the control head to advise when system maintenance needs to be performed. The message shall display interval for cleaning the foam strainer, cleaning for the water strainers, and changing the hydraulic oil.

FLUSH SYSTEM

The system shall be designed such that a flush mode shall be provided to allow the system to flush all foam concentrate with clear water. The flush circuit control logic shall ensure the foam

	Bidder Complies	
	Yes	No

tank supply valve is closed prior to opening the flush valve. The flush valve shall be operated at the foam system control head for ease of operation. The valve shall be electrically controlled and located as close to the foam tank supply valve as possible. A manual flush drain valve shall be labeled and located under the driver's side running board.

REFILL, FOAM TANKS

The foam system's proportioning pump shall be used to fill the Class A foam tank. This shall allow use of the auxiliary foam pick-up to pump the foam from pails or a drum on the ground into the foam tank. A foam shut-off switch shall be installed in the fill dome of the tank to shut the system down when the tank is full. The fill operation shall be controlled by a mode in the foam system controller stating TANK A FILL. While the proportioner pump is filling the tank, the controller shall display FILL TANK A. When the tank is full, as determined by the float switch in the tank dome, the pump shall stop and the controller shall display TANK A FULL.

A separate air operated fill pump, controlled by the foam system controller, shall be provided for filling the Class B foam tank. A separate inlet connection, mounted on the pump panel shall be provided for this fill system. A foam shut-off switch shall be installed in the fill dome of the tank to shut the system down when the tank is full. The connection shall be the same as the foam intake connection, in order to allow the use of the foam pick-up hose as the fill hose. The fill operation shall be controlled by a mode in the foam system controller stating TANK B FILL. To fill the tank, the controller shall start and run the air operated pump. While the pump runs, the controller shall display FILL TANK B. When the tank is full, as determined by the float switch in the tank dome, the pump shall stop and the controller shall display TANK B FULL.

FOAM TANK

The foam tank shall be an integral portion of the polypropylene water tank. The cell shall have a capacity of 50 gallons of foam with the intended use of Class B foam. The brand of foam stored in this tank shall be TBD. 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.

FOAM TANK DRAIN

A system of 1.00" foam tank drains shall be provided, integrated into the foam systems strainer and tank to foam pump valve management system.The tank to pump hoses running from the tank(s) to the panel mounted strainer shall 1.00" diameter.The foam system controller shall have a mode that allows for a given foam valve to be opened at will. Flow of foam from the tank valve to the strainer shall be usable as a tank drain mode.

An adaptor shall be supplied, that allows the 1.00" foam intake screen to assembly to be used as a drain outlet. The standard supplied 1.00" foam pick up hose shall be attached to the screen assembly by way of the adapter. The drain mode shall allow the operator to open and close the

	Bidder Complies	
	Yes	No

tank valve as required from the control head, to drain foam and re-fill foam containers through the connected hose, without foam spillage beneath the vehicle.

FOAM CELL

The cell 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 brand of foam stored in this cell shall be TBD. 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.

FOAM TANK DRAIN

A system of 1.00" foam tank drains shall be provided, integrated into the foam systems strainer and tank to foam pump valve management system.The tank to pump hoses running from the tank(s) to the panel mounted strainer shall 1.00" diameter.The foam system controller shall have a mode that allows for a given foam valve to be opened at will. Flow of foam from the tank valve to the strainer shall be usable as a tank drain mode.

An adaptor shall be supplied, that allows the 1.00" foam intake screen to assembly to be used as a drain outlet. The standard supplied, 1.00" foam pick up hose shall be attached to the screen assembly by way of the adapter. The drain mode shall allow the operator to open and close the tank valve as required from the control head, to drain foam and re-fill foam containers through the connected hose, without foam spillage beneath the vehicle.

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 support both the fire pump and the side running boards.

Compartment shall be mounted on chassis frame rails with rubber biscuits in a four point pattern to allow for chassis frame twist.

Pump compartment, pump, plumbing and gauge panels must be removable from the chassis as a single assembly.

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.

PUMP CONTROL PANELS (TOP MOUNT)

All pump controls and gauges to be properly marked and located above the pump to the rear of the walkway. Operator to face the rear of the truck when viewing the control panel from the operating position.

	Bidder Complies	
	Yes	No
The control panel shall be in two planes.		
The upper plane shall be hinged at the bottom with a full length stainless steel hinge.		
Both planes to be full width of the pump house structure.		
The side pump panels shall be 48.00" wide.		
The side pump panels shall be removable for ease of maintenance.		
Polished stainless steel trim collars to be installed around all inlets and outlets.		
Controls shall have chrome plated bezels encircling the opening securely mounted to the pump panel. Identification tags for the discharge controls shall be recessed within the same bezel. The discharge identification tags shall be color coded, with each discharge having its own unique color.		
All remaining identification tags shall be mounted on the pump panel in chrome plated bezels.		
WALKWAY A 19.00" wide walkway shall be provided for access to the top control panel. The walkway shall be constructed of bright aluminum treadplate and properly reinforced.		
There shall be six (6) six (6) Whelen, Model 01-066D068-00, LED lights provided to illuminate the walkway. The lights shall come on with the body perimeter lights.		
WALKWAY TOOL COMPARTMENT A tool compartment shall be provided on each side of the walkway. Each compartment shall have an aluminum treadplate door and shall be equipped with two (2) white LED lights with chrome bezels, one (1) in each compartment .		
PUMP PANEL CONFIGURATION The pump panel configuration shall be neat and orderly.		
PUMP AND GAUGE PANEL The side control panels shall be constructed of stainless steel with a brushed finish. A polished aluminum trim molding shall be provided on both sides of the panel.		
The gauge and top mount control panel shall be constructed of stainless steel with a brushed finish. A polished aluminum trim molding shall be provided around each panel.		
The gauge panel shall be hinged at the bottom with a full length stainless steel hinge. The fasteners the hold the panel in the up right position shall be quarter-turn style. Vinyl covered chains shall be used to hold the panel in the dropped position.		

	Bidder Complies	
	Yes	No
The driver's and passenger's side pump panels shall be removable and fastened with swell type fasteners.		
PUMP COMPARTMENT LIGHT There shall be one (1) Whelen®, Model 3SC0CDCR, 3.00" white 12 volt DC LED light(s) with Whelen, Model 3FLANGEC, flange(s) installed in the pump compartment.		
There shall be a switch accessible through a door on the pump panel included with this installation.		
Engine monitoring graduated LED indicators shall be incorporated with the pressure controller.		
Also provided at the pump panel shall be the following:		
- Master Pump Drain Control		
VACUUM AND PRESSURE GAUGES The pump vacuum and pressure gauges shall be liquid filled and manufactured by Class 1 Incorporated ©.		
The gauges shall be a minimum of 6.00" in diameter and shall have white faces with black lettering, with a pressure range of 30.00" 0-600 psi.		
The pump pressure and vacuum gauges shall be installed adjacent to each other at the pump operator's control panel.		
The green LED backlight shall be activated by the pump in gear interlock circuit. The intake gauge shall have a blue LED.		
Test port connections shall be provided at the pump operator's panel. One (1) shall be connected to the intake side of the pump, and the other to the discharge manifold of the pump. They shall have 0.25 in. standard pipe thread connections and polished stainless steel plugs. They shall be marked with a label.		
PRESSURE GAUGES The individual "line" pressure gauges for the discharges shall be interlube filled and manufactured by Class 1©.		
They shall be a minimum of 2.00" in diameter and shall have white faces with black lettering.		
Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.		
Gauges shall have a pressure range of 30"-0-400#.		

	Bidder Complies	
	Yes	No

The individual pressure gauge shall be installed as close to the outlet control as practical.

This gauge shall include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.

FLOWMETERS

There shall be two (2) Fire Research Insight, Model FPA400-010, combination digital flowmeter and pressure indicator kit installed for Deck gun and LDH discharges.

The module shall have a digital LED display for flow with super bright digits more than 3/8" high. Flow rate shall be displayed in GPM. The module shall have an analog display for pressure with an expanded scale in the normal operating range for more accurate readings. The pressure indicator input and movement shall be electronic. Pressure shall be displayed in PSI.

WATER LEVEL GAUGE

An electric water level gauge shall be incorporated in the pressure controller that registers water level by means of 9 LEDs. They shall be at 1/8 level increments with a tank empty LED. The LEDs shall be a bright type that is readable in sunlight, and have a full 180-degree of clear viewing.

To further alert the pump operator, the gauge shall have a warning flash when the tank volume is less than 25%, and shall have "Down Chasing LEDs when the tank is almost empty.

The level measurement shall be ascertained by sensing the head pressure of the fluid in the tank or cell.

FOAM LEVEL GAUGE

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

- 100% = Green

- 75% = Yellow

- 50% = Yellow

- 25% = Yellow

- Refill · Red

	Bidder Complies	
	Yes	No

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

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

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

LIGHT SHIELDS

Illumination shall be provided by LED lights installed under a stainless steel shield at the pump control panel. External illumination shall be a minimum of five (5) foot-candles on the face of the device. Internal illumination shall be a minimum of four (4) foot-lamberts.

There shall be five (5) Fire Research Firefly, Model LED115-Q01 LED lights provided to illuminate controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus and the equipment on it.

A light shall come on above the pump panel light switch when the parking brake is set. This is to afford the operator some illumination when first approaching the control panel. A green pump engaged indicator shall come on at the operator's panel when the pump is shifted into gear from inside the cab. One pump panel light shall also come on at the operator's panel when the pump is in "ok to pump" mode. The remaining lights to be actuated from a switch located on the pump panel.

ADDITIONAL STEP/LIGHT SHIELD

There will be an additional aluminum treadplate stepping surface no less than 8.00" deep and properly reinforced to support a man's weight, installed over the driver's side pump panel.

- There will be three (3) Fire Research Firefly, part number LED115-Q01, 12 volt DC white LED lights installed under the step to illuminate the controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus. These lights will be activated by a switch on the pump panel.

There will be one (1) white LED, step light provided above the step. In order to ensure exceptional illumination, each step light will provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light. The step light will be activated by the pump panel light switch.

	Bidder Complies	
	Yes	No

ADDITIONAL STEP/LIGHT SHIELD

There shall be an additional aluminum treadplate stepping surface no less than 8.00" deep and properly reinforced to support a man's weight, installed over the passenger's side pump panel.

- There shall be three (3) Fire Research Firefly, part number LED115-Q01, 12 volt DC white LED lights installed under the step to illuminate the controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus. These lights shall be activated by a switch on the pump panel.

There shall be one (1) white LED, step light provided above the step. In order to ensure exceptional illumination, each step light shall provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light. The step light shall be activated by the pump panel light switch.

AIR HORN SYSTEM

Two (2) Grover Stutter Tone 24.00" air horns shall be provided and located in the front bumper, recessed one each side. The horn system shall be piped to the air brake system wet tank utilizing .38" tubing. A pressure protection valve shall be installed in-line to prevent loss of air in the air brake system.

AIR HORN CONTROL

The air horns shall be actuated by a chrome push button located on the officer's side of the engine tunnel and by the horn button in the steering wheel. The driver shall have the option to control the air horns or the chassis horns from the horn button by means of a selector switch located on the instrument panel.

ELECTRONIC SIREN

There shall be a Federal Signal, Model PA-4000, 200 watt electronic siren with flush mount controller and remote mounted amplifier provided. There shall be a noise cancelling microphone included.

This siren to be active when the battery switch is on and the ignition switch is on.

The siren shall be connected to the AM/FM stereo through the rebroadcast system.

Electronic siren head shall be located in the center console.

The electronic siren shall be controlled on the siren head only. No horn button or foot switches shall be required.

	Bidder Complies	
	Yes	No

SPEAKER

There shall be two (2) speakers provided. Each speaker shall be a Federal Signal DynaMax®, Model ES100, 100 watt. Each speaker shall use a Federal Signal, Model ESFMT-EF, recess mount with stainless steel grille. Each speaker shall be connected to the siren amplifier.

There shall be one (1) speaker recessed in the passenger's side and one (1) speaker recessed in the driver's side of the front bumper.

AUXILIARY MECHANICAL SIREN

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

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

The mechanical siren shall be mounted on the bumper deck plate. It shall be mounted on the left side. The siren mounting shall include a reinforcement plate.

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

CAB ROOF LIGHTBARS

There shall be three (3) 28.25" Whelen® Freedom™, LED lightbars mounted on the cab roof. One (1) 28.25" shall be centered above the windshield and one (1) 28.25" shall be on each side, above the driver's and passenger's door at a 30 degree angle off the front of the cab.

The front lightbar shall contain the following:

- Two (2) red flashing LED warning light modules facing the front
- Two (2) red flashing corner LED warning lights modules, one (1) in each front corner

The angled lightbars shall contain the following:

- One (1) blue flashing front corner LED warning light module
- One (1) red flashing LED warning light module facing the front
- One (1) white flashing LED warning light module facing the front
- One (1) red flashing rear corner LED warning light module
- One (1) red flashing LED warning light module on the end facing the outside

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

All the lightbars lenses shall be clear.

The white flashing LED modules shall be disabled when the parking brake is applied.

	Bidder Complies	
	Yes	No
The blue flashing forward corner modules, the red flashing modules facing the front and the red flashing modules on the end of the angled lightbar may be load managed when the parking brake is applied.		
CAB FACE WARNING LIGHTS There shall be four (4) Whelen®, Model M6*C, LED flashing warning lights installed on the cab face, above the headlights, mounted in a common bezel. • The driver's side front outside warning light to be red • The driver's side front inside warning light to be red • The passenger's side front inside warning light to be red • The passenger's side front outside warning light to be red All four (4) lights shall include a clear lens. There shall be a switch located in the cab, on the switch panel, to control the four (4) lights. The inside lights may be load managed if colored or disabled if white, when the parking brake is set.		
HEADLIGHT FLASHER The high beam headlights shall flash alternately between the left and right side. 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. The flashing shall automatically cancel when the hi-beam headlight switch is activated or when the parking brake is set.		
SIDE ZONE LOWER LIGHTING Six (6) Whelen Model M7* LED flashing warning lights with bezels shall be located in the following positions: Two (2) lights, one (1) each side on the bumper extension. The side front lights to be red. Two (2) lights, over crew cab compt. The side middle lights to be blue. Two (2) lights, by rear wheels, centered. The side rear lights to be red.		

	Bidder Complies	
	Yes	No

All six (6) lights shall include a clear lens.

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

INTERIOR CAB DOOR WARNING LIGHTS

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

The lights shall be installed per the following:

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

The color of the lights shall be red.

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

SIDE WARNING LIGHTS

There shall be two (2) Whelen, Model M9* LED flashing warning light(s) with bezel(s) provided one each side hatch compartment.

The color of the light(s) to be red to the front and blue to the rear.

All of these lights shall include a clear lens.

These lights shall be activated with the rear upper warning switch.

Any white warning lights shall be deactivated when the parking brake is set.

These lights may be load managed when the parking brake is applied.

REAR ZONE LOWER LIGHTING

There shall be two (2) Whelen®, Model M6*C LED flashing warning lights with Model M6FC, chrome flanges located at the rear of the apparatus.

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

Both lights shall include a lens that is clear.

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

	Bidder Complies	
	Yes	No

REAR WARNING LIGHTS

There shall be two (2) Whelen®, Model M9*C, LED flashing warning light(s) with bezel(s) provided each side high on rear compartment bulkheads.

The color of these light(s) shall be one (1) red light on the right and one (1) blue light on the left.

These light(s) shall be controlled with the rear upper warning switch.

These light(s) shall include a lens that is clear.

REAR/SIDE UPPER ZONE WARNING LIGHTS

There shall be four (4) Whelen, Model M9* LED lights provided at the following locations:

There shall be two (2) Whelen, Model M9J LED lights provided at the rear upper bulkhead, facing the rear of the truck:

- The driver's side light shall be split red/blue LED with a clear lens.
- The passenger's side light shall be split red/blue LED with a clear lens.

There shall be two (2) Whelen, Model M9** LED lights provided at the rear side upper corners of the side sheet facing the side of the truck:

- The side rear upper light(s) on the driver's side to be red.
- The side rear upper light(s) on the passenger's side to be red.

The color of the side facing LED light lenses shall be clear.

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

The rear warning lights shall be mounted on top of the compartmentation with all wiring totally enclosed. The rear deck lights shall be mounted on the beavertails as high as possible.

TRAFFIC DIRECTING LIGHT

There shall be one (1) Whelen®, Model TAL65, 36.01" long x 2.84" high x 2.24" deep, amber LED traffic directing light installed at the rear of the apparatus.

The Whelen, Model TACTLD1, control head shall be included with this installation.

The auxiliary warning mode shall be activated with the control head only.

This traffic directing light shall be recessed with a stainless steel trim plate at the rear of the apparatus as high as practical.

The traffic directing light control head shall be located in the driver side overhead switch panel in the right panel position.

	Bidder Complies	
	Yes	No

ELECTRICAL SYSTEM GENERAL DESIGN FOR ALTERNATING CURRENT

The following guidelines shall apply to the 120/240 VAC system installation:

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.

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).

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.

Grounding

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.

An equipment grounding means shall be provided in accordance with Section 250-91 (Grounding Conductor Material) of the NEC.

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.

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.

All power source system mechanical and electrical components shall be sized to support the continuous duty nameplate rating of the power source.

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.

	Bidder Complies	
	Yes	No
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.		
A power source specification label shall be permanently attached to the apparatus near the operator's control station. The label shall provide the operator with the information detailed in Figure 19-4.10.		
Direct drive (PTO) and portable generator installations shall comply with Article 445 (Generators) of the NEC.		
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.		
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).		
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).		
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)		
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		
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		

	Bidder Complies	
	Yes	No
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.		
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.		
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.		
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.		
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.		
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.		
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.		
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.		
Electrical System Testing The wiring and associated equipment shall be tested by the apparatus manufacturer or the installer of the line voltage system.		
The wiring and permanently connected devices and equipment shall be subjected to a dielectric voltage withstand test of 900-volts for one (1) minute. The test shall be conducted between live parts and the neutral conductor, and between live parts and the vehicle frame with any switches in the circuit(s) closed. This test shall be conducted after all body work has been completed.		

	Bidder Complies	
	Yes	No

Electrical polarity verification shall be made of all permanently wired equipment and receptacles to determine that connections have been properly made.

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.

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.

The power source shall be operated at 100 percent of its nameplate voltage for a minimum of two (2) hours unless the system meets category certification as defined in the current NFPA 1901 standard.

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.

GENERATOR

The apparatus shall be equipped with a complete electrical power system. The generator shall be a Harrison Model MCR Stealth 6.0 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.

Generator Performance

- Nominal Rating: 6,000 watts
- Continuous Duty Rating: 6,000 watts
- Nominal Volts: 120/240
- Amperage: 50 @ 120volts, 25 @ 240 volts
- Phase: Single
- Cycles: 60 hertz
- Engine Speed at Engagement: Idle

	Bidder Complies	
	Yes	No
The generator shall be driven by a transmission power take off unit, through a hydraulic pump and motor.		
The generator shall include an electrical control inside the cab. The hydraulic engagement supply shall be operational at any time (no interlocks).		
An electric/hydraulic valve shall supply hydraulic fluid to the clutch engagement unit provided on the chassis PTO drive.		
The generator hydraulic circuit shall include a soft start valve to protect the generator components during PTO engagement.		
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:		
- Voltage		
- Amperage for both lines		
- Frequency		
- Generator run hours		
- Over current indication		
- Over temperature indication		
- "Power On" indication		
- Two (2) fuse holders with two (2) amp fuses (for indicator light protection)		
The gauges and controls shall be installed near eye level in the compartment. Instruments shall be flush mounted in an appropriate sized weatherproof electrical enclosure. All instruments used shall be accurate within +/- two (2) percent. The load center shall have a circuit breaker to assure overload protection. The breaker furnished shall be properly sized to the generator output.		
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,		

	Bidder Complies	
	Yes	No

moisture and severe continuous usage. The following electrical components shall be the minimum acceptable quality standards for this apparatus:

Wiring:

All electrical wiring shall be fine stranded copper type. The wire shall be sized to the load and circuit breaker rating; ten (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.

Load Center:

The main load center shall be Cutler-Hammer with circuit breakers rated to load demand.

Circuit Breakers:

Individual breakers shall be provided for all on-line equipment to isolate a tripped breaker from affecting any other on-line equipment.

GENERATOR LOCATION

The generator shall be mounted in the in the area over the pump on the right side. The flooring in this area shall be either reinforced or constructed in such a manner that it shall handle the additional weight of the generator.

GENERATOR START

A switch shall be located on the driver and passenger cab instrument panel and at the pump panel area to engage the generator. The single switch in all locations shall engage the generator PTO and the electric field simultaneously.

CIRCUIT BREAKER PANEL

The circuit breaker panel shall be located high on the rear wall of compartment D3.

ELECTRIC CORD REEL

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

The exterior finish of the reel(s) shall be painted job color matching the body exterior.

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.

	Bidder Complies	
	Yes	No

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

A total of one (1) cord reel shall be provided one (1) in compartment R1 high and to the right.

The cord reel should be configured with three (3) conductors.

CORD

Provided for electric distribution shall be one (1) length installed on the reel of 150 feet of yellow 10/3 electrical cord, weather resistant 105 degree Celsius to -50 degree Celsius, 600 volt jacketed SOOW cord. No connector shall be installed on the end of the cord.

PORTABLE JUNCTION BOX

There shall be a total of one (1) electrical junction box(es), listed for use in wet locations and provided with light to indicate power on. Each box shall be designed to keep the exterior electrical components above 2.00" of standing water, protected from corrosion, and capable of being carried with a gloved hand.

There shall be a cable strain relief and direct connection, no plug provided for each box. Each box shall be powder coated yellow .

Each Akron, EJBX, box shall be provided with the following receptacles:

- Two (2) 120 vac, 20 amp duplex straight blade receptacles
- Two (2) 120 vac, 20 amp twist lock receptacles

POWER OUTLET STRIP

There shall be one (1) Sentrex Model M620BZLS 18.00" long x 2.00" wide x 1.75" thick, surge protected receptacle strip(s) with six (6) 20 amp 120 volt AC straight blade receptacles provided on rear shelf in crew cab.

The strip(s) selected shall be powered from the shoreline inlet through a receptacle located adjacent to the strip(s).

There shall be a label installed near the strip(s) that state the following:

- Line Voltage
- Current Ratting (amps)
- Phase
- Frequency
- Power Source

	Bidder Complies	
	Yes	No

120 VOLT RECEPTACLE

There shall be two (2), 20 amp 120 volt AC three (3) wire twist lock receptacle(s) with waterproof flip up cover(s) installed TBD. The NEMA configuration for the receptacles shall be L5-20R.

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
- Power Source

120 VOLT RECEPTACLE

There shall be two (2), 20 amp 120 volt AC three (3) wire straight blade duplex receptacle(s) installed behind the driver's seat and behind the officer's seat. The NEMA configuration for the receptacles shall be 5-20R.

The receptacle(s) shall be powered from the shoreline inlet.

There shall be a label installed near the receptacle(s) that state the following:

- Line Voltage
- Current Ratting (amps)
- Phase
- Frequency
- Power Source

120 VOLT EXTERIOR RECEPTACLE

Receptacle shall be a NEMA 5-20R, 120 volt, 20 amp, three (3) wire, single outlet with straight blade style. The receptacle shall have a weather resistant cover and be connected to the generator.

There shall be one (1) receptacle provided.

in cargo compartment.

LOOSE EQUIPMENT

The following equipment shall be furnished with the completed unit:

	Bidder Complies	
	Yes	No

- One (1) bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit

RADIO EQUIPMENT (RADIO'S TO BE DIGITAL)
One (1) APX UHF Remote Front & Rear Mobile Radio
Model # M25SSS9PW1-N 450-520MHz-40 Watts Analog Digital Trunking APX6500/225 Channel.
APX-02 Control Head, APX Software, Remote Mount, Standard Palm Mic, Additional Speaker, Conventional Operation, installed with all Programming.

One (1) APX VHF Remote Front & Rear Mobile Radio
Model # M25KTS9PW1-N 136-174MHz-110 Watts Analog DigitalTrunking APX6500. Dual Head ControlAPX-02 Control Head, APX Software, Remote Mount, Standard Palm Mic, Additional Speaker, Conventional Operation, installed with all Programming. APX 02 Green Color Housing

OPTIONAL PRICING FOR LDH HOSE (NOT INCLUDED IN BID PRICE)
Ten (10) Mercedes 230050100ATR, MegaFlo 5" large diameter supply hose, all synthetic double jacket, 5" x 100', Red with Storz locking couplings, Stencil hose: SFD & Date

$_____

One (1) Mercedes 230050100ATR, MegaFlo, Red, 5" X 50', Stencil Hose: SFD & Date

$_____

One (1) Mercedes 230050100ATR, MegaFlo, Red, 5" X 25', Stencil Hose: SFD & Date

$_____

NFPA REQUIRED LOOSE EQUIPMENT PROVIDED BY FIRE DEPARTMENT
The following loose equipment as outlined in NFPA 1901, 2009 edition, section 5.8.2 and 5.8.3 shall be provided by the fire department. All loose equipment shall be installed on the apparatus before placed in emergency service, unless the fire department waives NFPA section 4.21.

- 800 ft (60 m) of 2.50" (65 mm) or larger fire hose.
- 400 ft (120 m) of 1.50" (38 mm), 1.75" (45 mm), or 2.00" (52 mm) fire hose.
- One (1) handline nozzle, 200 gpm (750 L/min) minimum.
- Two (2) handline nozzles, 95 gpm (360 L/min) minimum.
- One (1) playpipe with shutoff and 1.00" (25 mm), 1.125" (29 mm), and 1.25" (32 mm) tips.

Specification

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

	Bidder Complies	
	Yes	No

- 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.

- One (1)-6.00" National Standard hose thread barrel strainer, chrome plated

DRY CHEMICAL EXTINGUISHER PROVIDED BY FIRE DEPARTMENT

NFPA 1901, 2009 edition, section 5.8.3 requires one (1) approved dry chemical portable fire extinguisher with a minimum 80-B:C rating mounted in a bracket fastened to the apparatus.

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

WATER EXTINGUISHER PROVIDED BY FIRE DEPARTMENT

NFPA 1901, 2009 edition, section 5.8.3 requires one (1) 2.5 gallon or larger water extinguisher mounted in a bracket fastened to the apparatus.

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

FLATHEAD AXE PROVIDED BY FIRE DEPARTMENT

NFPA 1901, 2009 edition, Section 5.8.3 requires one (1) flathead axe mounted in a bracket fastened to the apparatus.

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

PICKHEAD AXE PROVIDED BY FIRE DEPARTMENT

NFPA 1901, 2009 edition, Section 5.8.3 requires one (1) pickhead axe mounted in a bracket fastened to the apparatus.

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

	Bidder Complies	
	Yes	No

PAINT

The exterior custom cab and body painting procedure shall consist of a seven (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. A final pure water rinse shall be applied to all metal surfaces.
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 topcoated.
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 - Two (2) coats of Clear Coat shall be applied over the Basecoat color. The Clear Coat is a two-component high solids urethane that provides superior gloss and durability to the exterior surfaces. Lap style and roll-up doors shall be Clear Coated to match the body. Paint warranty for the roll-up doors shall be provided by the roll-up door manufacture.

	Bidder Complies	
	Yes	No

All removable items such as brackets, compartment doors, door hinges, and trim shall be removed and 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.

The cab shall be two-tone, with the upper section painted match Job 19036, 252 White along with a shield design on the cab face and lower section of the cab and body painted Match Job 19036, Red 161.

PAINT - ENVIRONMENTAL IMPACT

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

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

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

PAINT CHASSIS FRAME ASSEMBLY

The chassis frame assembly shall be painted 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.

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

- Frame rails

	Bidder Complies	
	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
- Fuel tank
- Castings
- Individual piece parts used in chassis and body assembly

Components treated with epoxy E-coat protection prior to paint:

- Two (2) C-channel frame rails
- Two (2) frame liners

The E-coat process shall meet the technical properties shown.

COMPARTMENT INTERIOR PAINT

The interior of compartmentation shall be painted with a gray spatter type paint.

REFLECTIVE STRIPES

Three (3) reflective stripes shall be provided across the front of the vehicle and along the sides of the body. The reflective band shall consist of a 1.00" white stripe at the top with a 1.00" gap then a 6.00" white stripe with a 1.00" gap and a 1.00" white stripe on the bottom.

The reflective band provided on the cab face shall be at the headlight level.

CHEVRON STRIPING, REAR

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.

The colors shall be red and fluorescent yellow green diamond grade.

Each stripe shall be 6.00" in width.

	Bidder Complies	
	Yes	No
This shall meet the requirements of NFPA 1901, 2009 edition, which states that 50% of the rear surface shall be covered with chevron striping.		
REFLECTIVE STRIPE, CAB DOORS 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.		
This stripe shall meet the NFPA 1901 requirement.		
GOLD LEAF LETTERING AND STIPING Genuine 23kt gold leaf lettering, striping and other designs shall be provided to customer specifications by Ed May, Wallington, N.J.		
CAB GRILLE DESIGN An American flag design shall be painted on the cab grille.		
E-COATING OF STEEL COMPONENTS The following components shall be treated with an epoxy E-coat to provide resistance to corrosion and chemicals:		
Cross members TAK-4® weldments (side plates and side plate interconnecting structure members) (if applicable) Torsion bar anchor weldments (if applicable) Battery boxes Bumper extension weldment Frame extensions Body mounting angles Rear body support weldment Under body support weldments (front and rear) Pump house substructure (walkway if applicable)		
The following components shall not be e-coated: Air tanks Fuel tank Castings Individual piece parts used in chassis and body assembly		
The e-coated parts shall have a Red top coat as well to provide an additional layer of protection and provide a consistent finish.		

	Bidder Complies	
	Yes	No

FACTORY VISIT FINAL INSPECTION

A factory visit shall be provided for six (6) persons after the apparatus has been completed and prior to delivery to New Jersey.

FACTORY PRECONSTRUCTION VISIT

A trip to the bidders factory shall be provided for six (6) persons when the approval prints are prepared. The purpose of the trip is to view apparatus under construction to visualize what is being proposed, to review the approval drawings with the contract administrator and any other of the manufacturer's personnel as necessary and to sign the prints to begin the construction process.

FIRE APPARATUS PARTS CD MANUAL

There shall be two (2) custom parts manuals for the complete fire apparatus provided in CD format with the completed unit.

The manuals 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

The manuals 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.

SERVICE PARTS INTERNET SITE

The service parts information included in these manuals are also available on the factory website. The website offers additional functions and features not contained in this manual, such as digital photographs and line drawings of select items. The website also features electronic search tools to assist in locating parts quickly.

CHASSIS SERVICE CD MANUALS

There shall be two (2) CD format chassis service manuals containing parts and service information on major components provided with the completed unit.

The manual shall contain the following sections:

- Job number
- Table of contents

	Bidder Complies	
	Yes	No

- Troubleshooting
- Front Axle/Suspension
- Brakes
- EngineTires
- 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.

CHASSIS OPERATION CD MANUALS

There shall be two (2) CD format chassis operation manuals provided.

ONE (1) YEAR MATERIAL AND WORKMANSHIP

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

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

ENGINE WARRANTY

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

STEERING GEAR WARRANTY

A Sheppard **three (3) year** limited steering gear warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.

FIFTY (50) YEAR STRUCTURAL INTEGRITY

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

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

Specification

	Bidder Complies	
	Yes	No
FRONT AXLE THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY Independent front suspension shall be provided with a **three (3) year** material and workmanship limited warranty. The manufacturer's warranty shall provide that the independent front suspension and steering gears be free from any defect related to material and workmanship on the portion of the apparatus built by the manufacturer that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (no exception).		
REAR AXLE TWO (2) YEAR MATERIAL AND WORKMANSHIP WARRANTY A Meritor™ Axle **two (2) year** limited warranty shall be provided.		
ABS BRAKE SYSTEM THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY A Meritor Wabco™ ABS brake system **three (3) year** limited warranty shall be provided.		
TEN (10) YEAR STRUCTURAL INTEGRITY The new cab shall be provided with a **ten (10) year** material and workmanship limited warranty. The warranty shall cover such portions of the cab built by the manufacturer as being free from structural failures caused by defects in material and workmanship that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (no exception).		
TEN (10) YEAR PRO-RATED PAINT AND CORROSION Each new piece of apparatus shall be provided with a **ten (10) year** pro-rated paint and corrosion limited warranty on the apparatus cab. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (no exception).		
FIVE (5) YEAR MATERIAL AND WORKMANSHIP The electronic modules and display(s) shall be provided with a five (5) year material and workmanship limited warranty. The warranty shall cover electronic modules to be free from failures caused by defects in material and workmanship. A copy of the warranty certificate shall be submitted with the bid package (no exception).		
CAMERA SYSTEM WARRANTY A fifty four (54) month warranty shall be provided for the camera system.		

	Bidder Complies	
	Yes	No
COMPARTMENT LIGHT WARRANTY A ten (10) year material and workmanship limited warranty shall be provided for the 12 volt DC LED strip lights. The warranty shall cover the LED strip lights to be free from defects in material and workmanship that would arise under normal use. A copy of the warranty certificate shall be submitted with the bid package (no exception).		
TRANSMISSION WARRANTY The transmission shall have a **five (5) year/unlimited mileage** warranty covering 100 percent parts and labor. The warranty is to be provided by Allison Transmission and not the apparatus builder.		
TRANSMISSION COOLER WARRANTY The transmission cooler shall carry a five (5) year parts and labor warranty (exclusive to the transmission cooler). In addition, a collateral damage warranty shall also be in effect for the first three (3) years of the warranty coverage and shall not exceed $10,000 per occurrence. A copy of the warranty certificate shall be submitted with the bid package.		
WATER TANK WARRANTY The UPF poly water tank shall be provided with a lifetime material and workmanship limited warranty. A copy of the warranty certificate shall be submitted with the bid package (no exception).		
TEN (10) YEAR STRUCTURAL INTEGRITY Each new piece of apparatus shall be provided with a **ten (10) year** material and workmanship limited warranty on the apparatus body. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (no exception).		
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 a period of seven (7) years. The door ajar switch shall be warranted for a period of three (3) years and all other electrical components shall be warranted for a period of one (1) year. A seven (7) year limited warranty shall be provided on painted roll up doors. A copy of the warranty certificate shall be submitted with the bid package.		

	Bidder Complies	
	Yes	No

PUMP WARRANTY

The Waterous pump shall be provided with a **five (5) year** material and workmanship limited warranty.

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

TEN (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 **ten (10) years or 100,000 miles**. This covers structural failures caused by defective design or workmanship, or perforation caused by corrosion, provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original purchaser for a period of ten years from the date of delivery.

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

FOAM SYSTEM WARRANTY

A **one (1) year** material and workmanship limited warranty shall be provided on the foam system. A **five (5) year** material and workmanship limited warranty shall be provided on the foam system control head.

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

TWO (2) YEAR GENERATOR MATERIAL AND WORKMANSHIP WARRANTY

A Harrison Hydra-Gen generator **two (2) year** limited warranty shall be provided.

TEN (10) YEAR PRO-RATED PAINT AND CORROSION

Each new piece of apparatus shall be provided with a **ten (10) year** pro-rated paint and corrosion limited warranty on the apparatus body. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.

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

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.

	Bidder Complies	
	Yes	No

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 bidder's chassis. The certification shall be provided at the time of delivery.

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.

CAB INTEGRITY CERTIFICATION

The fire apparatus manufacturer shall provide a cab crash test certification with this proposal. The certification states that the cab must meet or exceed the requirements below:

- 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 100,000 lb. This value shall be 450 percent of the ECE 29 criteria, which must be equivalent to the front axle rating up to a maximum of ten (10) metric tons.

- Side Impact

The cab shall be subjected to dynamic preload with 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 energy. This test shall closely represent the forces a cab shall see in a rollover incident.

- Frontal Impact

The cab shall withstand a frontal force produced from 65,200 ft-lb of energy using a swing-bob type platen.

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

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

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

	Bidder Complies	
	Yes	No

CAB HEATER CERTIFICATION

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

AMP DRAW REPORT

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

The manufacturer of the apparatus shall provide the following:

- Documentation of the electrical system performance tests.
- A written load analysis, which shall include the following:
  - The nameplate rating of the alternator.
  - The alternator rating under the conditions specified per:
    - Applicable NFPA 1901 or 1906 (Current Edition).
  - The minimum continuous load of each component that is specified per:
    - Applicable NFPA 1901 or 1906 (Current Edition).
  - Additional loads that, when added to the minimum continuous load, determine the total connected load.
  - Each individual intermittent load.

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

SCHEDULE 4
AFFIDAVIT OF NON-COLLUSION

RE: Triple Combination Pumper

STATE OF NEW JERSEY)
) ss.:
COUNTY OF)

I, _____ residing at _____ in the City/Town/Township/Borough of _____, and State of _____, of full age, being duly sworn according to law upon my oath depose and say:

1. I am the _____ of the firm of _____, the bidder making the bid for the above-named project, services and/or material bid, and I executed the Bid Proposal Form with full authority to do so; and I state that the bidder has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free, competitive bidding in connection with the above-named project and/or material bid, and that all statements contained in the bid and in this Affidavit are true and correct, and made with full knowledge that the Town of Secaucus (the "Town") relies upon the truth of the statements contained in the Bid Documents completed and submitted by the bidder, and in the statements contained in this Affidavit, in awarding the contract for the said project, services and/or material bid.

2. I further warrant that no person or selling agency has been employed or retained to solicit or secure such contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by _____.

_____
(Signature of Affiant)

Subscribed and sworn to before me
this _____ day of _____, 20__.

_____
(Printed Name)

_____
NOTARY PUBLIC

_____
(Title)

SCHEDULE 5
AFFIDAVIT AND QUESTIONNAIRE OF BIDDER'S EXPERIENCE AND FINANCIAL RESPONSIBILITY:

AFFIDAVIT

STATE OF NEW JERSEY }

COUNTY OF HUDSON } SS: Town of Secaucus

I, _____, am the _____
(Name of Affiant) (Identify Relationship to Bidder)
of _____, and being duly
(Name of Bidder)
sworn, I depose and say:

1. All of the answers set forth in the attached Questionnaire are true and each question is answered on the basis of my personal knowledge, or based on my diligent inquiry.

2. All of the answers given in the Questionnaire are given by me for the express purpose of inducing the Town of Secaucus, to award the Contract to _____.
(Name of Bidder)

3. I understand and agree that the Town of Secaucus will rely upon the information provided in the Questionnaire in determining the lowest responsible bidder to be awarded the contract.

4. I also understand and agree that the Town of Secaucus may reject the bid in the event that the answer to any of the foregoing questions is false.

5. I do hereby authorize the Town of Secaucus to inquire about or to investigate the answer to any question provided in the Questionnaire, and I further authorize any person or organization that has knowledge of the facts supplied, or which should have been supplied, in the Questionnaire to furnish the Town of Secaucus with any information necessary to verify the answers given.

_____
(Signature of Affiant)

_____
(Printed Name)

Subscribed and sworn to before me this
_____ day of _____ 20__.

_____
(Title)

_____
NOTARY PUBLIC

QUESTIONNAIRE

This Questionnaire must be completed and submitted as part of the bid. Failure to complete this form or to provide any of the information required herein may result in rejection of the bid.

1. How many years has the bidder been engaged in the business of providing the services or products requested by the Bid Documents under the present firm name?

_____

2. List any other names under which the bidder, its partners or officers have conducted business in the past three (3) years, and the number of years business was conducted under that name.

_____

3. When was the bidder organized, formed or incorporated?

_____

4. List three bank references with contact information:

_____

_____

_____

5. Credit available for this Contract?

_____

6. List the names and home addresses of all the officers of the bidder, noting their position in the Company:

_____

_____

_____

7. List the name of executive who will give personnel attention to the project:

_____

8. Has the bidder ever been adjudged bankrupt or been subject to a receivership or an order of reorganization? If so, give details and particulars.

_____

_____

9. Is the bidder at this timé subject to any court order relating to bankruptcy, liquidation or reorganization? If so, give details and particulars.

_____

_____

10. Has the bidder, its partners or officers, failed to perform any contract in the past three (3) years? If the answer is "Yes", state when, where and why. A complete explanation is required.

_____

11. Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against the bidder, or any of it principals?

_____

12. Has the bidder filed any law suits or requested arbitration with regard to any contracts within the last five years? (If the answer is yes, please attach details).

_____

13. Within the last five years, has any officer or principal of the bidder ever been an officer or principal of another organization that failed to complete a contract? (If the answer is yes, please attach details).

_____

14. On a separate sheet, list the private and public contracts the bidder is currently performing, giving the name the owner, contract amount, percent complete and scheduled completion date, and owner contact number.

15. On a separate sheet, list the contracts the bidder has completed this past year, giving the name of the owner, owner contact number, contract amount, date of completion.

18. Trade References with contact information:

_____

_____

_____

19. Name of Bonding Company:

_____

_____

20. Name and address (no P.O. Box) of agent authorized to accept service:

_____

_____

SCHEDULE 6

STATEMENT OF OWNERSHIP OF CORPORATION OR PARTNERSHIP

New Jersey law, N.J.S.A. 52:25-24.2, provides that no corporation or partnership shall be awarded any state, county, municipal or school district contract for the performance of any work or the furnishing of any materials or supplies, unless prior to the receipt of the bid or accompanying the bid of said corporation or partnership there is submitted a statement. The statement shall set forth the names and addresses of all stockholders in the corporation or partnership who own ten percent (10%) or more of its stock of any class, or of all individual partners in the partnership who own a ten percent (10%) or greater interest therein.

If one or more of such stockholders or partners is itself a corporation or partnership, the stockholders holding ten percent (10%) or more of that corporation's stock, or the individual partners owning ten percent (10%) or greater interest in that partnership, as the case may be, shall also be listed. The disclosure shall be continued until names and addresses of every non-corporate stockholder, and individual partner, exceeding the ten percent (10%) ownership criteria established in this act has been listed.

Accordingly, this statement must be completed and submitted simultaneously with the bid.

In the case of corporate or partnership stockholders, continue the disclosure on extra sheets until all required individual stockholders or partners are disclosed.

(1) Names and addresses of all stockholders in _____, a corporation, who own ten percent (10%) or more of its stock of any class are:

Names:	Addresses:
_____	_____
_____	_____
_____	_____
_____	_____

(2) Names and addresses of all partners of _____, a partnership, owning an interest therein of ten percent (10%) or greater are:

Names:	Addresses:
_____	_____
_____	_____
_____	_____
_____	_____

(3) Continued information on stockholders or partnerships that are themselves corporations or partnerships (Use extra sheets if necessary and attach).

WITNESS:

_____(seal)
(Contractor)

_____
(Signature)

By:_____
(Authorized Signature)

_____
(Printed Name)

_____
(Printed Name)

_____
(Title)

_____
(Title)

_____
(Date)

_____
(Date)

Schedule 7

TOWN OF SECAUCUS

ACKNOWLEDGMENT OF SECAUCUS PAY TO PLAY ORDINANCE

Chapter 26 of the Secaucus Code addresses "Pay to Play" reforms in the Town of Secaucus. The undersigned acknowledges that he/she has read and understands the ordinance. Moreover, the undersigned represents that he/she, his/her firm, spouse and child living at home has not (and will not) solicited or made any contributions of money, pledge of contribution, including in-kind contributions in excess of the allowable limits within two (2) calendar years immediately preceding the date of the contract or agreement or the effective date of Chapter 26, whichever is shorter, to: (i) any municipal candidate or holder of public office having ultimate responsibility for the award of a contract, or (ii) to any Town of Secaucus party committee, or (iii) to any candidate committee, PAC or CPC that regularly engages in, or whose primary purpose is the support of Secaucus municipal elections and/or municipal parties, between the time of first communication between that professional business entity or vendor and the municipality regarding a specific professional services agreement or goods and services agreement, as the case may be, and the later of the termination of negotiations or rejection of any proposal, or the completion of the contract or agreement.

Subscribed and sworn to before me
this _____ day of _____, 2015

_____
Notary Public
State of _____
My Commission Expires _____

_____
(Signature of Professional)

_____
(Type or print name of Affiant and Title under signature)

SCHEDULE 8

DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN

OPS Number: _____Proposer:

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that the person or entity, or one of the person or entity's parents, subsidiaries, or affiliates, is not identified on a list created and maintained by the New Jersey Department of the Treasury as a person or entity engaging in investment activities in Iran. If the Director finds a person or entity to be in violation of the principles which are the subject of this law, s/he shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the person or entity.

I certify, pursuant to Public Law 2012, c. 25, that the person or entity listed above for which I am authorized to submit a proposal:

___ is not providing goods or services of $20,000,000 or more in the energy sector of Iran, including a person or entity that provides oil or liquefied natural gas tankers, or products used to construct or maintain pipelines used to transport oil or liquefied natural gas, for the energy sector of Iran, **AND**

___ is not a financial institution that extends $20,000,000 or more in credit to another person or entity, for 45 days or more, if that person or entity will use the credit to provide goods or services in the energy sector in Iran.

In the event that a person or entity is unable to make the above certification because it or one of its parents, subsidiaries, or affiliates has engaged in the above-referenced activities, a detailed, accurate and precise description of the activities must be provided in part 2 below to the New Jersey Turnpike Authority under penalty of perjury. Failure to provide such will result in the proposal being rendered as non-responsive and appropriate penalties, fines and/or sanctions will be assessed as provided by law.

PART 2: PLEASE PROVIDE FURTHER INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN

You must provide a detailed, accurate and precise description of the activities of the proposer, or one of its parents, subsidiaries or affiliates, engaging in the investment activities in Iran outlined above by completing the boxes below.

Name:_____ Relationship to Proposer:

Description of Activities:_____

Duration of Engagement:_____ Anticipated Cessation Date:__

Proposer Contact Name: _____ Contact Phone Number:

Certification: I, being duly sworn upon my oath, hereby represent and state that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I attest that I am authorized to execute this certification on behalf of the above-referenced person or entity. I acknowledge that the State of New Jersey is relying on the information contained herein and thereby acknowledge that I am under a continuing obligation from the date of this certification through the completion of any contracts with the State to notify the State in writing of any changes to the answers of information contained herein. I acknowledge that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I recognize that I am subject to criminal prosecution under the law and that it will also constitute a material breach of my agreement(s) with the State of New Jersey and that the State at its option may declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print): _____ Signature:

Title: Date: