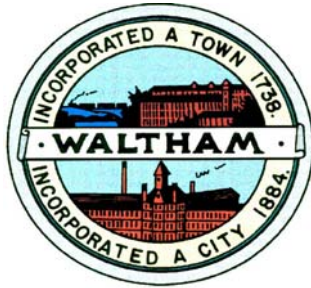


# The City of Waltham Fire Department



**Invites  
Interested Parties  
To propose the best offer and or bid  
For the service or product herewith described:**

**Triple Combination Pumper Apparatus  
On a Custom Chassis  
With a Stainless Steel Cab and Body**

**The bid opening will be held: 2:00 PM, Thursday February 28, 2013**

*Phone: 781-314-3244, Fax: 781-314-3245*

# **Table of Contents:**

- **Invitation to Bid**
- **Intent of the Project**
- **Agreement**
- **Instructions**
- **General Conditions**
- **Specifications**
- **Compliance**
- **Bid Price**

# **Invitation to Bid**

# The City of Waltham

## Purchasing Department

### REQUEST FOR PROPOSAL (RFP)

Under the rules of M.G.L. Chapter 30B, the Chief Procurement Officer of the City of Waltham Purchasing Department hereby requests proposals for:

### Triple Combination Pumper Apparatus on a Custom Chassis With a Stainless Steel Cab and Body

Price Proposals will be received IN A SEPARATE SEALED PRICE ENVELOPE at the office of the Purchasing Agent, City Hall, 610 Main Street, Waltham MA 02452, until,

**2:00 PM, Thursday February 28, 2013**

At which time and place the bids will be publicly opened and read.

Specifications and information available on line by visiting the Waltham Purchasing Department web site at [www.city.waltham.ma.us/open-bids](http://www.city.waltham.ma.us/open-bids)

**BIDS MUST BE SIGNED AND ENCLOSED IN A SEALED ENVELOPE AND MARKED:**

**BID FOR: Fire Department, Pumper**

A 10% Bid Bond or Certified Check must accompany each bid submitted and made payable to, and become the property of the City of Waltham, if the successful bidder refuses or neglects to comply with the terms of the Contract.

If the Bidder is a corporation, state your correct corporate name and State of incorporation. If Bidder is a partnership, state names and addresses of partners. If Bidder is a trust or other legal entity, state correct names and addresses of trustees or names and address of those legally authorized to bid and enter into contracts.

**EXCEPTION OR ALTERNATES TO SPECIFICATIONS, TERMS OF SALE, AND DISCOUNTS AVAILABLE, MUST BE INCLUDED IN THE BID PRIOR TO OPENING DATE.**

# Intent of Project

**The Purchasing Department of the City of Waltham wishes to purchase on behalf of the Waltham Fire department a Triple Combination Pumper Apparatus On a Custom Chassis With a Stainless Steel Cab and Body with a capacity of 500 gal/1250 gpm.**

**AGREEMENT**

**CITY OF WALTHAM**

**ARTICLE 1.** This agreement, made this \_\_\_\_\_ day of \_\_\_\_\_, 2012 by and between the CITY OF WALTHAM, party of the first part, hereinafter called the CITY, by its MAYOR, and

---

\_\_\_\_\_ hereinafter called the CONTRACTOR.

**ARTICLE 2.** Witnesseth, that the parties to this agreement, each in consideration of the agreement on the part of the others herein contained, do hereby agree, the CITY OF WALTHAM for itself, and said contractor for his heirs, executors, administrators and assigns as follows:

To furnish all equipment, machinery, tools and labor, to furnish and deliver all materials required to be furnished (except as otherwise specified) and deliver in and about the project and to do and perform all work in strict conformity with the provisions of this Contract and of the Notice to Bidders, bid, Project Manual, and Drawings hereto annexed. The said Notice to Bidders, bid, Project Manual, and Drawings are hereby made a part of this contract as fully and to the same effect as if the same had been set forth at length and incorporated in the contracts.

**ARTICLE 3.** In consideration of the foregoing premises the CITY agrees to pay and the CONTRACTOR agrees to receive as full compensation for everything furnished and done by the CONTRACTOR under this contract, including all work required by not included in the items herein mentioned, and also for all loss or damage arising out of the nature of the work aforesaid, or from the action of the elements, or from any unforeseen obstruction or difficulty encountered in the prosecution of the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work specified, and for well and faithfully completing the work, and the whole thereof, as herein provided, such prices as are set forth in the accompanying bid.

This Agreement entered into as of the day and year first written above.

CITY OF WALTHAM, MASSACHUSETTS

**FOR THE CITY**

\_\_\_\_\_  
Jeannette A. McCarthy, MAYOR,  
City of Waltham  
Date: \_\_\_\_\_

\_\_\_\_\_  
Luke Stanton, Assistant City Solicitor  
Date: \_\_\_\_\_  
APPROVED AS TO FORM ONLY

\_\_\_\_\_  
Paul Ciccone, Chief, Fire Department  
Date: \_\_\_\_\_

\_\_\_\_\_  
Joseph Pedulla, Purchasing Agent  
Date: \_\_\_\_\_

\_\_\_\_\_  
Paul Centofanti, Auditor  
Date: \_\_\_\_\_

I CERTIFY THAT SUFFICIENT FUNDS  
ARE AVAILABLE FOR THIS CONTRACT

**FOR THE COMPANY**

\_\_\_\_\_  
CONTRACTOR (Signature),  
Date: \_\_\_\_\_

\_\_\_\_\_  
Company

\_\_\_\_\_  
Address

# Instructions



## INSTRUCTIONS FOR BIDDERS

1. **READ ALL DOCUMENTS.**

Bidders should familiarize themselves with all the documents contained herein; it is mandatory that all Bids be in compliance with all the provisions contained in said documents.

2. **FORMS AND ATTACHMENTS.**

Bids are to be completed on the forms provided ONLY and enclosed in a sealed envelope marked on the outside "BID (title)" and the name and address of bidder. Attachments submitted in addition to the Waltham Purchasing Department produced forms may not be considered.

3. **PRINTED OR TYPED RESPONSE.**

All information must be typewritten or printed in ink, including the price the bidder offers in the space as provided on the bid form.

4. **CORRECTIONS.**

Bids that are submitted containing cross outs, white outs or erasures, will be rejected.

All corrections or modifications to the original bid are to be submitted in a separate envelope, properly marked on the outside, "CORRECTION/ MODIFICATION TO BID (title)" and submitted prior to the bid opening.

**ALL DOCUMENTS SUBMITTED WITH YOUR RESPONSE WILL BE INCORPORATED INTO THE CONTRACT.**

5. **PRICE IS ALL INCLUSIVE.**

Bid prices shall encompass everything necessary for furnishing all items, materials, supplies or services as specified, and in accordance with the specifications, including proper packing, cost of delivery, and in the case of services, completion of same, as per specifications.

6. **PRICE DISCREPANCY.**

In the event of a discrepancy between the Unit Price and the Extension, the Unit Price shall prevail.

**7. EXPLANATIONS, EXCEPTIONS**

Explanations, exceptions or other information pertinent to the specifications may be made in writing and included in the same envelope with the bid.

**8. BID DEPOSITS.**

Bid deposits are to be made payable to the City of Waltham. In the event that the successful bidder fails to execute a Contract within (10) days of the receipt of said contract, such security shall be retained by the city as liquidated damages. Unsuccessful bidders' deposits will be returned immediately following the award to said successful bidder.

**9. WITHDRAW.**

A Bid may be withdrawn by written request prior to the schedule for the Bid Opening. No withdrawals are permitted after the bid opening date and time. Withdrawals after the bid opening date will cause the forfeit of the bid Deposit.

**10. AWARD.**

Bids will be awarded not later than (90) ninety days after the scheduled bid opening date, unless otherwise stated, in the specifications. Unless otherwise specified, bids will be evaluated on the basis of, completeness of your RFP response, responsiveness, responsibility, best price and experience.

**11. AWARD CRITERIA.**

Qualified and responsive proposals will be evaluated based on Price, Technical, and Compliance requirements:

**12. DISCOUNTS.**

Discounts for prompt payments will be considered when making awards.

**13. TAX EXEMPT.**

Purchases by the City of Waltham is exempt from any Federal, State or Massachusetts Municipal Sales and/or Excise Taxes.

**14. SAMPLES.**

The City of Waltham may require the submission of samples either before or after the awarding of a contract. Samples are to be submitted, at no charge to the City, so as to ascertain the product's suitability. If specifically stated in the Bid that samples are required, said samples must be submitted with the Bid prior to the Official Bid Opening. Failure to submit said samples would be cause for rejection of Bid. All samples must be

called for and picked up within (30) thirty days of award or said samples will be presumed abandoned and will be disposed of.

15. **ACTIVE VENDOR LIST.**

Vendors who wish to remain on the Active Bid List must either submit a Bid, No Bid, or a letter requesting same, no later than the Official Bid Opening. This is applicable to those vendors who have received the Invitation to Bid.

16. **FUNDS APPROPRIATION.**

**THE CONTRACT OBLIGATION ON BEHALF OF THE CITY IS SUBJECT TO PRIOR APPROPRIATION OF MONIES FROM THE GOVERNMENTAL BODY AND AUTHORIZATION BY THE MAYOR.**

17. **THE AWARDING AUTHORITY RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS, OR ANY PART OF ANY BID, WHICH IN THE OPINION OF THE AWARDING AUTHORITY, IS IN THE BEST INTERESTS OF THE CITY OF WALTHAM.**

18. **THE TAX ATTESTATION CLAUSE, CERTIFICATION OF NON-COLLUSION AND THE CERTIFICATE OF VOTE AUTHORIZATION,** are required by statute and are an integral part

of the Invitation for Bid and must be completed and signed by the person submitting the Bid, or by the person/persons who are officially authorized to do so. Failure to do so may disqualify the bid.

19. **STANDARD OF QUALITY.**

Where, in the specifications, one certain kind, type, catalog number, brand or manufacturer of material is named, it shall be regarded as the required standard of quality. Where two or more are named, these are presumed to be equal and the Bidder may select one or the other. If the Bidder proposes to offer a substitute as an equal, he shall so indicate on the Bid Form, the kind, type, catalog number, brand, or manufacturer of material that is offered as an equal, and describe where it differs from the specifications. Substituted items must be capable of performing all the functions and/or operational features described or indicated in the specifications. Failure to indicate the description of any substitute item on the Bid will be interpreted to mean that the Bidder will furnish the item or service as specified.

**20. MODIFICATION.**

No agreement, understanding, alteration or variation of the agreement, terms or provisions herein contained shall bind the parties, hereto unless made and executed in writing by the parties hereto.

**21. ASSIGNMENT.**

The final payment for work done under this Contract shall be made only after the Contractor has signed a statement under the penalty of perjury, certifying that he has completed the work described in the final estimate. Neither party hereto shall assign this Contract or sublet it in part or as a whole without the prior written consent of the other party hereto. The Contractor shall not assign any sum or sums due or becoming due to him hereunder without the prior written consent of the City.

**22. DELIVERIES:**

a) The Contractor shall pay all freight and delivery charges. The Waltham Purchasing Department does not pay for shipping and packaging expenses. Items must be delivered as stipulated in the specifications. All deliveries must be made to the inside of city buildings. Sidewalk deliveries will not be accepted. City personnel are not required to assist in the deliveries and contractors are cautioned to notify their shippers that adequate assistance must be provided at the point of delivery, when necessary.

b) All items of furniture must be delivered inside the building, set up, in place and ready for use. Deliveries are to be made between the hours of 8:30 a.m. and 3:00 p.m., Monday through Friday, except on holidays.

c) All damaged items, or items which do not comply with specifications will not be accepted and title therefore will not vest to the Waltham Purchasing Department until such items are accepted and signed for, in good order, by the receiving department.

d) The contractor must replace, without further cost to the Waltham Purchasing Department, such damaged or non-complying items before payment will be made.

**23. LABELING.**

All packages cartons or other containers must be clearly marked with (a) building and room destination; (b) description of contents of item number from specifications; (c) quantity; (d) City of Waltham Purchase Order Number and (e) Vendor's name and order number.

**24. GUARANTEES.**

Unless otherwise stipulated in the specifications, furniture, equipment and similar durable items shall be guaranteed by the contractor for a period of not less than one year from the date of delivery and acceptance by the receiving department. In addition, the manufacturer's guarantee shall be furnished. Any items provided under this contract which are or become defective during the guarantee period shall be replaced the contractor free of charge with the specific understanding that all replacements shall carry the same guarantee as the original equipment. The contractor shall make such replacement immediately upon receiving notice from the Purchasing Agent.

**25. CHANGE ORDERS.**

Change orders are not effective until, if, as and when signed by the Mayor and no work is to commence until the change orders are fully executed.

**26. BID OPENING INCLEMENT WEATHER**

If, at the time of the originally scheduled bid opening, City Hall is closed to inclement weather or another unforeseeable event, the bid opening will be extended until 2:00 PM on the next normal business day. Bids will be accepted until that date and time.

**27. QUESTIONS.**

During the bid process and until all bids are opened, all questions and communication shall be directed in writing only to the City' Chief procurement Officer at [jpedulla@city.waltham.ma.us](mailto:jpedulla@city.waltham.ma.us). All questions will be answered in writing to all vendors of record, via addenda. Vendors are required not to contact the Waltham Fire Department and/or its staff for information.

# **GENERAL CONDITIONS**

## **GENERAL CONDITIONS**

### **1. INFORMATION**

All information shall come from the Office of the City Purchasing Agent. The Contractor shall inquire at this office for any information needed. Wherever the words "or equal as approved" are used, it is to be understood that the opinion of the City Purchasing Agent shall govern.

### **2. SUITS**

The Contractor shall assume defense of and shall indemnify and hold the City and its agents harmless from all suits and claims against the City and its sub-contractors arising from the use of any invention, patent right labor or employment, or from any act of omission or neglect of the City, its agents, employees or any subcontractor in performing the work, under this contract.

### **3. LAWS AND REGULATIONS**

The Contractor shall conform to all the applicable rules, regulations, laws and ordinances of the City of Waltham, the Commonwealth of Massachusetts, the United States of America and all agencies having jurisdiction over this contract.

### **4. PROTECTION OF PROPERTY**

The Contractor shall take all proper precautions to protect the City's property from damage and unnecessary inconvenience. Any City property damaged by the Contractor in carrying out the provisions of this contract shall be restored to its original condition, by and at the expense of the Contractor.

### **5. PROTECTION OF PERSONS**

The Contractor shall take all proper precautions to protect persons from injury, unnecessary inconvenience, and shall be responsible for his failure to do so. The Contractor agrees to hold the City harmless from any and all liabilities of every nature and description, which may be suffered through bodily injury, including death, to any person, by reason of negligence of the Contractor, his agents or employees, or any subcontractor.

### **6. CONTRACT DURATION.**

This contract is for the period required to deliver the equipment specified and not including guarantee periods.

7. **INSURANCE**

THIS SECTION IS SUPPLEMENTAL TO INSURANCE REQUIREMENT PARAGRAPH IN PAGE 5 OF THE TECHNICAL SPECIFICATION SECTION. Your bid response must include a Certificate of Insurance with the limits specified as a minimum. In addition, the Certificate of Insurance must have the following text contained in the bottom left box of the Certificate: **"The City of Waltham is a named Additional Insured for all Insurance"**. The Certificate of Insurance must be mailed directly to:

Office of the Purchasing Agent  
Purchasing Department  
City of Waltham  
610 Main Street  
Waltham, MA 02452

8. **LABOR AND MATERIALS BOND**

Within ten (10) days from the award date the Contractor agrees to execute and deliver to the City, a Materials or Payment Bond equal to 100% of the contract value. This contract shall not be in force until said bond has been delivered and accepted by the City. Bond shall be issued by a company licensed by the Commonwealth of Massachusetts.

**A LETTER FROM A SURETY COMPANY CERTIFYING THAT THE CONTRACTOR IS QUALIFIED AND CAPABLE OF OBTAINING THE ABOVE BONDS MUST BE INCLUDED WITH HIS/HERS BID.**

9. **PERSONNEL:**

The Contractor shall employ a competent supervisor and all properly licensed personnel necessary to perform the services required in this contract. The City Purchasing Agent shall have the right to require the Contractor to remove and/or replace any of the personnel for nonperformance or for unprofessional behavior. The City Purchasing Agent may require the Contractor to submit a weekly performance record of the areas and of the work performed, on forms approved by the City Purchasing Agent. The Contractor or his supervisor shall be available to inspect such work as required by the City Purchasing Agent.



10. **MATERIALS**

The City or its Agent reserves the right to approve or reject any supplies, material or equipment used by the Contractor. The Contractor agrees to replace any supplies, material or equipment used by the Contractor. The Contractor agrees to replace any rejected supplies, materials or equipment, to the satisfaction of the City or its Agents.

11. **TERMINATION OF CONTRACT**

This contract may be terminated by the City upon deliverance to the Contractor of a five-day written notice of said termination.

12. **CONTRACT OBLIGATIONS**

Contract obligations on behalf of the City are subject to an annual appropriation to cover the contract obligation.

13. **BIDDER EXPERIENCE EVALUATION**

Each bidder shall submit with his bid, all the information relative to their experience and qualifications in performing the work required under this contract and shall have been in business for a minimum of five (5) years, in order for their bid to be considered.

15. **NOT-TO-EXCEED AMOUNT**

The bid amount proposed in your company's response is a "not-to- Exceed" amount unless the City makes changes, in writing, to the scope of work to be performed. The Change Order must be signed and approved by the City's Purchasing Agent, City Auditor, Law Department and the Mayor prior to the commencement of the change order work. No work is to begin until the proper approvals have been obtained. A change order will be priced at the unit price. Failure to comply with this procedure will result in the cancellation of the contract and the non-payment of services provided

16. **FINANCIAL STATEMENTS.**

The City may require, within five (5) days after the bid opening, a complete and detailed Financial Statement prepared by a Certified Public Account, to determine a bidder's financial stability.

**17 BREACH OF CONTRACT/ NON PERFORMANCE**

If the Contractor shall provide services in a manner, which is not to the satisfaction of the City, the City may request that the Contractor refurnish services at no additional cost to the City until approved by the City. If the Contractor shall fail to provide services, which are satisfactory to the City, the City in the alternative may make any reasonable purchase or Contract to purchase services in substitution for those due from the Contractor. The City may deduct the cost of any substitute Contract for nonperformance of services together with incidental and consequential damages from the Contract price and shall withhold such damages from sums due or to become due to the Contractor. If the damages sustained by the City exceed sums due or to become due, the Contractor shall pay the difference to the City upon demand. The Contractor shall not be liable for any damages sustained by the City due to the Contractor's failure to furnish services under the terms of this Contract if such failure is in fact caused by the occurrence of a contingency the nonoccurrence of which was a basic assumption under which this Contract was made, including a state of war, embargoes, expropriation of labor strike or any unanticipated federal, state or municipal governmental regulation of order, provided that the Contractor has notified the City in writing of such cause within seven (7) days after its occurrence.

**18 RIGHT TO AUDIT**

The City of Waltham has the right to review and audit documents related to this contract. This right extends to any subcontractor, supplier or other entity used by the prime contractor to fulfill the obligations under this contract.

**19. CITY ORDINANCE. APPROVAL OF CONTRACTS BY MAYOR, SEC. 3-12 OF THE CITY ORDINANCES.**

All contract made by any department, board or commission where the amount involved is two thousand dollars (\$2,000) or more shall be in writing, and no such contract shall be deemed to have been made or executed until the approval of the Mayor is affixed thereto. Any construction contract shall, and all other contracts may, where the contract exceed five thousand dollars (\$5,000) be required to be accompanied by a bond with sureties satisfactory to the Mayor.

# **Technical Specifications**

***Stainless Steel Cab and Body***

***January 28<sup>th</sup> 2013***

# City of Waltham Fire Department

Bidder Complies

## INTENT OF SPECIFICATIONS

It is the intent of these specifications to cover the furnishing and delivery to the *Waltham Fire Department* of a complete fire apparatus equipped as specified herein; with the intent to obtain the best results and the most acceptable apparatus for emergency service use in the *City of Waltham*. These specifications cover the minimum general requirements as to the type of construction and tests to which the apparatus must conform, together with certain details as to finish, equipment and appliances with which the successful bidder must conform. Minor details of construction and materials, where not otherwise specified, are left to the discretion of the contractor, who shall be solely responsible for the design, engineering and construction of all features.

Y\_\_N\_\_

## COMPLIANCE WITH NFPA 1901

The National Fire Protection Association Standard “NFPA 1901 - Standard for Automotive Fire Apparatus - Current Edition” (hereinafter referred to as NFPA 1901) in effect at the time of the purchase shall be used as a reference and its requirements shall be met by the bidder. Bidder shall construct the apparatus in accordance with federal and state laws effective at the time of purchase. Any federal, state or NFPA amended changes that shall affect the cost of producing said apparatus shall be charged to the purchaser. Mandatory minor apparatus equipment as stated in the applicable paragraphs (5.8, 6.7, 7.7, 8.8, 9.8, 10.5, 11.9 and respective subparagraphs) of the NFPA standard shall not be provided unless specifically stated and listed in purchaser's written specifications.

Any and all references to “NFPA 1901” within this document shall refer to the current edition of NFPA 1901 in effect at the time of the purchase.

Y\_\_N\_\_

## WALTHAM FIRE DEPARTMENT'S NFPA 1901 RESPONSIBILITIES

In accordance with NFPA 1901, current edition, it shall be the responsibility of the *Waltham Fire Department* to specify the following details of the apparatus:

- Its required performance, including where operations at or above elevations of 2000 ft. or on grades greater than 6 percent are required.
- The maximum number of firefighters to ride within the apparatus.
- Specific electrical loads that are to be part of the minimum continuous electrical load defined in 13.3.3 of NFPA 2003.
- Any hose, ground ladders, or equipment to be carried by the apparatus that exceed the minimum requirements of the NFPA 1901 standard in effect at the time of the bid. Equipment weight and location on the apparatus are the responsibility of the purchaser as a prerequisite of defining the loaded vehicle's vertical center of gravity for rollover stability calculations, when required.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## ACQUAINTANCE WITH SPECIFICATIONS

It is the responsibility of the bidder to review all of the bidding requirements. Failure of a bidder to be acquainted with this information shall not relieve the bidder from any obligations of the bid requirements.

Y\_\_N\_\_

## ERRORS AND OMISSIONS

Any error or omission in the specifications shall be reported immediately to the *Waltham Fire Department* for correction, prior to bidding.

Y\_\_N\_\_

## SINGLE SOURCE MANUFACTURER

Bids shall only be considered from single source apparatus manufacturers. A single source manufacturer shall be defined as a manufacturer who designs, engineers and manufactures the entire apparatus in the factory of the bidder. The use of commonly incorporated components such as the diesel engine, the transmission, the pump, lighting fixtures, etc. is acceptable. However, calling the cab/chassis/drivetrain or the outriggers/torque box/aerial device a "component" shall not be acceptable. Single source warranty and service provision from one manufacturer is mandatory to insure parts availability and undivided warranty responsibility. The *Waltham Fire Department* shall be the sole judge in determining if a bidder meets the *Waltham Fire Department's* definition of "single source manufacturer". There shall be no exceptions to these conditions.

Y\_\_N\_\_

## PROTOTYPE OR EARLY PRODUCTION APPARATUS

No prototype, experimental or early production apparatus shall be accepted. The bidder shall demonstrate that they have successfully produced apparatus of the same design in the past, and that those apparatus have a repair history that is acceptable to the *Waltham Fire Department*.

Y\_\_N\_\_

## UNSOLICITED PROPOSALS

All bidders shall submit only one (1) bid, which meets or exceeds the specifications. Bids on alternate, stock or demonstrator units are not being solicited. Any such bids shall be considered non-responsive and shall not be considered. **Total exception to the bid specifications will be cause for immediate rejection.** There shall be no exceptions to these conditions.

Y\_\_N\_\_

## COMPANY OVERVIEW AND HISTORY

Each bidder shall include in their bid proposal a clear overview of their company's manufacturing history, particularly as it relates to the manufacturing of fire apparatus. The bidder shall also include specifics about the factory location in which the apparatus they are bidding will be manufactured.

# City of Waltham Fire Department

## Bidder Complies

Y\_\_N\_\_

### RELIABILITY OF MANUFACTURER

Bids shall only be considered from companies which have an established reputation in the field of fire apparatus construction and have been building custom fire apparatus for a minimum of 30 years.

Bids shall only be considered from manufacturers who are full time fire apparatus manufacturers and who are current members of the Fire Apparatus Manufacturers Association (FAMA).

Each bidder shall furnish satisfactory evidence of their ability to construct the apparatus specified and shall state the location of the factory where the apparatus is to be manufactured. Each bidder shall also show that they are in a position to render prompt service and to furnish replacement parts for said apparatus.

Y\_\_N\_\_

### REFERENCES

The manufacturer shall be satisfactory to the *Waltham Fire Department*, from the standpoint of experience, reliability and demonstrated ability to manufacture fire apparatus comparable in size and type to the fire apparatus specified herein. The manufacturer shall provide a list of references with contact name and phone number to support this.

Y\_\_N\_\_

### MANUFACTURER'S LIABILITY

The bidder, if their bid is accepted, shall defend any and all suits and assume all liability for the use of any patented process, device or article forming a part of the apparatus or any appliance furnished under the contract.

Y\_\_N\_\_

### BID SUBMISSION

Bidders are required to complete and return this bid document. Bidders are required to complete the Bidder Compliance column truthfully. If a bidder believes that they have met the intent of the specification paragraph, but do not meet the exact requirements of the specification, then they shall write "Exception" in the Bidder Compliance column and document that exception accordingly. Failure to adequately document an exception shall be considered a "Not Compliant" response. *BE ADVISED: This document, and all responses and exception taken therein, shall become part of the contract.*

Each bid shall be accompanied by a "Contractor's Proposal" consisting of a detailed description written by the manufacturer of the apparatus and equipment proposed and to which the apparatus furnished under contract shall conform. To facilitate accurate and timely bid evaluation, the Contractor's Proposal shall be ordered in the same sequence as the purchaser's bid specification. In no case shall a bidder submit a copy of the *Waltham Fire Department's* specifications as their Contractor's Proposal. Failure to comply with these requirements shall be cause for bid rejection.

The total price on the bidder's proposal sheet must include all items in the *Waltham Fire*

# City of Waltham Fire Department

## Bidder Complies

*Department's* specifications. Listing any requirement contained in the specifications as an option at additional cost shall automatically be cause for bid rejection.

Y\_\_N\_\_

### EXCEPTION TO SPECIFICATIONS

Any exception or variation in construction, performance, test or items of equipment between this purchaser's specification and the bidder's proposal shall be detailed and submitted as an exception. The following requirements shall be strictly adhered to:

- A. Exceptions will be allowed if they are equal to or superior to that specified and provided they are listed and fully documented and explained on a separate page entitled "EXCEPTIONS TO SPECIFICATIONS". The exception list shall refer to specification page number and paragraph.
- B. All exceptions or deviations must be approved in writing by the *Waltham Fire Department* or the jurisdiction having authority. The *Waltham Fire Department* shall be the sole judge as to whether an exception or variation meets or exceeds the specification and reserves the right to determine which, if any, exceptions or deviations are acceptable.
- C. Proposals taking total exception to specifications shall not be accepted.
- D. The apparatus shall be inspected upon delivery for compliance with the specifications. Deviations shall not be allowed and shall be cause for rejection of apparatus unless they were originally listed in bidder's proposal and approved in writing by the *Waltham Fire Department*.

Y\_\_N\_\_

### BID SELECTION/AWARD CRITERIA

The *Waltham Fire Department* reserves the right to reject any or all proposals, or to accept such proposal that, in the purchaser's sole opinion, is in the best interest of the *Waltham Fire Department*. The *Waltham Fire Department* does not, in any way, obligate itself to accept the lowest bid.

The selection of the successful bidder will be based on a combination of factors which, in the *Waltham Fire Department's* sole opinion, will best serve the *Waltham Fire Department's* interest in obtaining the desired service levels. Factors that will be considered, but shall not be limited to, are:

- Experience
- Capability
- Prices
- Past performance
- References
- Responsiveness to the bid document
- Delivery time
- Quality of item(s) bid
- Warranty Coverages
- Service ability and location

Y\_\_N\_\_

### COMPLETION DATE



# City of Waltham Fire Department

## Bidder Complies

Each bidder shall include in their proposals the number of calendar days for delivery of the completed apparatus, from the receipt of the complete order and signed approval drawing.

Y\_\_N\_\_

### PROPOSAL DRAWINGS

Full size, blueprint type drawings of the apparatus being proposed shall be submitted with the bid package. These drawings shall be drawn to scale on a CAD system to assure an accurate and professional drawing. The drawing shall show five (5) views of the vehicle (front, rear, both sides and top). The drawings shall show the wheelbase and overall dimensions of the apparatus, proposed compartment sizes and features, booster tank position and the location of all emergency warning equipment, work lights, seating and other major items that are to be provided on the apparatus.

Because these drawings are an important tool in the bid evaluation process, the drawings submitted shall be specifically for the apparatus being bid. Drawings that are "similar to" or general in design are not acceptable and shall be considered non-compliant and non-responsive.

Bids submitted without drawing shall also be considered non-compliant and non-responsive.

Y\_\_N\_\_

### INSURANCE REQUIREMENTS

The manufacturer shall maintain insurance coverage including product liability coverage, general liability coverage and workman's compensation insurance coverage. The minimum acceptable liability insurance amount shall be twenty-five (25) million dollars coverage from the primary manufacturer. The bidder shall submit with the bid proposal the name of the insurance company, policy number, coverage amounts and effective dates of the insurance policy. Bids submitted without this information or the proper types and amounts of coverage shall be considered non-responsive and shall be automatically and immediately rejected. No exceptions are allowed on these requirements.

Y\_\_N\_\_

### BID BONDS

Each bidder shall supply with their bid proposal a bid bond in the amount of 10% of the proposed contract amount. Bid Bonds by salesmen or agents of the manufacturer are not acceptable. Bids must remain firm for a period of 60 days. All required insurance coverage shall be underwritten by insurers legally allowed to conduct business in all states of the U.S. and shall have a policy holders rating of "A" or better in the latest evaluation by A. M. Best Co.

Proposals received from bidders who do not build the chassis shall provide a warranty that is issued jointly and severally by, and signed by, both the bidder and manufacturer of the chassis. Bidders who build their own chassis shall provide a warranty issued in their name only.

If the successful bidder does not manufacturer the chassis, the bidder shall supply a separate warranty bond which guarantees all terms and conditions of the warranty and names, as co-principals, both the bidder and the chassis manufacturer. This warranty bond shall be issued for the contract amount and shall remain in force for a term which is consistent with the term of the

# City of Waltham Fire Department

## Bidder Complies

warranty quoted in the bid.

No exception to these requirements shall be allowed if the bid is to be considered compliant.

Y\_\_N\_\_

### APPROVAL DRAWINGS

Following the completion of the pre-construction conference, three (3) sets of engineering, blueprint type drawings, specifically for this apparatus, shall be provided by the manufacturer and shall be approved by the *Waltham Fire Department* before construction begins. Both the *Waltham Fire Department* and the manufacturer's representative shall have a copy of this drawing. It shall become part of the total contract. These drawings shall be drawn to scale on a CAD system to assure an accurate and professional drawing. The drawing shall show five (5) views of the vehicle (front, rear, both sides and top). The drawings shall show the wheelbase and overall dimensions of the apparatus, final compartment sizes and features, booster tank position, the location of all emergency warning equipment, work and scene lights, and all changes, if any, mutually agreed to during the pre-construction conference.

Y\_\_N\_\_

### PRE-CONSTRUCTION CONFERENCE

A pre-construction conference shall be held at the factory of the successful bidder. The conference shall be scheduled during normal business hours, Monday - Friday. All expenses for transportation, meals and lodging for three (3) representatives of the *Waltham Fire Department* shall be included in the bid price. The conference shall be of sufficient duration to complete the business required. A distributor or sales representative shall accompany the *Waltham Fire Department* on the trip. The conference shall be held prior to the commencement of any work being done on the apparatus. Factory sales and engineering personnel shall participate in the conference as needed to ensure that the apparatus fulfills all the requirements of the accepted bid. Authorized representatives from both the *Waltham Fire Department* and manufacturer shall approve and sign any changes made during these meetings prior to the commencement of any work being done on the apparatus.

It is understood and agreed that delays beyond thirty (30) days of contract approval for pre-construction conference changes in specifications shall be cause for delay in delivery.

Y\_\_N\_\_

### DIGITAL PICTURES

Digital pictures shall be taken of the apparatus in place of an "in-process" inspection. On a given day determined by the manufacturer, a quantity of thirty-six (36) pictures shall be taken of the apparatus. Depending upon the type of apparatus, the pictures may include any or all of the following: cab interior and exterior, pump operators stand, body and aerial device.

Y\_\_N\_\_

### FINAL INSPECTION TRIP

One (1) final inspection trip for three (3) representatives of the *Waltham Fire Department* shall be included in the bid. The inspection shall take place at the successful bidder's factory during normal business hours, Monday - Friday. The cost of transportation, meals and lodging shall be included. A distributor or sales representative shall accompany the *Waltham Fire Department*

# City of Waltham Fire Department

## Bidder Complies

on the inspection trip. The trip shall be of sufficient duration to complete the business required. The apparatus to be inspected shall be in finished condition and ready for shipment when the final inspection is conducted.

Y\_\_N\_\_

### UNDERSIDE FINAL INSPECTION

During Final Inspection, the complete vehicle shall be raised, allowing the *Waltham Fire Department Inspection Team* to walk under the apparatus to review the complete underside.

Y\_\_N\_\_

### PRE-DELIVERY ROAD TRIP AND FINAL FACTORY CHECKLIST

Prior to delivery, the completed apparatus shall be thoroughly inspected by the factory. This inspection shall include road testing by the factory of no less than 100 miles. During the factory inspections and road testing, a checklist shall be utilized by factory personnel to document the inspection and road test results. The checklist shall include:

- Documentation of the make, model and serial numbers of all major components such as the engine, transmission, pump, axles, etc.
- Complete, comprehensive operational check of all chassis/drive train components and fluid levels.
- A comprehensive review of the entire exterior and interior of the apparatus for fit and finish, checked against the customer's pre-construction meeting approval specifications, and any ensuing change orders.
- A thorough test of all driving systems under actual highway and city driving conditions, for no less than 100 miles.

Y\_\_N\_\_

### DELIVERY

The fire apparatus shall be delivered over the road and under its own power to insure proper break-in of all driving components while still under warranty. Rail or truck freight shipment of the apparatus is not acceptable.

Y\_\_N\_\_

### FAMILIARIZATION

An experienced and qualified distributor or sales representative shall familiarize *Waltham Fire Department* personnel (as designated by the authority in charge) in the proper operation, care and maintenance of the apparatus delivered.

The representative must be a qualified, trained agent of the local authorized distributor or sales representative, or a direct employee of the manufacturer of the apparatus.

The familiarization period shall consist of four (4) sessions over a period of four (4) days, during the normal work week (Monday - Friday). The schedule of the instruction sessions shall be arranged by mutual agreement of the *Waltham Fire Department* and the delivering authority. The number, length and time of the sessions may vary due to the nature of the apparatus and

**City of Waltham Fire Department**

**Bidder Complies**

availability of attendees and must be approved in advance. The balance of any time remaining in a session may be devoted to minor adjustments or corrections to the apparatus for items which may have developed while in transit from the factory.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## DOCUMENTATION - NFPA REQUIREMENTS

All NFPA required documentation and certifications shall be supplied with the apparatus at the time of delivery.

Y\_\_N\_\_

## GENERAL DESIGN REQUIREMENTS

The design and layout of the apparatus specified herein has been carefully selected to meet the needs of the purchaser. Because the *Waltham Fire Department* is buying a custom fire apparatus, it is expected that all bidders can provide and shall adhere to the details specified herein.

The specified apparatus shall be a custom cab type, designed and manufactured specifically for the fire service in North America. Modification of a conventional or commercial chassis is unacceptable. The apparatus shall meet or exceed the requirements of the NFPA 1901, current edition, in all respects.

The chassis shall be the bidder's "top of the line" deluxe custom model incorporating an all steel cab for strength, durability and safety. **The cab and body sheet metal shall be constructed of stainless steel, no exception.**

The *Waltham Fire Department* requires a cab that is structurally sound and has the structural integrity to provide protection to properly seatbelted firefighters in the event of a rollover, impact with a heavy object or collision.

The specified apparatus shall be designed to be fully operational in the local climate of the *City of Waltham*.

Y\_\_N\_\_

## GROSS VEHICLE WEIGHT

The manufacturer shall be responsible for proper weight distribution upon the chassis and axles. The apparatus when loaded, shall have not less than 25% nor more than 45% of the weight on the front axle and not less than 55% nor more than 75% on the rear axle. The successful bidder shall furnish a certified weight certificate showing weights on front axle, rear axle and total weight for the completed apparatus at time of delivery, with water and fuel tanks full, but without personnel, equipment and hose.

In accordance with NFPA 1901, it shall be the responsibility of the purchaser to notify the manufacturer in the purchaser's specification of any hose, ground ladders, or equipment to be carried by the apparatus that exceeds the minimum requirements of the NFPA 1901 standard in effect at the time of the bid.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## IN-SERVICE WEIGHT CALCULATION

The successful bidder shall furnish a weight calculation showing weights on the front axle, rear axle and total weight for the completed apparatus as specified by the *Waltham Fire Department*, with water and fuel tanks full, equipment and hose. This calculation shall be available for the pre-construction conference.

For the purpose of calculating the in-service weight, firefighter weight shall be calculated at 250 pounds per crew member, including SCBA. If a hose load is not provided, the minimum hose load required by NFPA 1901 shall be used for the calculation. If a loose equipment load is not provided, including its location on the vehicle, the NFPA 1901 load amount based on the cube of the body shall be used.

Y\_\_N\_\_

## VEHICLE PERFORMANCE ANALYSIS

A performance analysis report shall be run on the vehicle, as ordered, using computer software to determine top speed, gradeability, optimum shift points and acceleration on various grades. The report shall be delivered with the completed vehicle, but shall be available within thirty (30) days of the pre-construction conference.

Y\_\_N\_\_

## GENERAL CONSTRUCTION, QUALITY AND WORKMANSHIP

The design and construction of the apparatus shall embody standard automotive heavy vehicle engineering practices. The apparatus shall be designed, engineered and constructed with due consideration for the severe service nature of the fire service. All parts of the apparatus shall be installed in accordance with the OEM specifications and shall be strong enough to withstand the general service under full load for twenty (20) years.

Distribution of load between the front and rear axles shall be engineered so that all specified equipment, including a filled water tank, full complement of personnel and fire hose shall be carried without damage to the apparatus. Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Association and current standard automotive practices.

The workmanship shall be of the highest quality in its respective field. In order to assure the quality that the purchaser demands and expects, all welding personnel that shall be utilized in the fabrication and construction of structural components of the apparatus chassis, body and aerial device shall hold a valid certificate from the AWS - American Welding Society.

The apparatus shall be designed to conform to the intent of ANSI and NFPA 1901 standards. The following design criteria shall be applicable to this specification to the extent specified herein:

- American Society for Testing Materials (ASTM) - A-36, Specification for Structural Steel
- Society of Automotive Engineers, Inc. (SAE) - SAE Handbook
- American Welding Society (AWS) - AWSO14.4-77 Classification and Application of Welded Joints for Machinery and Equipment

# City of Waltham Fire Department

## Bidder Complies

- American Society for Non-Destructive Testing (ASNT)
- ASNT Guidelines; Procedure SNT-TC-1A

The apparatus shall have symmetrical proportions and a pleasing appearance as a result of design detail and fit/finish quality. The apparatus shall be engineered with firefighter safety as the top priority. Ease of operation and ease of maintenance shall also be considered in the apparatus design, but shall not compromise safety. No special tools shall be required to access normal service or maintenance items.

All sensitive components shall be protected against adverse weather conditions. Any exposed metal surface which is not painted or otherwise coated shall have a bright finish. Corrosion protection shall be provided between any dissimilar metals joined in the construction of this apparatus.

Y \_\_\_ N \_\_\_

### STEPPING SURFACE CERTIFICATION

The manufacturer shall provide at time of delivery of the apparatus, a certification that all materials used for exterior surfaces designated as stepping, standing and walking areas, all interior steps and all interior floors meet the slip resistance requirements of the applicable edition and section of NFPA 1901.

Y \_\_\_ N \_\_\_

### PUMP TEST AND CERTIFICATION

The fire pump shall be third party tested at the apparatus manufacturer's facility and shall conform to NFPA requirements and standards. Copies of all tests and the manufacturer's record of pump construction details shall be provided with the delivery documentation.

Y \_\_\_ N \_\_\_

### PERFORMANCE REQUIREMENTS AND TEST - NFPA

A road test shall be conducted with the apparatus loaded per NFPA recommendations (unless otherwise specified) and a continuous run of ten (10) miles or more shall be made during which time the apparatus shall show no loss of power or overheating. The transmission drive shaft or shafts and rear axles shall run quietly and be free from abnormal vibration or noise throughout the operating range of the apparatus.

The apparatus must 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.

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

The apparatus shall be able to maintain a speed of 20 mph on any grade up to and including 6%.

The service brakes shall be capable of stopping the fully loaded vehicle in 35 feet at 20 mph on a level concrete highway.

The apparatus shall be tested and approved in accordance with NFPA standard practices.

**City of Waltham Fire Department**

**Bidder Complies**

Y\_\_N\_\_



# City of Waltham Fire Department

Bidder Complies

## FAILURE TO MEET TEST

In the event that the apparatus fails to meet the road test requirements of these specifications upon delivery, during the first trials, second trials may be made at the option of the bidder within 30 days of the date of the first trials. Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection of the apparatus. Permission from the manufacturer to keep or store the apparatus in any building owned or occupied by the purchaser or its use by the Fire Department during the above specified period shall not constitute acceptance.

Y\_\_N\_\_

## GENERAL

Chassis shall be a new, heavy-duty, custom fire apparatus design built expressly for the fire service. All standard components that have not been specified shall be provided.

Chassis shall be designed, engineered and built by the bidder and be the manufacturer's first line custom chassis.

The chassis shall be suitable for heavy duty service with all components having adequate strength and capacity for the intended load to be sustained and the type of service required.

Y\_\_N\_\_

## WHEELBASE

The wheelbase shall be 165.5 inches.

Y\_\_N\_\_

## SEATING CAPACITY

The safe seating capacity of the cab for properly belted passengers shall be four (4).

Y\_\_N\_\_

## APPROACH - DEPARTURE ANGLES

An angle of approach and an angle of departure of at least 8 degrees shall be maintained at the front and the rear of the vehicle when it is loaded to the estimated in-service weight, as defined by NFPA 1901 2009 edition.

Y\_\_N\_\_

## GROSS VEHICLE WEIGHT RATINGS

Front Vehicle Weight Rating shall be 20,000 lbs.  
Rear Vehicle Weight Rating shall be 24,000 lbs.  
Gross Vehicle Weight Rating shall be 44,000 lbs.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### FRAME

The chassis frame shall be built with two steel channels with a minimum of five (5) crossmembers. Pump shall not be counted as a crossmember. The side rails shall be of heat treated steel measuring 10-1/4" x 3-1/2" x 3/8". Each rail shall have a section modulus of 16.4, a minimum elastic limit of 120,000 PSI and a minimum resisting bending moment of 2,124,000 inch pounds. The crossmembers shall be of heavy duty, fabricated, all-welded design, made out of a minimum of 50,000 psi material. The frame and cross members shall be a bolted assembly utilizing 5/8" flange head grade eight bolts and Spiralock flange nuts. Spiralock nuts shall be used exclusively in the frame assembly for mounting spring hangers, steering gear, engine, transmission, etc. because of their ability to maintain a constant torque tension and prevent vibration loosening. Their design shall provide for an even thread load distribution over the bolt, increased fatigue strength and life, and clamping torque. All holes made must be used and any holes in the frame for options not required on this chassis are not acceptable. The frame rails shall be primed with a polyester powder coating.

Y\_\_N\_\_

### BUMPER

A heavy duty, 10" high, ribbed, highly polished stainless steel bumper shall be mounted to the front of the chassis. The bumper shall be a "ribbed" cross section shape with 2" flanges and rounded corners.

As part of the bumper extension, a second formed channel with 2" flanges shall be provided directly behind the full width of the flat portion of the bumper. The bumper extension support shall be of channel (minimum 9-7/16" x 3" x 3/8") construction, bolted to the chassis frame stub. A 3/16" aluminum treadplate gravel pan (deck) contoured to fit just below the front face of the cab and just below the upper bumper flange shall be provided. The gravel pan shall not be fastened to the top flange of the bumper.

Y\_\_N\_\_

### 24" BUMPER EXTENSION

A bumper extension shall be installed at the front of the cab. The front of the bumper shall be approximately 24" from the front face of the cab. A gravel pan made of 3/16" aluminum treadplate shall be installed between the front bumper and the cab. The bumper extension shall be designed and constructed so that the apparatus can be pulled by the extension.

Y\_\_N\_\_

### LIFTABLE AND TOWABLE BUMPER EXTENSION

The bumper extension shall be designed and constructed so that the apparatus can be lifted and towed by the extension.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## FRONT BUMPER TROUGH - CENTER

A bumper trough shall be installed in the center of the bumper extension. It shall have interior dimensions of 17.75" wide x 27.25" long x 13" deep. It shall be constructed of smooth aluminum and be easily removable from the gravel pan. Drain holes shall be provided.

Aluminum slats shall be provided in the bottom of the front bumper compartment.

Y\_\_N\_\_

## HINGED ALUM COVER WITH PRECONNECT NOTCH

The hose trough shall be provided with a hinged aluminum cover. The cover shall be notched on one end for the preconnect. A gas cylinder type hold open (and closed) device and stainless steel butterfly latch shall be provided for the door.

Y\_\_N\_\_

## RECESSED NOTCH IN FRONT BUMPER FOR RIGHT SIDE SUCTION

A recessed inlet notch shall be cut into the right side of the front bumper and gravel pan. It shall be sufficiently wide to accommodate the long handle female coupling on the soft suction hose. It shall be boxed in on the three vertical sides with aluminum treadplate.

Y\_\_N\_\_

## FRONT TOW EYES

Two (2) painted "cut plate" type tow eyes shall be furnished. They shall be installed under the aluminum treadplate "gravel" pan, behind bumper, and securely attached (bolted) to the bumper extension frame. The eyes shall be fabricated of 1" thick steel plate with a 3" diameter opening.

Y\_\_N\_\_

## REAR TOW LOOPS

Two (2) painted rear tow loops shall be provided, welded to the underside of the rear step subframe. The loops shall be rated at 9000 pounds straight pull.

Y\_\_N\_\_

## STEERING

A Ross model TAS-85 integral heavy duty power steering system shall be provided. The hydraulic pump shall be engine gear driven. The steering gear "box", or fixture that the gear is mounted to, shall be fabricated in the factory of the bidder. It shall be a welded assembly constructed of 3/8" formed steel with a 3/4" face plate. Vertical gussets shall be provided between the face plate and the frame mounting plate to insure against frame flex while the vehicle is stationary.

Y\_\_N\_\_

## AUXILIARY CYLINDER FOR POWER STEERING

**City of Waltham Fire Department**

**Bidder Complies**

An auxiliary power assist cylinder shall be provided in the power steering system.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## CHASSIS ALIGNMENT

The chassis frame rails shall be cross checked for length and square. Front and rear axles shall be laser aligned. The front axle shall be aligned and toe-in and caster set on the front tires at the manufacturer's facility.

The completed apparatus should be rechecked for proper alignment after the chassis has been fully loaded.

Y\_\_N\_\_

## AIR PIPING

The service brake system shall be full air type. The system is to meet or exceed current FMVSS-121 requirements. Other components or accessories shall be as follows:

- Pressure protection valve
- Quick build up system
- Engine mounted, gear driven air compressor
- Bendix Model E-6 dual circuit brake treadle valve
- Two (2) air pressure gauges on cab dash with indicator light and buzzer
- One (1) Bendix DV2 automatic drain valve on wet tank
- Manual drain valves on remaining air reservoirs
- Air reservoirs

The Bendix SR-7 valve, in conjunction with the double check valve, shall enable modulation of the spring brakes in the event of a service brake air system failure to allow the vehicle to be stopped.

Brake piping shall consist of SAE approved, DOT rated "Synflex" reinforced colored nylon tubing. The lines shall be wrapped in a heat protective loom where necessary in the chassis. Braided hoses shall provide flexibility between axle and frame connections. Brake air lines shall be color-coded. Air inlet to air brake compressor shall be from the engine intake manifold, i.e. after transition through the engine air cleaner. A flexible stainless steel braided Teflon hose shall be provided from the compressor to the air dryer.

The parking brake system is to be the spring set type operated by control valve on driver's console. A brake indicator light shall also be provided.

Y\_\_N\_\_

## AIR DRYER

A Meritor WABCO 1200 System Saver air dryer shall be installed in the air brake system. It shall have a minimum capacity of 30 cfm air flow. Dryer shall be equipped with an integral, automatic, 12 volt heated moisture ejector which is thermostatically controlled. System shall include a pressure controlled check valve installed between the wet tank and the secondary air reservoir.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### AUXILIARY AIR INLET

There shall be an auxiliary air inlet installed to maintain the chassis air pressure while the engine is not running. A check valve shall be installed in the line to prevent outflow of air pressure from the "wet" or "supply" tank. Inlet shall be located in the Driver's stepwell.

Y\_\_N\_\_

### FRONT AXLE

A Meritor MFS front axle with a 22,800 pound rating shall be provided. It shall include composite low-friction bushings with diagonal grooves to better distribute lube, camber settings of +1/4 degree for both left and right sides to help improve tire life and a large diameter, heat treated kingpin with a lube retaining seal.

Y\_\_N\_\_

### DISC BRAKES

The front axle shall be provided with Meritor #EX225H air disc brakes with internal automatic adjustment, sealed synchronized twin pistons and robust sealing of slide pins for environmental protection. The #EX225H air disc brakes shall have 17" rotors and a fully sealed lever mechanism with variable mechanical ratio. A visual indicator of brake wear shall also be provided.

Y\_\_N\_\_

### WARRANTY

Meritor Corporation provides a two (2) year parts and labor warranty on the front axle.

Y\_\_N\_\_

### WARRANTY

Meritor Corporation provides a three (3) year parts and labor warranty on the EX225H disc brakes.

Y\_\_N\_\_

### FRONT SEMI-ELLIPTICAL SPRING SUSPENSION, 4" X 52"

The front suspension shall be semi-elliptical 4" x 52" constant rate type springs with a military wrapped eye. The correct material, spring length, width, thickness and number shall be provided to match the leaf spring rating with that of the gross axle weight rating of the vehicle.

Y\_\_N\_\_

### SHOCK ABSORBERS

Gabriel 3-1/2" heavy-duty telescoping shock absorbers shall also be provided on the front axle.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### REAR AXLE

The rear axle shall be a Meritor model RS24-160 with a capacity of 24,000 pounds at the hub. The rear axle shall be provided with Meritor #EX225H air disc brakes with internal automatic adjustment, sealed synchronized twin pistons and robust sealing of slide pins for environmental protection. The #EX225H air disc brakes shall have 17" rotors and a fully sealed lever mechanism with variable mechanical ratio. A visual indicator of brake wear shall also be provided.

All axles shall be purchased complete from and certified by the axle manufacturer for the specific application. Brake chamber brand and size shall be determined by the axle manufacturer.

Y\_\_N\_\_

### WARRANTY

Meritor Corporation provides a three (3) year parts and labor warranty on the EX225H disc brakes.

Y\_\_N\_\_

### WARRANTY

Meritor Corporation provides a two (2) year parts and labor warranty on the rear axle.

Y\_\_N\_\_

### ROAD SPEED

The top road speed of the vehicle shall be 68 MPH at the governed engine RPM.

Y\_\_N\_\_

### REAR SEMI-ELLIPTICAL SPRING SUSPENSION, 3" X 52", SINGLE - 24,000#

The rear suspension shall be semi-elliptical 3" x 52" constant rate type springs with a military wrapped eye. The correct material, spring length, width, thickness and number shall be provided to match the leaf spring rating with that of the gross axle weight rating of the vehicle.

Y\_\_N\_\_

### VEHICLE STABILITY COMPLIANCE – ELECTRONIC CONTROL

In compliance with NFPA 1901-2009 Edition standard 4.13.1, the vehicle, as specified, shall be equipped with a Meritor-WABCO electronic Roll Stability Control system that shall utilize a cab mounted tipping sensor and steering shaft position sensor interacting with the chassis' ABS traction control, auxiliary braking system and the engine ECM to minimize the vehicle's potential for rollover in a turning at speed maneuver.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## AUTOMATIC TRACTION CONTROL WITH DEEP SNOW AND MUD SWITCH

Automatic Traction Control, working in concert with the ABS system, shall be provided which shall reduce wheel slip on acceleration on wet or slippery road conditions. A light shall illuminate on the driver's dash when the drive wheels slip during acceleration.

A deep snow and mud option switch shall be provided in addition to the ATC option. This function increases available traction on extra soft surfaces like snow, mud or gravel by slightly increasing the permissible wheel spin.

Y\_\_N\_\_

## ANTI-LOCK BRAKING SYSTEM (ABS)

The vehicle shall be equipped with a WABCO 4S4M anti-lock braking system (ABS). The ABS shall provide four (4) channel anti-lock-up braking control on the (2) front and (2) rear wheels. The system shall employ a digital electronics system with microprocessor controls divided into two (2) diagonal circuits. In the event of one circuit malfunction the second circuit shall operate unaffected. Each wheel shall be constantly monitored by the system when the vehicle is in motion. When any wheel begins to lock-up during braking, a signal shall be transmitted to the processor from the wheel sensor. The control unit shall instantly reduce the braking force applied to the wheel and immediately re-apply braking force so that the wheel rapidly slows without locking. The system shall control all wheels simultaneously to provide maximum vehicle braking in a relatively straight line.

An ABS warning light shall be installed in the warning light panel of the driver's dash.

The ABS system shall automatically disengage the auxiliary braking system whenever the anti-lock braking mode is active.

Y\_\_N\_\_

## VOGEL LUBRICATION SYSTEM

The auto lube system shall provide automatic grease application up to 28 designated wear points on the unit, with the recommended dosages, per system interval cycle.

The auto lube system shall be powered by an electrically driven Gear Pump. The gear pump shall be top mounted to a reservoir assembly with a capacity of 2.7 liters. The pump shall operate against a back pressure of 38 BAR (550 PSI) nominal, with an output of 160 cc/min. The pump assembly shall be mounted in a suitable location to facilitate care and maintenance of the system by removal of the cover assembly for access to the refill valve connection for replenishment of the grease reservoir.

Distribution of lubricant shall be via Piston Distributors utilizing the "post lubrication principle", dispensing lubricant on the off cycle of the system or pump run time, with metering nipples bearing dosage identification which can be field changeable without disruption of other lubrication point connections.



# City of Waltham Fire Department

## Bidder Complies

The auto lube system shall be operated via an electronic control module with System Monitoring capabilities of the main line and operating cycle with dash mounted visual indication to the vehicle operator. The control module shall have LED's and a system reset button to initiate a lube cycle for diagnostic purposes and/or reset the control module in the event a system fault has occurred. Upon a fault, the system is inoperable until the fault has been corrected and a system reset has been initiated by the operator or serviceman.

Y\_\_N\_\_

### FRONT TIRES

The two (2) front tires shall be Michelin 315/80R22.5, XZA2 Energy, load range "L", highway tread (heavy loads and high speeds for extended periods of time) with a maximum rating of 10,000 pounds at a top speed of 75 mph.

Y\_\_N\_\_

### REAR TIRES

The four (4) rear tires shall be Michelin 11R22.5, XDN2, load range "H", neige tread (all-weather premium drive tire optimized for exceptional traction and mileage) with a maximum rating of 6,205 pounds at a top speed of 75 mph.

Y\_\_N\_\_

### WHEELS

Front axle and rear axle outer wheels shall be Alcoa aluminum. The aluminum wheels shall be coated with Durabrite. Inner rear axle wheels shall be steel. All wheels shall be disc type and hub piloted. Chrome plated nut covers shall be furnished.

Y\_\_N\_\_

### FRONT AXLE "BABY MOON" HUB CAPS

Stainless steel "Baby Moon" type hub caps shall be provided on the front axle.

Y\_\_N\_\_

### REAR AXLE "HIGH HAT" HUB CAPS

Stainless steel "High Hat" type hub caps shall be provided on the rear axle(s).

Y\_\_N\_\_

### TIRE PRESSURE INDICATORS

Accu-Pressure Heavy Duty Safety Caps shall be provided and installed: each wheel shall be equipped with a valve stem inflation pressure sensitive monitor that shall provide a visual color indication of when the tire pressure is below the manufacturers recommended level. The chrome safety cap shall show green when the tire is properly inflated and red once the tire becomes underinflated.

Y\_\_N\_\_

### TIRE BALANCE

# City of Waltham Fire Department

## Bidder Complies

EQUAL Tire Performance Balancing Compound shall be inserted into the front tires to balance and maintain a vibration-free rotation.

Y\_\_N\_\_

### ENGINE

The chassis shall be powered by a 2010 emissions compliant Cummins ISL-450 diesel engine as described below:

Model	ISL9
Number of Cylinders	Six
Bore and Stroke	4.49 x 5.69
Displacement Liter (Cu. In.)	8.9 (543)
Rated BHP	450 @ 2100 RPM
Torque	1250 ft.lb. @ 1400 RPM
Governed RPM	2200
Oil Capacity / Type	7.3 gallons / SAE CJ-4
Fuel Requirement	Ultra low sulfur diesel (15 ppm max.)

Standard equipment on the engine shall include the following:

- Selective Catalytic Reduction (SCR) after treatment
- Cooled Exhaust Gas Recirculation system
- Fan – 29”, 11 blade
- Charge air cooling
- High pressure, common rail fuel system
- Fuel filter with check valve and water separator
- Fuel strainer
- Governor – electronic, interact system
- Injectors – electronically controlled full authority injection
- Lube oil cooler – integral
- Lube oil filter – full flow
- Starting motor – 12 volt Denso double reduction
- Turbocharger – variable geometry type
- Air compressor – Wabco 18.7 CFM

The engine exhaust system shall be a horizontal design constructed from heavy-duty truck components. Flexible couplings shall be utilized to absorb the torque and vibration of the engine. The outlet shall be directed to the forward side of the rear wheels, exiting the right side, with a straight tip. A heat-absorbing sleeve shall be used on the exhaust pipe in the engine compartment area to reduce stored heat, providing protection for the alternator, and also to protect hands when checking or adding oil in the engine compartment.

A SCR chamber shall be installed in “stacked” series with the DPF chamber on the right side of the vehicle, immediately behind the cab and shall ingest urea from a remote storage tank providing a catalytic reaction with diesel exhaust particulates, called Diesel Exhaust Fluid, it is a solution of 2/3 water and 1/3 urea that reacts with NOx to create nitrogen and water. The urea tank shall be equipped with a level sensor, heater and alarm to prevent run-out or freezing.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### WARRANTY

Cummins provides a 5 year or 100,000 mile warranty on the ISL9 engine.

Y \_\_\_ N \_\_\_

### ENGINE AND CHARGED AIR COOLING SYSTEMS

A serpentine core type radiator with continuous louvered copper fin design shall be provided. The radiator shall be fitted with formed steel side frames. The top tank shall have a built-in de-aeration system. A drain shall be located at the lowest point.

The engine charged air heat exchanger shall be located directly in front of the radiator and be bolted to its side rails. It shall be all aluminum-brazed construction. Air cooler shall be the cross flow design with cast aluminum side tanks, horizontal inlet and outlet at top and louvered serpentine design, aluminum external air fins. Cooler tubes shall also be constructed of aluminum and shall have internal fins that eliminate laminar air flow.

The charge air cooler and the radiator shall be produced by the same manufacturer as a single assembly to provide continuity throughout the cooling system. This shall ensure a certified "balanced" package for the chassis engine air and fluid cooling systems.

The radiator charge cooler shall be mounted to the chassis front frame stub and the fabricated mounting brackets for the fan ring shall be attached to the front of the engine in a manner so that it "floats" with the engine and increases the fan's efficiency by minimizing the fan tip clearance while preventing torque contact between fan and ring. This mounting design eliminates engine fan and radiator shroud contact due to engine torque movement and promotes more efficient airflow. The radiator / charge air cooler package shall be held in place at the bottom by two (2) large bolts equipped with anti-stress rubber biscuits. The top of the radiator shall be supported by two (2), 3/4" tubular braces, bolted to the front frame stub. Anti-vibration rubber biscuits shall be installed at the top threaded end of the braces where they attach to the radiator.

Y \_\_\_ N \_\_\_

### ENGINE COOLING CERTIFICATION

"EPQ" (End Product Questionnaire) certification shall be provided by the apparatus manufacturer and shall be done on a completed unit (after pump and complete body installation). Incomplete certifications (chassis only) shall not be acceptable.

Y \_\_\_ N \_\_\_

### FUEL WATER SEPARATOR WITH ALARM

A Fleetguard FS1065 spin-on 10 micron filter with fuel water separator and water sensor alarm shall be provided.

Y \_\_\_ N \_\_\_

### AIR COMPRESSOR

A Wabco 18.7 cfm air compressor shall be furnished. The air compressor shall be gear driven off the engine.

Y \_\_\_ N \_\_\_

# City of Waltham Fire Department

## Bidder Complies

### AIR CLEANER

A Donaldson Power Core dry type engine air cleaner shall be provided. It shall be installed in a location so that the filter element can be easily serviced.

Y \_\_\_ N \_\_\_

### EXHAUST

A SCR chamber shall be installed in "stacked" series with the DPF chamber on the right side of the vehicle, immediately behind the cab and shall ingest urea from a remote storage tank providing a catalytic reaction with diesel exhaust particulates. The exhaust assembly shall be mounted outboard of the frame rail.

The urea mixture, a solution of 2/3 water and 1/3 urea which reacts with NOx to create nitrogen and water, shall be stored in a 10 gallon tank equipped with a level sensor and alarm to prevent run-out. The urea tank shall be accessed by tilting the cab. One (1) tank full of urea solution shall be required for every 500 gallons of diesel fluid.

Y \_\_\_ N \_\_\_

### EXHAUST HEAT SHIELDS

Heat shields shall be provided as needed to prevent damage to body and wiring from excessive exhaust temperatures. The exhaust pipe shall be wrapped in multi-layered insulation blankets, from just aft of the turbo down to inlet side of the DPF. Each blanket shall have a fiberglass inner layer and a silicone impregnated fiberglass cloth outer layer

The cab shall receive 1.25" thick foil back insulation blanket under the crew floor to reduce floor temperatures.

All harnesses and cables, in proximity to exhaust system components, shall be protected with insulation.

Y \_\_\_ N \_\_\_

### FAN CLUTCH

A pneumatically operated, thermostatically controlled, clutch shall be provided for the engine cooling fan. The clutch shall be of a failsafe design, in that it shall fail in the "on" mode and thus prevent overheating in the event of component or air line failure. Manufacturer shall also wire the clutch so that it remains "on" in the pumping mode to prevent water pressure fluctuations.

Y \_\_\_ N \_\_\_

### COOLANT OVERFLOW RESERVOIR

A six (6) quart coolant overflow reservoir shall be provided. It shall be located in the engine compartment.

Y \_\_\_ N \_\_\_

### SILICONE HOSES

All hoses in the cooling system shall be silicone type with stainless steel constant torque Oetiker

**City of Waltham Fire Department**

**Bidder Complies**

clamps.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## TRANSMISSION

An Allison, Model 3000 - EVS, electronically controlled, 5 speed automatic transmission with integral fluid filter shall be provided. A transmission cooler shall be installed in the radiator bottom tank. A warning light and buzzer shall be provided on the cab dash to alert the driver should the transmission overheat.

The transmission shall include the following: an oil life monitor, a filter life monitor, and a transmission health monitor. The oil life monitor determines fluid life remaining by monitoring various operating parameters. The filter life monitor determines when fluid filter(s) need to be replaced. The transmission health monitor determines when clutch system inspection is required. The monitors send a message via a blink code to a special prognostic light on the shift pad. Also on the shift pad shall be installed a digital, double-digit display that identifies the level of transmission oil. The display shall identify the oil level as "Ok", "Lo" or "Hi", also indicating the number of quarts lo or hi.

The transmission shall include the following emergency vehicle specifications:

Maximum gross input power:	450 hp
Maximum gross input torque:	1250 ft.lb.
Input speed range:	2000 to 2800 rpm
Direct gear lock-up:	4 <sup>th</sup> @ 1.00 to 1.00
Overdrive gear and ratio:	5 <sup>th</sup> @ 0.75 to 1.00

Gear ratios shall be as follows:

1 <sup>st</sup>	3.49 to 1
2 <sup>nd</sup>	1.86 to 1
3 <sup>rd</sup>	1.41 to 1
4 <sup>th</sup>	1.00 to 1
5 <sup>th</sup>	0.75 to 1
Rev	-5.03 to 1

The transmission shall automatically shift into neutral whenever the chassis parking brake is applied.

Y\_\_N\_\_

## WARRANTY

Allison provides a 5 year warranty on the EVS transmissions.

Y\_\_N\_\_

## TRANSMISSION FLUID

The Allison 3000-EVS transmission shall be delivered from the factory with Allison "Transynd" synthetic ATF.

# City of Waltham Fire Department

## Bidder Complies

Y\_\_N\_\_

### TOUCH PAD TRANSMISSION SHIFT CONTROL

Touch pad control shift module shall be mounted to the right of the driver on the console and be indirect lighted for after dark operation.

Y\_\_N\_\_

### TRANSMISSION PROGRAMMING

The transmission shall be programmed as a 5-speed with 5th gear (overdrive) selected by mode button only.

Y\_\_N\_\_

### DRIVELINE

Drivelines shall be built with heavy-duty metal tubes and utilize Spicer 1710 series or "Equal" mechanics type universal joints with "half round" end yokes. This quick disconnect strap and bolt design type end joint shall allow the driveline to be easily disassembled and dropped straight down for ease of service and maintenance. They also shall be dynamically balanced by the truck manufacturer before installation in the chassis. A splined slip joint shall be provided in each shaft assembly.

Y\_\_N\_\_

### FUEL SYSTEM

The vehicle shall be furnished with a 65 gallon fuel tank mounted behind the rear axle and just below the frame rails using a stainless steel strap. The tank shall be constructed of stainless steel and equipped with a swash partition and vent. The fuel tank shall meet all FHWA requirements including a fill capacity of 95% of tank volume and all DOT and FMVSS regulations for rollover protection. A 2" diameter fill inlet shall be provided. Fuel cap shall be of brass or bronze construction, non-vented and have lead safety fuses. It shall be chained to inlet tube or to the body sheet metal to prevent loss. Braided hoses shall be provided for the fuel lines. A 1/2" NPT drain plug shall be located at the bottom of the tank. The tank shall be installed using stainless steel straps and hardware, separated from the tank by a rubber insulating strip to prevent against chaffing. On trucks without torque boxes, the fuel tank pickup tube and sending unit shall be accessible without having to remove the tank.

The fuel fill inlet shall be located on the left (drivers) side of the apparatus. It shall be concealed behind a door marked "DIESEL FUEL ONLY". The fuel inlet area, recessed behind the door, shall be completely enclosed to prevent dirt and debris from entering. Provision shall be provided inside the fill recess for drainage of any spilled fuel within the cavity.

Y\_\_N\_\_

The fuel door shall be constructed of stainless steel and shall have a brushed finish. It shall be vertically hinged along the side of the door. A magnet shall hold the door in the closed position. The door shall be kinked along 3 edges with the fourth side being used as a finger grab for opening and closing it. A stainless steel trim ring shall encircle the opening to prevent the fuel nozzle from damaging the surrounding surface when it is opened. The fuel shelf shall be made from a high impact polyethylene material.

# City of Waltham Fire Department

## Bidder Complies

Y\_\_N\_\_

### ENGINE FUEL COOLER

An engine fuel cooler shall be provided on the apparatus. The engine fuel cooler shall cool the returning fuel from the engine using the water from the water pump.

Y\_\_N\_\_

### ALTERNATOR

A minimum 340 amp Niehoff C619-1 alternator with a heavy-duty, externally mounted integral regulator shall be provided.

Y\_\_N\_\_

### AIR RESTRICTION INDICATOR IN INFORMATION DISPLAY CENTER

An electrical engine air restriction indicator shall be provided and installed in the cab information display center.

Y\_\_N\_\_

### TAILPIPE EXTENSION

The tailpipe shall be provided to accommodate a Plymovent exhaust evacuation system. The tailpipe will be mounted perpendicular to the side of the truck and be flush with the body. 12" of clearance between the pipe and the tire will be provided.

It is understood that the 2007 engine exhausts can not be connected to exhaust evacuation systems when the Diesel Oxidation Catalyst and Diesel Particulate Filter on the engine are regenerating.

Y\_\_N\_\_

### TELMA FOCAL RETARDER

A Telma Focal retarder shall be installed in the drive line to provide an auxiliary braking device for the vehicle. Telma application shall be achieved by depressing the brake pedal. There shall also be a four lamp indicator system to indicate the progressive stages of vehicle retardation.

Y\_\_N\_\_

### FAST IDLE SWITCH

A fast idle switch shall activate an engine high idle. The circuit shall be wired through the neutral safety/parking brake interlock to prevent activation when the transmission is in the road mode. Fast idle shall be set at 1000 RPM. A switch located inside the cab convenient to the driver shall be provided for this system.

Y\_\_N\_\_



# City of Waltham Fire Department

Bidder Complies

## LUBRICATION PLATE

A permanent plate shall be installed in the driver's compartment which shall specify the quantity and type of lubrication fluids used in the following chassis or apparatus components: engine, chassis transmission, pump transmission, pump primer and rear axle differential. Engine coolant type and quantity shall also be stated.

Y\_\_N\_\_

## STAINLESS STEEL FULL TILT CAB

The cab shall be designed specifically for the fire service and shall provide roll cage strength and safety. The cab shall be made in the factory of the bidder and must be the bidder's top-of-the-line stainless steel model. The cab shall tilt forward 45 degrees for engine access. In order to provide the strongest, safest cab design possible, no extrusions shall be used in the construction of the cab structure. No plastic or fiberglass shall be used in the construction of the cab sub-frame, floor assembly, front assembly, side assemblies, back wall assemblies or roof assembly.

Y\_\_N\_\_

## CAB DIMENSIONS

The back wall of the cab shall measure 62" from the center of the front axle. The cab shall have an inside width of 91" and outside width of 96". Entrance step wells to the driver's and officer's positions shall be a minimum of 26" wide and the rear crew step wells shall be 26" wide. They shall be "spaced" out at front, rear and side to prevent trapping of dirt and other residue. Entrance steps shall be made of expanded aluminum grating.

Y\_\_N\_\_

## CUSTOM CAB DESIGN AND CONSTRUCTION

### SUB-FRAME

The sub-frame shall be stainless steel reinforced welded safety-cage construction utilizing a 3" x 4" rectangular structural steel tube sub-frame, with 4" stainless steel tubing used for vertical cage members. All joints shall have continuous welds; stitch welding shall not be acceptable. The sub-frame shall be designed as a one-piece structure from the front to the back of the cab. It shall be used to support the cab while tilting, join front pivots to the cab locks, and to join the cab to the chassis. Pocketing of the sub-frame shall not be acceptable. Use of the engine tunnel as part of the main sub-frame shall not be acceptable.

Y\_\_N\_\_

### CAB FLOORS

All floor components shall be welded directly to the sub-frame. The floor shall be constructed of 50,000 psi stainless steel. Cab floors shall be covered with a sound barrier mat with a heavy-duty wear surface.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### FRONT ASSEMBLY

The safety-cage section at the front of the cab shall be constructed of 1.25" stainless steel tubing and shall join the front door posts together with the main sub-frame. There shall be a 2.50" x 1.50" x .25" heavy wall lower cross tube that joins the cab sills together to prevent cab twisting when tilting the cab. The front fire walls shall be set back from the front assembly structure to provide added protection in a frontal crash. The outer cab skin shall not be an integral structural member, although it shall help stiffen the cab front face.

Y\_\_N\_\_

### SIDE WALL ASSEMBLIES AND DOORS

The safety-cage on the sides shall be constructed of 1.25" stainless steel tubing. Both side wall assemblies shall be joined to the sub-frame via thick tubular structures, using heavy fillet welds. This shall strengthen the walls to withstand high roof loading. The side wall outer skins shall be integral with the cab structure as well as additional formed components to help stiffen side wall assemblies. There shall be 1.25" of insulating foam between the exterior and interior side walls. The structure shall be reinforced for cab entry grab handle mountings.

The front door hinge mount (aka "A" pillar) shall be a 2" x 3" tube with a .19" thick wall. The rear door hinge mount (aka "C" pillar) shall be equivalent to a 12 gauge formed channel with .19" thick tapping bar.

Y\_\_N\_\_

### BACK WALL ASSEMBLY

The safety-cage on the back wall shall be constructed of 1.25" stainless steel tubing. It shall join the roof to the floor assembly. Construction of the back wall assembly shall utilize a minimum of 12 gauge stainless steel material and the design shall provide crush protection in the event of a rollover. The back wall structure shall be uniform, regardless of the seating choices. All seat mounts and seatbelt mounts shall use weldnuts to eliminate pullouts and stripped threads. The outer skin shall not be an integral structural member, although it shall stiffen the back wall. One inch of insulating foam shall be located between the exterior and interior back walls.

Y\_\_N\_\_

### ROOF ASSEMBLY

The 1.25" stainless steel tubing used in the construction of the roof section of the safety-cage shall support 2 psi of loading across the whole roof. The fabricated and welded roof sills and front header shall be made of 50,000 psi stainless steel material. The corner caps shall utilize spun metal technology thus retaining the metal's strength while producing a very rigid corner joint. The side roof covering (rolled edges) shall be constructed of stainless steel formed in a quarter round. It shall form a hollow double wall, angle reinforced roof edge with an integral drip rail. The roof top outer wall shall not be an integral structural member, although it shall stiffen the roof. There shall be 1.25" of insulating foam between the exterior roof and interior ceiling.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## CAB TILT

The cab shall tilt a minimum of 45 degrees for normal servicing of the engine and other equipment. The tilt cab locking system shall be a two-point type that locks automatically when the cab is lowered into its nested position. The cab tilt package is custom designed for safety and ease of vehicle maintenance. The hydraulic tilting system consists of two (2) heavy-duty single acting cylinders equipped with velocity fuses at the cylinder base in case of any failure in the operating mode. The power supply is a high efficiency electric over hydraulic system with an integral mechanical override in case of battery failure. All components and parts are designed for installation with a minimum of 3 to 1 safety factor based on current S.A.E. standards.

In addition to the velocity fuses, a secondary safety system shall be provided to hold cab in the fully raised position in the event of a failure in the primary lift mechanism. It shall consist of a metal channel device, which automatically drops over the extended rod of the left side hydraulic lift cylinder thereby preventing its retraction. The safety channel can only be released through an overt action made by the operator such as pulling a lever or cable. Automatic release of the safety system shall not be acceptable.

The cab tilt system shall be remotely controlled utilizing a twelve foot cable with a hand held push button device which is to plug into a receptacle in the bumper area on the right-hand side of the cab. The receptacle shall have a spring-loaded weatherproof cover. A four point isolated mounting system shall be provided. The mounting system shall consist of two (2) front pivot mounts fabricated of steel and two (2) rear cab mounts that are center bonded rubber. Each front pivot mount shall consist of a greaseless pin and a multi-layered, self-lubricating, composite bearing. The outer layer of the bearing shall be high-durometer rubber to isolate road vibrations and shock.

Y\_\_N\_\_

## CAB DOOR CONSTRUCTION - BARRIER CLEARING

The cab doors shall be barrier clearing and fabricated from stainless steel (No exceptions). The cab doors shall be 34.75" wide. The interior and exterior door handles to be flush mounted paddle style with a keyed lock incorporated in the exterior handle and lever control lock incorporated in the interior handle. Six (6) inch wide strap style door checks shall be provided. The door check's straps shall have a tensile strength of 120 lbs/in of width. The door's latch locking mechanism shall make it impossible to lock oneself out of the cab unless locked with the supplied key. Doors shall be hung on stainless steel full length hinges attached to cab and door with .25" bolts. The hinges for each door shall be of one-piece 304-2B stainless steel construction with ¼ stainless steel pins and 0.090 gauge leaves with 2" joints and a 3" width opening. Doors shall meet Federal Motor Vehicle Safety Standard #206. The doors shall be designed so as to allow the windows to roll completely down.

All cab passenger compartment doors shall have at least 96 square inches of reflective material affixed to the inside of each door to alert traffic when the door is open. The reflective material shall be a chevron design that complies with NFPA requirements.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### INNER DOOR PANELS – LINE-X (4)

The cab inside door panels shall be removable and shall be constructed of aluminum covered with Line-X.

Y\_\_N\_\_

### ATP OVERLAY ON BACK OF CAB

An aluminum treadplate overlay shall be provided on the exterior rear wall of the cab. Strips of aluminum treadplate shall cover the full height of the rear wall of the cab, and shall run from the outside edge of each side of the cab in towards the center approximately one-quarter of the width of the cab. If an optional window is provided on the rear wall of the cab, it shall be fully surrounded by the aluminum treadplate.

Y\_\_N\_\_

### CAB GRILLE - VERTICAL BARS AND RAISED BEZEL SURROUND

The cab front opening shall be covered with a custom made polished stainless steel grille that shall be fabricated in the bidder's factory. The grille shall have formed vertical bars spaced apart on 2" centers. The upper polished stainless steel grille shall have a matching lower counterpart to further facilitate engine cooling. The two (2) stainless grilles shall be housed in a custom, raised and chrome plated bezel.

Y\_\_N\_\_

### ENGINE AIR INTAKE GRILLE WITH WATER/EMBER SEPARATOR

The air intake shall be concealed behind the cab grille. The water and ember separator shall set behind the cab grille on the officer's side. This may be cleaned or replaced by tilting the cab.

Y\_\_N\_\_

### FLAT ROOF

A flat roof shall be provided with an interior floor to ceiling height of 57".

Y\_\_N\_\_

### PAINTED CAB ROOF

The exterior surface of the cab roof shall be painted in compliance with the cab paint specifications detailed elsewhere in this specification document.

Y\_\_N\_\_

### INTERMEDIATE CAB STEPS

Four (4) stationary steps shall be provided, one at each cab door. The steps shall be the full width of the cab step well. The steps shall be constructed of aluminum grating.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### CAB SIDE ACCESS DOOR

Two (2) stainless steel cab side access doors shall be provided on the cab, one each side between the front doors and front crew cab windows. Door openings shall be approximately 13.00" wide x 25.00" high. "D" handle type latches shall be provided on the lower rearward part of the door. The doors shall be vertically hinged with a nylon strap type stop.

Y\_\_N\_\_

### CAB SIDE ACCESS DOOR SILL PROTECTORS

Brushed stainless steel sill protectors, approximately .50" wide, shall be provided on the cab side access door sills to protect the painted finish.

Y\_\_N\_\_

### CAB SIDE ACCESS DOOR FRAME SCUFFPLATES

A brushed stainless steel scuffplate shall be installed on the striker side of each cab side access door frame and shall run the full height of the door opening. The scuffplate shall be a single bend configuration that guards the outer door frame post from damage and chips to the paint.

Y\_\_N\_\_

### SIDE ACCESS DOOR SCUFFPLATES

Aluminum treadplate scuffplates shall be provided on the inside of two (2) cab side access door(s) to protect the painted finish.

Y\_\_N\_\_

### FRONT ALUMINUM INNERLINERS

Semi-circular innerliners shall be provided in each front wheel housing. They shall be constructed of aluminum and shall be bolted in place so they may be removed if damaged. Self-tapping sheet metal screws are not acceptable. The outside edge of the innerliner shall be bolted along its entire length. The bottom edge of liner shall not have a formed reinforcement flange to avoid trapping dirt and debris.

Y\_\_N\_\_

### FRONT FENDERETTE

Polished stainless steel fenderettes shall be installed in the front wheel openings. They shall be sufficiently wide to completely cover the outside rear tire and reduce wheel splash along the sides of the cab. They shall be installed with 1/4" hex head bolts (self-tapping sheet metal screws are not acceptable) and have a full width rubber welt placed between the fenderette and body wheel well opening flange. Outside edge of welting shall form a "V" bead between fender and cab side face to prevent moisture from entering. Inside edge shall also have a small raised bead. Outside edge of fenderette, at the wheel opening shall be rolled inward to eliminate a sharp edge and avoid injury when cleaning apparatus.

Y\_\_N\_\_

# *City of Waltham Fire Department*

## Bidder Complies

### FRONT AND REAR MUD FLAPS

Heavy duty mud flaps with manufacturer's "script and flame logo" shall be provided at the rear of each front wheel and at the rear of the rear dual wheels. Front flaps shall be 15" wide and rear flaps shall be 24" wide. Mud flaps shall be made of 0.38" heavy duty rubber material to prevent "sailing".

Y\_\_N\_\_

### CONVEX CROSSOVER MIRRORS

An 8" diameter convex mirror with a polished stainless steel housing shall be provided on the right front of the cab above the windshield.

Y\_\_N\_\_

### CAB MIRRORS WITH AUTOMATIC TEMPERATURE CONTROL

Two (2) Lang Mekra Aero Style West Coast style main and convex mirrors shall be installed, one (1) on each side of the vehicle. The main mirror shall be a four-way heated, remotely controlled adjustable 7" x 16" second surface chromed flat glass. The convex shall be a four-way adjustable 7" x 7" second surface chromed 400 mm radius glass.

The mirrors shall have a built-in temperature sensor that will automatically control the surface temperature of the mirror. An additional on/off switch is installed for mirror heat.

Y\_\_N\_\_

### WINDSHIELD

The windshield shall be of tinted automotive laminated safety plate glass with a curved two-piece design. The windshield shall have approximately 2900 square inches of visual area. Right and left hand windshield glass shall be symmetrical and interchangeable from side to side to minimize spare parts stock and expense. Windshield shall be installed and held in place by an extruded rubber molding with a bright finish, decorative, locking bead. Cab shall be finish painted prior to windshield glass being installed.

Y\_\_N\_\_

### WINDSHIELD WIPERS AND WASHERS

One (1) wet arm operated windshield wiper shall be provided for each plate of windshield glass for accessibility and optimum windshield wiping surface areas. Wipers shall be two speed type with intermittent wiping feature. One (1) control switch shall be provided and located on the self-canceling directional switch for both wiper arms. The switch shall combine the on/off (automatic park position), two speed, intermittent and washer functions in one control. The turning switch shall activate the wipers and control speed, and pushing it shall operate the washers.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### WINDSHIELD WASHER RESERVOIR

A four (4) quart windshield washer fluid reservoir shall be provided. It shall be accessed in the driver's step well with a remote fill. A visual inspection shall be possible without tilting the cab (NO EXCEPTIONS).

Y\_\_N\_\_

### DOOR WINDOWS

A retractable window with automotive type tempered safety glass shall be provided in all four (4) cab doors. All glass shall be tinted. Glass shall slide in stainless steel side channels with cloth/fiber liners. Rubberized fiber seals shall be located at the bottom of the window opening to prevent water and debris from entering the interior of the door when the glass is up (or down). A seal shall be placed on both sides (interior and exterior) of the glass. The front door glass shall be 23.75" high x 25.75" wide upper and 27.50" wide lower. The rear door glass shall be 23.75" high x 30" wide. The door window openings shall be trimmed on the exterior side with a smooth, black, poly vinyl chloride (PVC) molding

Window regulator shall be manufactured by the Muncy Corporation and shall be the enclosed, sliding flexible shaft, gear type for ease of operation and reliability. The shaft shall enter a vinyl plastic protective sheath whenever it is exposed. Window crank effort shall be the same over the entire raising or lowering process. Crank arm shall be installed on a 3/8" square shaft (splined shaft will not be acceptable). Regulator shall not require any periodic maintenance over its lifetime. Sector gear/lever action or sprocket/moving arm type regulator mechanisms will not be acceptable.

Y\_\_N\_\_

### CREW CAB SIDE GLASS

There shall be a side window on each side of the cab between the doors. They shall be tinted and be manufactured of automotive tempered safety glass. Each window shall be 23" high x 17" wide to provide maximum vision. They shall be installed and held in place by an extruded rubber molding with a chrome plated, decorative, locking bead. Cab shall be finish painted prior to window glass being installed.

Y\_\_N\_\_

### CAB TRIM

Decorative molding is to be provided across the front and along both sides of the cab just below the windshield level. The molding shall be the automotive adhesive type made of poly vinyl chloride (PVC). It shall be 5/8" wide with chrome plated outer edges and a 5/16" textured black center strip.

Y\_\_N\_\_

### CAB DOOR HINGES

All piano hinges on the exterior cab doors shall be mill finished.

Y\_\_N\_\_

**City of Waltham Fire Department**

**Bidder Complies**



# City of Waltham Fire Department

Bidder Complies

## CAB HANDRAILS AND GRAB HANDLES

Handrails shall be 1-1/4" diameter extruded aluminum, knurled, with a bright anodized finish.

All handrail stanchions shall be chrome plated. They shall be bolted to the body with 1/4" stainless steel hex head bolts. Stanchions shall have a rubberized gasket placed between them and the body surface they are mounted on. A drain hole shall be provided in each bottom stanchion.

Handrails and handles shall be installed as follows:

Four (4) 24" handrails shall be installed on the side of the cab, one just to the rear of each cab door.

Four (4) 6" chrome grab handles shall be provided, one on the inside of each cab door:

Two (2) 12" rubber covered grab handles shall be provided, one on the driver's side and officer's side front A-pillar, above the door hinge, to assist in entry to the cab.

Two (2) 12" rubber covered grab handles shall be provided, one on each rear crew door hinged-pillar, on the hinged side of the door, to assist in entry to the cab.

Y\_\_N\_\_

## ADDITIONAL GRAB RAIL(S)

Two (2) 8" knurled aluminum grab rail(s) shall be provided and installed on the front cab face below the windshields, one (1) each side.

Y\_\_N\_\_

## CRASH TEST

The cab shall be certified for the following tests:

SAE J2420: Cab Over Engine (COE) Front Strength Evaluation - Dynamic Loading - Heavy Trucks

SAE J2422: Cab Roof Strength Evaluation - Quasi Static Loading - Heavy Trucks

ECE Regulation 29: Protection of Occupants of Cab in Commercial Vehicle

Performance Measure:

1. After undergoing each test, the cab of the vehicle shall exhibit a survival space accommodating a 50th percentile male ATD in the median position without contact between the manikin and non-resilient parts for all seating positions.
2. None of the doors shall open during the tests.
3. The cab attachments may be distorted or fractured, however, the cab shall remain attached to the vehicle frame in at least one attachment location.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## SEAT ALARM SYSTEM

A seat alarm system provided by LifeGuard Technologies shall be installed in the cab, as mandated by NFPA 1901 14.1.3.10. The alarm system shall be activated anytime the parking brake is released or the automatic transmission is not in park. The system shall consist of an audible alarm that can be heard at all positions designated to be occupied while the vehicle is in motion and a visual display to the driver or officer showing the condition at each seating position.

The visual display shall give the following indications:

Affirmative Indication:	Senses occupant and belt is buckled.
Negative Indication:	Senses occupant and belt is unbuckled.
Negative Indication:	Senses no occupant and belt is buckled.
Dark:	Senses no occupant and belt is unbuckled.

Y\_\_N\_\_

## HELMET HOLDER - BODY

The helmets shall be stored in the body in accordance with NFPA 1901 current regulations:

NFPA 14.1.8.4.1 A location for helmet storage shall be provided.

NFPA 14.1.8.4.2 If helmets are to be stored in the driving or crew compartment, the helmets shall be secured in compliance with 14.1.11.2.

Y\_\_N\_\_

## CAUTION LABELS

Caution labels shall be posted in the cab so that they shall be visible from each seat position. The labels shall read: "Do Not Wear Helmets While Seated".

Y\_\_N\_\_

## HEADLINER

The cab shall be provided with a removable headliner for ease of servicing the electrical wiring placed in the cab roof. The headliner shall consist of 3 layers of material. Next to the roof shall be a layer of acoustical insulation made of polyester and polypropylene fibers. The next layer is 1/4" thick Luann. Finally, there is a 1/4" thick layer of foam/perforated acoustical vinyl.

The headliner shall be the multi-piece type (minimum of three (3) sections) so that the entire liner does not have to be removed for localized maintenance.

Y\_\_N\_\_

## BACK LINER

The cab shall be provided with an aluminum treadplate removable back liner. The back liner shall be the multi-piece type (minimum of three (3) sections) so that the entire liner does not have to be removed for localized maintenance.

# City of Waltham Fire Department

## Bidder Complies

Y\_\_N\_\_

### ENGINE ENCLOSURE

The engine enclosure structure shall have a 1-1/4" thick inner lining, on the engine side, comprised of aluminized foil and foam/barrier composite for heat insulation. The tunnel cover shall have 1/2" decoupled foam lower and 1" decoupled foam upper covering, on the cab interior side, for noise insulation. The top forward portion of the hood shall have a full-width riser with a sloped face for the installation of the switch panel. The sloped panels shall be used for vehicle accessory controls. A minimum of 1" shall be provided between the right edge of the accelerator pedal and the side of the engine hood. A removable cover over the engine enclosure and insulation shall be coated with Line-X to act as an insulator for sound and engine temperature, as well as to provide an easy-to-clean work surface.

In order to optimize in-cab vision and seating space for the driver, officer and crew members while properly seated and belted in turn-out gear, the maximum overall dimensions of the engine enclosure shall not exceed:

- 26.25" from floor to top of engine tunnel between driver and officer
- 26.25" from floor to top of engine tunnel at front center dash panel
- 31.25" from floor to top of driver and officer dash panels

Y\_\_N\_\_

### ACCESSORY MOUNTING STRUCTURE

The top portion of the engine enclosure shall have an 1/8" thick aluminum channel frame located between the engine tunnel structure and the cover to support the cover and facilitate mounting of accessories and equipment.

Y\_\_N\_\_

### ENGINE COMPARTMENT ACCESS DOOR

An access door shall be provided at the rear of the engine enclosure for routine engine fluid checks. The access door shall be insulated from engine heat with aluminized foil/foam/barrier composite and sealed to prevent exhaust fumes from entering the crew cab.

Y\_\_N\_\_

### 18" STEERING WHEEL WITH TILT/TELESCOPE

A padded 18" steering wheel with center horn ring shall be provided. The upper steering column shall be of the tilt and telescopic type. A self-canceling directional switch with wiper control and headlight dimmer control shall be mounted on the steering column with an ICC four way flash switch. The self-canceling directional switch shall be easily removable and replaceable without removing the steering wheel or column assembly. The junction of the shaft and the cab floor shall be sealed to prevent air exchange between the cab interior and exterior.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### LINE-X FOR CAB DASH

The cab dash shall be sprayed with Line-X having a high resistance to abrasion and tearing. A vinyl cloth glued or laminated in some manner to a metal backing surface shall not be acceptable.

The Line-X shall absorb impact without surface damage. The Line-X shall be resistant to gasoline, diesel fuel, paints, bleaches, organic solvents and other cleaning agents and chemicals. It shall include sound dampening and vibration elimination properties.

The Line-X shall be solvent free and be environmentally safe to apply with no VOC or CFC hazards. Its surface shall have a non-glare, granular texture and be easily cleaned with common cleansing compounds.

Y\_\_N\_\_

### OFFICER'S DASH

The top of the officer's dash shall include a pocket for a laptop computer. The pocket shall measure 15.25" wide x 8.75" deep x 4.00" high at the rear.

Y\_\_N\_\_

### SUN VISORS

Two (2) 6.625" x 29.50" padded sun visors shall be provided, one on the driver's side and one on the officer's side. Visor shall be supported at both ends to prevent drooping.

Y\_\_N\_\_

### VEHICLE DIMENSION SIGN

A sign shall be provided in the front cab area indicating the height of the completed apparatus in feet and inches, length of the completed apparatus in feet and inches, and the gross vehicle weight rating (GVWR) in tons.

Y\_\_N\_\_

### CABLE RACEWAY

A cable raceway, 1.75" x 5.75", shall be installed underneath the officer's floor. It shall run between the officer's kick plate and the seat riser.

Y\_\_N\_\_

### DRIVER'S SEAT

The driver's seat shall be an H.O. Bostrom Sierra Air-100 reclining high back seat with air suspension. A DOT approved 3-pt. shoulder harness shall be furnished that is red in color. The seatbelts shall meet NFPA 1901 length requirements.

The driver's seat shall be held at NFPA regulated height by a C Channel Bracket.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### OFFICER'S SEAT

An H.O. Bostrom Tanker 450 SCBA seat shall be provided for the officer. This seat shall have 5" horizontal adjustment. A DOT approved 3-pt. shoulder harness shall be furnished that is red in color. The seatbelts shall meet NFPA 1901 length requirements.

The officer's seat shall be held at NFPA regulated height by a 3CR12 stainless steel frame which creates an enclosed compartment. The compartment measures 15.50" wide x 10.60" high x 17.30" deep, front to back. The compartment shall have a front opening door, 14.0"W x 8.25"H.

One (1) NFPA compliant IMMI SmartDock Gen 2 SCBA bracket shall be installed in the seat(s). The bracket shall utilize a locking mechanism that engages during deceleration. The bracket shall hold the cylinder in place while in transit and release using no straps, levers, buttons or switches.

Y\_\_N\_\_

### REAR SEATING

The rear crew cab section shall contain two (2) outboard rear facing H. O. Bostrom Tanker 450 SCBA passenger seats. The seats shall be installed one (1) each side at the rear of the engine enclosure. The seating area shall allow maximum room for fire fighters in full turn out gear. DOT approved 3-pt. shoulder harnesses shall be furnished that are red in color. The seatbelts shall meet NFPA 1901 length requirements.

Two (2) NFPA compliant IMMI SmartDock Gen 2 SCBA bracket shall be installed in the seat(s). The bracket shall utilize a locking mechanism that engages during deceleration. The bracket shall hold the cylinder in place while in transit and release using no straps, levers, buttons or switches.

Y\_\_N\_\_

### REAR SEATING

The rear crew cab section shall contain two (2) outboard forward facing seats. The forward facing seats shall be a fold-up jump seat installed on the rear wall of the cab. The seat cushion shall be made by H. O. Bostrom. The seating area shall allow maximum room for fire fighters in full turn out gear. A DOT approved 3-pt. shoulder harness shall be furnished that is red in color. The seatbelts shall meet NFPA 1901 length requirements.

Y\_\_N\_\_

### SEAT BELTS

The seats shall have a standard seat belt attached that meets FMVSS and NFPA 1901 current edition requirements.

All other seats shall receive a 3 point fixed D Loop style seat belt.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### SEAT UPHOLSTERY

Six (6) cab seats shall be upholstered in black H.O. Bostrom "Durawear" waterproof cloth fabric.

Y\_\_N\_\_

### ALUMINUM PEG BOARD

3/16" Aluminum peg board shall be installed floor to ceiling on the rear cab wall at the center and left side seating locations. The peg board shall be mounted on low profile unistrut. The unistrut shall be mounted to the cab structure.

Y\_\_N\_\_

### INTERIOR DÉCOR

The following components shall be black in color:

Headliner

Head bumper over crew doors

Backliner, if using padded acoustical material

Vinyl visors, if selecting vinyl

The following components shall always be black in color:

Floor matting and floor mat edging

Headliner trim

Backliner trim

Crew heater, complete assembly

Electrical panels

Officer's dash access panel

Plastic snap plugs for wire access holes

Door seals

Seat risers

Underseat compartments

Seat belt retractor cover.

Rubber covered grab handles

Map Desk, if present

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### INTERIOR LINE-X DECOR

The following items, with Line-X finish, shall be dark gray in color:  
Engine cover and center dash, including engine access door and electrical access door  
Driver and officer dashes  
Overhead dash  
Upper interior door panels (Void if selecting brushed S/S)  
Lower door panels (Void if selecting brushed S/S or ATP)  
All interior compartment exteriors, if selecting (large storage compartment and side access compartments)

Y\_\_N\_\_

### CAPACITY SIGN

A sign visible to the driver, that states the number of personnel the vehicle is designed to carry, shall be provided.

Y\_\_N\_\_

### HEATER/DEFROSTER-FORWARD CAB

A front cab heater/defroster unit shall be provided. The unit shall have a heating capacity of 30,000 BTU and combined 520 CFM variable speed blower assembly. The unit shall be located on top of the engine tunnel and shall be centered on the windshield. Defroster outlets shall be located at the bottom of the windshield and shall direct air flow from the unit up on to the windshields. Vents shall be located in the drivers and officers dashes and kick plates.

Y\_\_N\_\_

### MANUAL COOLANT SHUTOFF VALVE - INLET

The forward cab heater inlet flow shall be interrupted by one (1) manual engine coolant shutoff valve mounted behind the engine for auxiliary engine coolant flow control. The valve shall be 1/4 turn style with label for ease of identification.

Y\_\_N\_\_

### REAR CREW CAB HEATERS

Two (2) rear crew cab heaters with a combined rating of 64,000 BTU output and 850 CFM air flow shall be provided. The rear cab heaters shall be mounted under the rear facing outboard seats each side. The units shall have a variable speed blower.

Y\_\_N\_\_

### MANUAL SHUTOFF VALVE FOR CREW CAB HVAC COOLANT INLET

The crew cab heater inlet flow shall be interrupted by one (1) manual engine coolant shutoff valve mounted behind the engine for auxiliary engine coolant flow control. The valve shall be 1/4 turn style with label for ease of identification.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### AIR CONDITIONER

The cab shall be equipped with an air conditioning system that shall include two (2) ceiling mounted evaporators. The air conditioning system shall have a combined cooling capacity of 79,000 BTU and variable speed blower assemblies for a combined 1100 CFM. The main controls for the unit shall be located in the dash. The evaporators shall have air diffusers to allow for multi-directional airflow. Each diffuser shall be adjustable up and down and side-to-side for individual preference. Each evaporator shall have it's own sump style drain system for removal of condensation. The sump shall be integrated into the ABS evaporator cover.

The evaporators shall be compliant with all EPA regulations and use R-134A Refrigerant. All hoses used in the air conditioning system shall be "barrier" type construction for containment of the refrigerant. The condenser shall be a stacked type, low profile, dual fan compact design with dryer and pressure switch included. The condenser shall be located on the cab roof. It shall be protected from damage with a cover, except for the fan opening at the top and openings for the hoses.

The air conditioning system shall exceed the industry norm by cooling the cab from the ambient temperature of 100 degrees Fahrenheit at 50% relative humidity to an average cab temperature of 75 degrees Fahrenheit in 30 minutes.

Y\_\_N\_\_

### HVAC CONTROLS - FORWARD CAB

HVAC controls shall feature rotary switches, function labeling, backlighting, and have colored indicators and shall be located in the center dash area between the driver and officer.

Y\_\_N\_\_

### TWO-WAY RADIO ANTENNA MOUNT(S)

Two (2) universal antenna mount(s), model MATM, with 17 feet of coax cable and weatherproof cap shall be provided for the two-way radio equipment. The mount(s) shall be installed on the cab roof behind the main roof lightbar, one (1) each side. The cable shall be routed to the lower dash, or as requested by the customer, with any excess cable secured in an accessible location. All installation locations and cable routing shall be confirmed with the customer during the pre-construction process.

Y\_\_N\_\_

### POWER STUDS (OVERHEAD SWITCH PANEL)

Four (4) studs shall be provided in the overhead switch panel to provide a 12 volt feed. The studs shall consist of a 12 volt direct stud, switched battery stud, switched ignition stud and grounding stud.

Y\_\_N\_\_

### POWER STUDS (CAB DASH)

Four (4) studs shall be provided in the cab dash area to provide a 12 volt feed. The studs shall consist of a 12 volt direct stud, switched battery stud, switched ignition stud and grounding stud.



# City of Waltham Fire Department

## Bidder Complies

Y\_\_N\_\_

### BUSS BAR (UNDER OFFICER'S SEAT)

A four (4) stud buss bar shall be provided under the officer's seat to provide a 12 volt feed. The studs shall consist of a 12 volt direct stud, switched battery stud, switched ignition stud and grounding stud.

Y\_\_N\_\_

### GENERAL 12-VOLT ELECTRICAL WIRING REQUIREMENTS FOR MARAUDER III

#### 12-VOLT ELECTRICAL SYSTEM

The apparatus shall be equipped with a heavy-duty 12-volt electrical system. All 12-volt electrical equipment installed by the apparatus manufacturer shall conform to modern automotive practices. All electrical wiring and components installed in the apparatus shall be suitable for use in severe duty emergency vehicle applications.

Y\_\_N\_\_

#### GENERAL WIRING AND WIRE HARNESS CONSTRUCTION

Unless otherwise specified by the component supplier, all insulated wire and cable shall conform to SAE J1127 *Low Voltage Battery Cable* type SGX or STX, or SAE J1128 *Low Voltage Primary Cable* type SXL, GXL, or TXL.

Circuit feeder wires shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for which the circuit is protected.

Conductor materials and stranding, other than copper, shall be permitted if all applicable requirements for physical, electrical, and environmental conditions are met as dictated by the end application.

The overall covering of conductors shall be moisture-resistant loom or braid that has a minimum continuous rating of 194°F (90°C) except where good engineering practice dictates special consideration for loom installations exposed to higher temperatures.

The overall covering of jacketed cables shall be moisture resistant and have a minimum continuous temperature rating of 194°F (90°C) except where good engineering practice dictates special consideration for cable installations exposed to higher temperatures.

Y\_\_N\_\_

#### CIRCUIT IDENTIFICATION

All wiring shall be uniquely identified by a circuit number and color coding. The identification shall be referenced on a wiring diagram. Wires less than 8 AWG shall be permanently identified at least every 2.0 inches (50.8 mm) by a circuit and function code. Cables equal to or larger than 8 AWG and wires included in jacketed cables shall be permanently identified by circuit number at all terminations.

Y\_\_N\_\_

# *City of Waltham Fire Department*

## Bidder Complies

### WIRING CONNECTIONS

All wiring connections and terminations shall use a method that provides a positive mechanical and electrical connection. The wiring connections and terminations shall be installed in accordance with the device manufacturers instructions. Secondary locks shall be utilized on all connectors that are secondary lock capable.

Exterior exposed wire connectors shall be environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids. Seal plugs shall be installed in all unused sealed connector cavities.

All ungrounded electrical terminals shall have covers or be in enclosures to protect against corrosion, excessive heat, excessive vibration, physical damage, liquid contaminants, dust, and other environmental factors.

Wiring splices shall be crimp-type, molded, or sonic weld type. Adhesive lined heat shrink tubing shall be used to seal and insulate splice joints.

Y\_\_N\_\_

### WIRE AND CABLE ROUTING

Wiring routed through holes in sheet metal or castings shall have edges protected by an appropriately sized grommet.

Wiring shall be routed to avoid metal edges, screws, trim fasteners and abrasive surfaces. When such routings are not possible, protective devices (shields, caps, etc.) shall be used to protect the wires. When wires must cross a metal edge the edge shall be covered with a protective shield.

Wiring shall be routed to provide at least 3 inches (76.2 mm) clearance to moving parts, unless positively fastened or protected by a conduit.

Wire routings should avoid areas where temperatures exceed 180° F (82.2° C) and a minimum clearance of 6 inches (152.4 mm) shall be maintained from exhaust system components. Where compliance with this requirement is not possible, high temperature insulation and heat shields shall be utilized.

When wiring is routed between two members where relative motion can occur the wiring shall be secured to each member, with enough wire slack to allow flexing without damage to the wires.

Wiring to all circuit components (switches, relays, etc.) in exposed locations shall provide a drip loop to prevent moisture from being conducted into the device via the wire connection.

Routing wires into areas exposed to wheel wash shall be avoided if possible. When such routings cannot be avoided, adequate clipping or protective shields shall protect the wires from stone and ice damage.

Wiring shall be secured in its intended location with appropriately sized bolt-on clips and nylon wire ties.

# City of Waltham Fire Department

## Bidder Complies

Electrical components designed to be removed for maintenance shall include a sufficient length of wire to allow the component to be pulled away from the mounting area for inspection and service work.

Bulkhead type connectors or sealed fittings shall be used to prevent the entry of liquid contaminants into weather tight enclosures.

Y\_\_N\_\_

### SPARE WIRES

Wiring harnesses from/to major power and signal distribution areas of the apparatus shall include spare wires for future expansion of the system.

Y\_\_N\_\_

### ELECTRICAL SYSTEM COMPONENTS

Serviceable components shall be readily accessible. Switches, relays, terminals and connectors shall have a dc rating of 125% of the maximum current for which the circuit is protected.

A distributed power and signal system shall be utilized on the apparatus to minimize power supply voltage drops. Power and signal distribution areas in the cab shall be concentrated in five (5) areas.

A lower cab power and signal distribution center shall be located in the center forward portion of the cab "dash". It shall be hinged and opened by unlocking two (2) top mounted, double hinged, lift and pull latches. This area shall contain relays and circuit breakers installed in a logical and serviceable fashion.

An additional lower cab power and signal distribution center shall be located below the officer's dash behind the kickplate.

An upper power and signal distribution area shall be located in the forward portion of the cab ceiling, above the engine tunnel. Components in this area shall be permanently labeled and easily accessible by opening a hinged cover.

A power and signal distribution area shall be located in the pump module, if applicable. Components in this area shall be permanently labeled and easily accessible.

A power and signal distribution area shall be located on the front of the forward body compartments. Components in these areas shall be permanently labeled and easily accessible.

All electrical components or devices installed in an exposed area on the outside of the cab or body shall be mounted in such a manner, or protected by a gasket, caulking or other means, so that moisture shall not accumulate in it.

Y\_\_N\_\_

### CORROSION PROTECTION

Externally exposed, non-plug type, electrical connections shall be given a hand applied or sprayed application of an industrial standard insulation coating with a minimum rating of 2100 volts per mil thickness. Insulation shall protect the connection from water induced electrical corrosion and accidental short circuiting. Should the connection be loosened or removed during the manufacturing process another coating shall be applied after it has been refastened or

**City of Waltham Fire Department**

**Bidder Complies**

replaced.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## MAIN BATTERY AND STARTER CIRCUITS

### BATTERY POWER BUSS

All positive cables from the batteries shall be connected directly to a battery positive buss bar located as close to the batteries as practical. The alternator shall be wired directly to the battery positive buss bar through the ammeter shunt, if one is provided.

Y\_\_N\_\_

### ENGINE STARTER AND INTERLOCK CIRCUITS

The starter solenoid(s) shall be connected directly to the battery positive buss bar. An interlock shall be provided to prevent the operator from engaging the starter when the engine is running.

Y\_\_N\_\_

### BATTERY GROUND BUSS AND SINGLE POINT GROUND SYSTEM

All negative (ground) cables from the batteries shall be connected directly to a battery negative buss bar located as close to the batteries as practical. A 2/0 AWG cable shall connect the battery negative buss bar to the chassis frame. Appropriately sized ground feeder cables shall be utilized to provide a low impedance ground path to the negative buss bar for all electrical devices on the apparatus.

Y\_\_N\_\_

### APPARATUS GROUND BONDING

A 2/0 AWG cable shall connect the battery negative buss bar to the chassis frame. The cab, pump enclosure (if furnished), and body structure shall be electrically bonded to the vehicle frame by with two (2) 2 AWG braided copper ground strap.

Y\_\_N\_\_

### EMI/RFI PROTECTION

The apparatus electrical system and related devices shall have the ability to function in the severe electromagnetic environment typical of fire ground operations.

Y\_\_N\_\_

### EMI/RFI EMISSIONS

State-of-the-art electrical system design and components shall be utilized to ensure the suppression of radiated and conducted EMI (electromagnetic interference) and RFI (radio frequency interference) emissions that may cause communication and navigation radio-reception interference. The electrical system and related components shall comply with the applicable sections of J551/1 *Performance Levels and Methods of Measurement of Electromagnetic Compatibility of Vehicles, Boats (up to 15 m), and Machines (16.6 Hz to 18 GHz)*

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## EMI/RFI SUSCEPTIBILITY

The apparatus electrical system shall incorporate immune circuit designs, filtering, shielding and twisted-pair wiring to control EMI/RFI susceptibility. Particular attention shall be given to harness and cable routing to minimize the potential for conducted and radiated signal susceptibility.

Electrical / electronic equipment on the apparatus shall not be susceptible to radiated and conducted EMI/RFI emissions from on-board radio transmitter(s) and shall comply with the requirements of SAE J551-12 *Vehicle Electromagnetic Immunity--On-Board Transmitter Simulation*.

Y\_\_N\_\_

## ELECTRICAL SYSTEM PERFORMANCE TESTING

An operational test shall be conducted to ensure that all installed electrical equipment is properly connected and is in working order. The apparatus alternator shall be tested with the total continuous electrical load applied and engine running up to the engine manufacturer's governed speed for a minimum of 2 hours. Additionally, all warning lights shall be run continuously during the three (3) hour NFPA pump certification test (or at another time for not less than three (3) hours). Activation of the load management system (if furnished) shall be permitted during this test. An alarm sounded by excessive battery discharge, as detected by the low voltage warning system, or a system voltage of less than 11.8 V dc at the battery for more than 120 seconds, shall be considered a test failure.

Y\_\_N\_\_

## CAB DASH AND INSTRUMENTS

A non-glare instrument panel, custom designed to accommodate the appropriate functions, shall be provided. Illumination shall be provided for controls, switches, instruction plates, gauges, and instruments necessary for the operation of the apparatus. The cab dash shall be forward slanted, and constructed of aluminum.

A system shall be provided that interacts with the engine electronics and eliminates redundant senders and switches. The electronic engine gauges shall receive information on the SAE J1939 data link to improve reliability and gauge accuracy. Connectors shall be utilized for ease of service. The dial face shall be black with white lettering. The primary letters shall be in Imperial with the secondary, smaller letters in metric. The dial shall have international non-language symbols for the gauge function (except speedometer). Gauges shall have illumination with a monochrome LCD display located on the speedometer gauge. They shall also have a 250 degree dial sweep for greater definition of scale. SAE J1939 Faults and Warnings shall be displayed on the LED display.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## DRIVER'S INSTRUMENTATION

The following gauges shall be provided:

### Main Gauges

- 3" Speedometer: 0-85 mph with built-in LCD display
- Speedometer Mode Switch: Allows operator to select menu items in the display screen
- Speedometer Up Switch: Allows operator to scroll up through display menu items
- Speedometer Down Switch: Allows operator to scroll down through display menu items
- 3" Tachometer: 0-4000 rpm

### Satellite Gauges

- 2" Fuel Level: Empty – full with low level warning indicator
- 2" Voltmeter: 10-16 VDC
- 2" Coolant Temperature: 100-240 Degrees Fahrenheit
- 2: Engine Oil Pressure: 0-80 psi
- 2" Transmission Oil Temp: 100-320 Degrees Fahrenheit
- 2" Front Air Pressure: 0-150 psi
- 2" Rear Air Pressure: 0-150 psi
- 2" DEF Level: Empty – full with low level warning indicator

Y\_\_N\_\_

## DRIVER'S INDICATOR LIGHT MODULE

The following indicators shall be mounted in a removable modular panel in front of the steering column. The indicators shall be identified with universal ISO 2575 symbols where applicable and visible to the driver while seated. All applicable indicators in the modular panel shall automatically illuminate for 1 second upon activation of the ignition switch to verify operation:

- Battery Switch "On" green indicator light
- Ignition Switch "On" indicator
- Check Transmission amber indicator light
- Check Engine amber indicator light
- Stop Engine (Engine Warning) red indicator light
- High Exhaust Temperature (HEST) amber indicator light (if applicable)
- Diesel Particulate Filter Regeneration (DPF) amber indicator light (if applicable)
- Wait to Start amber indicator light (if applicable)
- Malfunction Indicator Light (MIL) amber indicator light (if applicable)
- ABS warning amber indicator light
- ATC/ESC activated amber indicator light
- Spring (Parking) Brake "On" red indicator light
- High Beam "On" blue indicator light
- Low air pressure red indicator light
- Left Turn signal green indicator light
- Right Turn signal green indicator light
- General Warning red indicator light (if applicable)

# City of Waltham Fire Department

**Bidder Complies**

DEF Level Indicator Light

Y\_\_N\_\_

## **AUDIBLE CAB ALARMS**

Audible alarms shall be provided in the cab to alert the operator of conditions that require attention. The alarm device(s) shall be audible in the driving compartment and feature an adjustable volume control.

An intermittent audible tone shall sound when the following conditions are present and the parking brake is disengaged:

Active Hazard Warning –  
(Do Not Move Apparatus; Door Open, Tower Raised, Ladder Rack Down, etc.)  
Seat Belt Warning

A steady audible tone shall sound when the following conditions are present:

Check Engine  
Check Transmission  
Stop Engine (includes High Engine Temperature and Low Engine Oil Pressure)  
Low Voltage  
Engine Air Filter Restriction  
Jackknife Warning (if applicable)  
Tiller Cab Operator Not in Position (if applicable)

Y\_\_N\_\_

## **DRIVER'S AND OFFICER'S CONTROLS**

The following rocker style control switches shall be identified and accessible to the driver while seated. Switches shall include integral indicator lights (where applicable) to advise that the switch has been energized and identification labels shall be illuminated for night driving.

Ignition switch with green indicator light  
Engine Start switch  
Headlight / Tail-Marker-ID light switch  
Instrument Panel Dimmer control rheostat

The following controls shall be stalk mounted on the steering column and identified and visible to the driver while seated:

Turn Signal Control and 4-Way Hazard Warning switch  
High-beam headlight switch  
Windshield wiper control switch  
Windshield washer control switch

The following controls shall be identified and accessible to the driver while seated:

Parking (Spring) Brake Control  
Other controls (as defined elsewhere in this specification)



# City of Waltham Fire Department

## Bidder Complics

The following controls shall be identified and accessible to both the driver and officer while seated. Controls shall be identified and illuminated for night driving.

HVAC control panel  
High Idle control switch  
Other controls (as defined elsewhere in this specification)

Y\_\_N\_\_

### EMERGENCY & WORK LIGHT SWITCH PANEL - DRIVER'S SIDE

All emergency light and work area lighting control switches shall be mounted in a removable panel located in the overhead position on the driver's side of the cab. The light switches shall be "rocker" type with an internal indicator light (where applicable) to show when the switch is energized. All switches shall be properly identified by an illuminated label for night driving.

A master warning light switch and individual switches shall be provided to allow pre-selection of emergency lighting.

Y\_\_N\_\_

### DOOR AJAR/HAZARD INDICATOR LIGHT (DO NOT MOVE APPARATUS)

A Whelen "T0" series 2" round red flashing LED light with chrome flange shall illuminate automatically whenever the apparatus parking brake is not fully engaged and any of the following conditions exist:

Any passenger or equipment compartment door is open.  
Any ladder or equipment rack is not in the stowed position.  
Stabilizer system is not in its stowed position.  
Powered light tower is extended.  
Any other device permanently attached to the apparatus is open, extended, or deployed in a manner that is likely to cause damage to the apparatus if the apparatus is moved.

The hazard warning light shall be identified with a label that reads: "Do Not Move Apparatus When Light Is On." The light shall be located on the ceiling between the driver and the officer.

Y\_\_N\_\_

### DIGITAL CLOCK

A 12/24 hour real-time digital clock shall be identified and visible to both the driver and officer while seated.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## ELECTRICAL WIRING REQUIREMENTS - INTELEX PLUS

The apparatus shall be equipped with an INTELEX PLUS management system for control of the electrical system devices, where applicable.

Y\_\_N\_\_

## CIRCUIT PROTECTION

Circuit protection devices shall be utilized to protect each electrical circuit. All circuit protection devices shall be sized according to 125% of the anticipated load to prevent wire and component damage when subjected to extreme current overload.

Y\_\_N\_\_

## SOLID STATE CIRCUIT PROTECTION

Intelex power distribution modules shall utilize solid state output channels and feature fully protected high-side drivers (+12V) to protect wiring. High-side drivers shall provide overload protection, current limitation, transient protection, and replicate the function of an automatic reset circuit breaker. If output current exceeds the rated amperage, the output shall automatically turn off. After 30 seconds, the module shall attempt to re-energize the load. If the output is still overloaded, it shall remain off until the power is cycled or the output is manually reset through the Information Center. In the event of a communications loss with the vehicle's control module, all outputs not controlling a moving device, such as a ladder rack, shall remain in their previous state until communication is restored or the power is cycled.

Y\_\_N\_\_

## NON-SOLID STATE CIRCUIT PROTECTION

Circuit breakers shall be Type-I automatic reset (continuously resetting) and conform to SAE J553 or J258 unless operational requirements and/or safety concerns dictate Type-III manual reset type conforming to SAE J1625. Automotive-type fuses conforming to SAE J554, J1284, J1888 or J2077 shall be utilized when required to protect electronic equipment.

Y\_\_N\_\_

## POWER CONTROL RELAYS AND SOLENOIDS

Power control relays and solenoids shall have a direct current (dc) rating of 125 percent of the anticipated current load.

Y\_\_N\_\_

## INFORMATION CENTER II

An IQAN-MDL unit with 6.5" transfective high resolution TFT color display capable of displaying graphical images as well as text messages shall be located on the cab dash. The main display page shall include a speedometer, tachometer, coolant temperature, and voltmeter. Additional information pages shall be provided for the seat belt status, chassis drive train, pump (if provided), aerial device (if provided), and generator (if provided). Information pages shall be selected for viewing by the operator by selecting a corresponding button on the display module.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complics

## APPARATUS STATUS INDICATORS AND AUDIBLE ALARMS

If a monitored "Caution" or "Warning" condition is active, a corresponding triangular shaped status indicator shall flash accordingly. The alarm system status indicator shall flash yellow when a "Caution" condition is active. The alarm system status indicator shall flash red when a "Warning" condition is active. The alarm system status indicator shall flash alternately red and yellow if both conditions are active at the same time. The alarm system status indicator shall remain gray if no "Caution" or "Warning" conditions are active. In addition to visual indicators, audible alarms shall sound when designated conditions activate the "Caution" and "Warning" status indicators.

Y\_\_N\_\_

### WARNING INDICATOR

A flashing red triangle symbol shall alert the vehicle occupants of an active "WARNING" condition. This is defined as a situation or status on the vehicle that is of high priority or "mission critical" nature. The flashing red triangle shall be displayed on the Information Center and dash gauge panel in front of the driver. The following are typical "Warning" (high priority) conditions:

CAB NOT LATCHED	LOW VOLTAGE
AIR RESTRICTION	COMM FAULT

The following items are considered warnings only when the parking brake is released.

AERIAL RAISED	JACKS EXTENDED
FRONT BRAKE LOCK	DECK GUN RAISED

Y\_\_N\_\_

### CAUTION INDICATOR

A flashing amber triangle shall alert the vehicle occupants of an active "CAUTION" condition. This is defined as a situation or status on the vehicle that is not of high priority or "mission critical" nature, but requires attention before the vehicle is put in motion. The following are typical "Caution" (not high priority) conditions:

AERIAL RAISED	HYDRAULIC FILTER
OUTPUT TRIPPED	FRONT BRAKE LOCK
DECK GUN RAISED	JACKS EXTENDED

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### AUDIBLE ALARMS

The following conditions shall cause the audible alarm to sound “steady” (not an intermittent beep); signifying a “mission critical” condition exists that requires immediate attention.

STOP ENGINE	CAB NOT LATCHED
LOW AIR	

The following conditions shall cause the audible alarm to sound “intermittently” (i.e., beep), signifying a condition exists that may become “mission critical” if not quickly addressed.

LOW VOLTAGE	HAZARD LIGHT
CHECK ENGINE	CHECK XMSN
AIR RESTRICTION	

Corresponding “Low Air”, “Stop Engine”, “Check Engine”, and “Check Transmission” visual indicators shall be located in the dash gauge panel in front of the driver.

Y \_\_\_ N \_\_\_

### OPEN DOORS / DEPLOYED EQUIPMENT RACKS / EXTENDED STEPS

When a cab or compartment door is open, a step is extended, or equipment (i.e., ladder) rack is deployed, the “DOORS” indicator shall flash. Pressing the corresponding button shall display an overhead graphical representation of the apparatus. This image depicts the open cab door(s), open compartment door(s), deployed equipment rack(s), and/or extended step(s).

Y \_\_\_ N \_\_\_

### AUTOMATED ELECTRICAL LOAD MANAGEMENT SYSTEM

The apparatus shall be equipped with an automated load management system. The load management system shall monitor battery voltage and activate the engine high idle system (provided NFPA interlocks have been established) before disabling any electrical loads. If engine high idle is not available or activation does not result in sufficient battery system voltage, individual electrical loads shall be automatically and sequentially deactivated until voltage returns to an acceptable level. Loads shall be sequentially reactivated to avoid a sudden large voltage demand on the system. Electrical loads defined in NFPA 1901 as “minimum continuous” shall not be subject to automatic load management. Load prioritization shall be independently field programmable by authorized users.

An Information Center display screen page shall provide the status of the automatic high idle feature and individual loads included in the system. If the load management system becomes active, the “LOAD MANAGEMENT” indicator shall flash. The operator shall have the ability to temporarily override the load management system by pressing an “LM OVERRIDE” button on the Information Center. The system shall reactivate if the “LM OVERRIDE” button is pressed again or the apparatus ignition switch is recycled. The operator shall have the ability to determine which electrical loads have been deactivated by pressing the corresponding button on the Information Center Load Management display screen.

Y \_\_\_ N \_\_\_

**City of Waltham Fire Department**

**Bidder Complies**

# City of Waltham Fire Department

Bidder Complies

## LOAD SEQUENCER

A sequential switching device shall automatically energize the specified optical warning devices to minimize potentially damaging voltage fluctuations due to the sudden addition or removal of large current demands on the electrical system. Upon activation of the "EMERGENCY MASTER" warning switch and provided the individual optical warning device switches are also activated, the following loads shall be activated (or deactivated) in 0.5 second intervals:

- Front Light Bar
- Side Light Bar (if applicable)
- Front and Rear Flashing Lights
- Side Warning
- Rear Beacons
- High Beam Headlight Flash

Y \_\_\_ N \_\_\_

## DATA LOGGER

An on-board electronic recording device shall record select apparatus status and usage information. The data logging unit shall communicate with all major vehicle component electronic control units, including engine, transmission, anti-lock brakes and the body electrical system controller. All recorded events shall include date and time stamped information.

Recorded data shall be accessible to authorized service personnel for viewing and download to aid in analyzing selected conditions on-board the apparatus. Recorded data may also be used to analyze apparatus usage trends and aid in incident reporting.

The data logger shall record up to 1 gigabyte of data on a removable storage device.

Y \_\_\_ N \_\_\_

## DATA RECORDER

A LifeGuard Technologies on-board electronic recording device shall record select apparatus status and usage information. The data logging unit shall communicate with all major vehicle component electronic control units, including engine, transmission, anti-lock brakes and the body electrical system controller. It shall record seat belt status of ten seat positions. The data logger shall also communicate with the RollTek System if present. All recorded events shall include date and time stamped information.

The recorder shall be capable of recording 100 engine hours' worth of minute-by-minute data. When memory capacity has been reached, the system shall erase the oldest data first. All data stored shall be uploadable by the user to a computer and importable into a data management software package. The software shall be capable of running on both Windows and Apple operating systems and shall be capable of producing reports over a specified time range.

Reports shall include: Raw second-by-second data, daily logs for the time the engine is running for a given data, weekly summaries showing maximum values each hour for each day, monthly summaries showing maximum values each day for every day of the month.

**City of Waltham Fire Department**

**Bidder Complies**

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## ELECTRICAL SYSTEM DIAGNOSTICS

The apparatus shall feature on-board electrical system diagnostics and provision for off-board diagnostic service equipment.

Y\_\_N\_\_

## ON-BOARD DIAGNOSTICS

On-board diagnostic indicators shall be provided to support rapid troubleshooting of the INTELEX PLUS based electrical power and signal system. The input and output status of each INTELEX PLUS system module shall be easily determined through easy to use display pages. At the top level, the status of the modules shall be determined as either "OFFLINE" or "ONLINE". Additionally, power modules shall have an additional state referred to as "TRIPPED". For the power modules, the operator shall be able to view the value of all inputs and outputs. For the inputs 0.0 = Off and 1.0 = On. For each output, the current state of the output shall be one of the following values: "Off", "On", or "Tripped". The information shall be continuously updated and displayed on the module status page.

Switches shall be provided in the cab to allow the operator or service personnel to obtain On-Board diagnostic information from the ABS system and Engine Controller.

A troubleshooting guide shall be provided with the vehicle to assist with interpretation of the diagnostic signals.

Y\_\_N\_\_

## OFF-BOARD DIAGNOSTIC PROVISION

A 9-Pin Off-Board Diagnostic connector shall be installed to provide service access to the vehicle SAE J1939 and J1587 data bus communication links. The connector shall conform to SAE J1939/13 *Off-Board Diagnostic Connector* specifications. The connector shall be mounted inside the cab on the driver side in a location that is accessible from the ground.

Y\_\_N\_\_

## PUMP ENGAGEMENT CONTROLS AND INDICATORS

One (1) green indicator light shall be installed in the driving compartment, which shall indicate when the pump shift has been completed and shall be labeled "Pump Engaged". A second green indicator light shall also be provided in the driving compartment and also on the pump operator's panel. These two (2) lights shall be energized when the pump shift has been completed, the chassis transmission is engaged in pump gear and the parking brake is applied. The light in the driving compartment shall be labeled "OK To Pump". The light on the pump panel shall be located just above the throttle control and shall be labeled "Throttle Ready". Indicator lights in the cab shall be located adjacent to the pump shift control.

Y\_\_N\_\_



# City of Waltham Fire Department

## Bidder Complies

### 12 VOLT PLUG(S) AND RECEPTACLE(S)

One (1) 12 volt power plug receptacle(s) and cover(s) shall be provided on the officer's side of the dash and shall be wired battery direct. The plug and receptacle are made from corrosion resistant marine grade materials. The plug locks into the receptacle providing a positive moisture proof connection.

Y\_\_N\_\_

### 12 VOLT PLUG(S) AND RECEPTACLE(S)

One (1) 12 volt power plug receptacle(s) and cover(s) shall be provided and installed as directed by the fire department and shall be wired battery direct. The plug and receptacle are made from corrosion resistant marine grade materials. The plug locks into the receptacle providing a positive moisture proof connection.

Y\_\_N\_\_

### BATTERIES

Six (6) Champion 12V Group 31 950 CCA batteries shall be installed three each side of the cab under the rear entrance way.

Heavy-duty battery cables shall be provided to maximize power available to the electrical system.

Y\_\_N\_\_

### JUMPER CABLE STUDS

A pair of jumper cable studs with color coded covers shall be provided under the driver's side battery box.

Y\_\_N\_\_

### BATTERY BOXES

Battery compartments shall be constructed of stainless steel and shall be located one (1) each side mounted on the vehicle frame. They shall be well ventilated and enclosed to protect against road splash and debris. Suitable provisions shall be provided for drainage.

The batteries shall be held firmly in place by providing a full frame type top clamp which encloses the battery set on all four (4) upper corner sides. The one piece clamp shall be fabricated of 3/4" angles and be held in place by two (2) "J" shaped clamping bolts. Battery inspection shall be available by tilting the full tilt cab.

Y\_\_N\_\_

### BATTERY MATS

The batteries shall be installed on a non-corrosive Turtle Tile mat.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## SELECTOR SWITCH - BLUE SEA 9003

A master load disconnect switch shall be provided between the battery positive buss bar and the remainder of the switched battery electrical loads on the apparatus. A green "battery on" pilot light that is visible from the driver's position shall be provided.

One (1) single battery system switch mounted near the driver's side front entrance in a location so it may be turned off by a person standing on the ground outside the vehicle. It shall have the capacity to handle 350 amps of continuous power.

Y\_\_N\_\_

## AIR COMPRESSOR/BATTERY CHARGER

A Kussmaul model #091-9-1200 "Pump Plus 1200" combination air compressor/battery charger shall be installed. The 12 volt compressor will automatically replace air lost due to leakage in the brake system without any interference to engine mounted air compressor functions. The 12 volt automatic battery charger shall maintain a single battery bank with charging capabilities to 40 amps maximum output. A remotely located bar graph display shall indicate the state of charge of the batteries whenever the system is connected to 120 VAC.

A selector switch shall be provided on the charger to operate the compressor either as a D.C. compressor or as an A.C. compressor. The switch shall be placed in the A.C. position.

It shall be located on the driver's side wall adjacent to the side window.

Y\_\_N\_\_

## AUTO EJECT PLUG

A Kussmaul model #091-55-20-120, 120 VAC, 20 amp "Super Auto Eject" shoreline power connector shall be provided for the battery charger. The shoreline power connector shall be provided with a spring loaded cover to prevent water from entering when the shoreline is not connected. A label shall be permanently affixed at the power inlet that indicates the line voltage in volts and the current rating in amps.

Y\_\_N\_\_

## HEADLIGHTS

On the front face of the cab, on either side of the front grille, shall be a removable panel. The removable panel shall provide service access to the cab dash electrical components and wiring harness.

Front headlights shall be mounted in the lower portion of the removable panel. They shall be quad type, rectangular halogen with bright finished trim rings and bezels. The low beam headlights shall be located at the outer position.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## FRONT DIRECTIONAL LIGHTS

There shall be one (1) Whelen 600 Series LED amber arrow directional signal light installed on the upper portion of the removable panel, within the bright trim molding located on each side of the cab front face. Light lens shall have an amber arrow shape with black background and shall be provided with a "flash" pattern; a "sweep" pattern shall not be allowed. . They shall be mounted in a chrome plated dual light bezel that matches the headlight housing.

Y\_\_N\_\_

## HEADLIGHT BEZELS

An additional pair of bright finished bezels shall be provided for the optional warning lights.

Y\_\_N\_\_

## LIGHTS

Exterior cab lighting shall meet or exceed Federal Department of Transportation, Federal Motor Vehicle Safety Standards and any National Fire Protection Association requirements in effect at the time of proposal.

Five (5) pedestal mount Truck-Lite model 10 Beehive, amber LED type clearance and identification lights with chrome mounts shall be installed across the top leading edge of the cab roof.

A Techniq S34 amber LED marker light shall be recess mounted in a rubber sealing grommet placed in the lower side of the front cowl, on each side of the cab. The light body shall be urethane filled to ensure against moisture intrusion. These cowl mounted lights shall have 100,000 hour life and shall carry a manufacturers 10 year warranty.

Seven (7) Techniq S34 red LED marker and clearance lights shall be installed at the rear of the body. The three light identification cluster shall be surface mounted on the rear step vertical flange. Two lights shall be placed at each lower rear body corner, facing the side. Two lights shall be placed in the upper rear body corners, facing the rear.

Y\_\_N\_\_

## LICENSE PLATE LED LIGHT & BRACKET

A steel license plate bracket, painted black, shall be installed on the rear of the vehicle. Mounted on the license plate bracket shall be a chrome light bracket containing a 12 volt LED lamp that shall illuminate the license plate.

Y\_\_N\_\_

## D.O.T. REFLECTORS

Reflectors shall be placed on the cab and body as required by Federal standards. An amber reflector, Signal Stat, model 32ADB, shall be placed on each side of the cab. Four (4) Signal Stat model 32DB red reflectors shall be located on the rear face and sides of the body. The reflectors shall be rectangular in shape.

# City of Waltham Fire Department

## Bidder Complies

Y\_\_N\_\_

### SIDE DIRECTIONAL LIGHTS

Britax model #L428, short rubber side LED directional lights shall be provided in addition to the front turn signals. One (1) light shall be mounted just above the front fender on each side of the cab. Lamp shall have an amber plastic lens at front and a red lens facing rear.

Y\_\_N\_\_

### BRAKE/TAIL LIGHTS

Two (2) Whelen series 600 maximum intensity LED red brake/tail lights, model 60R00XRR, shall be vertically mounted, at the rear of the apparatus, one on each side. All brakes lights shall be shall be programmed for "steady burn" operation in compliance with FMVSS No. 108.

Y\_\_N\_\_

### TURN SIGNAL LIGHTS

Two (2) Whelen series 600 LED amber arrow turn lights, model 60A00TAR, shall be vertically mounted, at the rear of the apparatus, one on each side. They shall be provided with a "flash" pattern; a "sweep" pattern shall not be allowed.

Y\_\_N\_\_

### BACK UP LIGHTS

Two (2) Whelen series 600 maximum intensity clear LED back up lights, model 60C00WCR, shall be vertically mounted, at the rear of the apparatus, one on each side.

Y\_\_N\_\_

### BEZELS

Three (3) pair of Whelen #6EFlange chrome plated bezels shall be provided for the 600 series rear stop, turn, and backup lights.

Y\_\_N\_\_

### LIGHT ACTIVATION

The cab ground and step lights shall be activated with the cab door open switch.

The step and ground lights on the body shall be activated with the parking brake in conjunction with the marker lights.

Y\_\_N\_\_

### CAB STEP LIGHTS

Eight (8) TecNiq model EON, LED step lights shall be provided, two (2) at each cab entrance door. They shall be mounted one (1) above and one (1) below each intermediate step.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### BODY STEP LIGHTS

Four (4) TecNiq Eon, LED horizontal step lights with a polished stainless steel flange shall be surface mounted, one (1) on each side of the rear step area to illuminate the rear step and one (1) on each side on the forward face of the side compartments.

Y\_\_N\_\_

### GROUND LIGHTS

Four (4) weatherproof TecNiq #T410 LED ground lights shall be provided underneath the cab, per NFPA requirements.

Y\_\_N\_\_

### GROUND LIGHTS

Two (2) weatherproof TecNiq #T410 LED ground lights shall be provided underneath the body rear step, per NFPA requirements.

Y\_\_N\_\_

### GROUND LIGHTS

Two (2) weatherproof TecNiq E10 LED ground lights shall be provided underneath the pump enclosure, one each side, per NFPA requirements.

Y\_\_N\_\_

### ENGINE COMPARTMENT WORK LIGHT

One (1) Truck-Lite 4094SW engine compartment work light with integral switch shall be provided and wired to illuminate automatically when the cab is tilted. The light shall also be wired through the engine compartment access door switch, providing illumination of fluid dip sticks and coolant overflow reservoir.

Y\_\_N\_\_

### PUMP MODULE WORK LIGHTS

Two (2) Truck-Lite 4094SW pump module work lights shall be installed, one (1) on the left side behind the master gauge panel and one (1) on the right side behind the removable panel. Each light shall have a switch on it.

Y\_\_N\_\_

### INTERIOR CAB DOME LIGHTS

Four (4) Weldon 8080-7000-13 red/clear LED lights with push button shall be mounted in the cab ceiling. Two (2) in front (driver & officer) and two (2) in the crew cab. All lights shall be controlled by a switch by the lens and shall have a black bezel.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## AUTOMATIC DOOR SWITCHES

Automatic door switches shall be provided for the cab dome lights.

The white dome light activates with the automatic door switch.

Y\_\_N\_\_

## MAP LIGHT

A Sunnex model HS671-00 pivot and swivel map light with on/off switch, shall be located on the instrument panel within reach of the officer.

Y\_\_N\_\_

## HANDLIGHTS

Four (4) Streamlight Fire Vulcan LED model 44451 rechargeable handlight(s) with quick release shoulder strap(s) shall be provided. The handlight shall be orange in color and feature a C4 LED primary bulb and two (2) blue LED taillights. The momentary toggle switch has 8 different modes of operation. A 12 volt DC direct wire charging rack shall be installed and wired to vehicle electrical system.

Y\_\_N\_\_

## EXTERIOR COMPARTMENT LIGHTS - (2) LED STRIP(S)

Six (6) exterior compartment(s) shall have a ROM V3 LED lighting strip installed on both sides of the door. The lighting strips shall be mounted vertically along both sides of the door framing in all specified body compartments. The V3 lights shall be designed and manufactured to be water resistant meeting the IPX7 industry standard. Lights shall have a streamline optic lens and a fixed lumen output across 9-16vcc. LED lights shall draw no more than 0.22 amps at 12.8vdc per 12 inch section of light strip. The LED lights shall be mounted in an anodized aluminum track. A switch, installed in the door frame, shall be used to activate the lights.

Y\_\_N\_\_

## LIGHTBAR WITH EMITTER

A Whelen 72" Freedom FL2 series LED lightbar shall be provided on the cab roof. The inboard, forward facing section of the lightbar shall consist of six (6) 4" x 3" red linear LED lighthead and two (2) 4"x 3" clear linear LED lighthead. A red linear LED corner lighthead shall be located in each of the four corners. A red linear LED lighthead shall be located on each end of the lightbar facing the sides of the cab.

A GTT LED emitter assembly shall be installed in the center section on the front of the lightbar. The emitter shall provide intersection control for quick response and reduced risk of accidents. The flash rate shall be provided by the fire department.

The lens color shall be clear.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## UPPER REAR WARNING LIGHTS

Two (2) Whelen model B6MMRAP lights shall be provided on the upper rear of the apparatus, as directed by the fire department. The upper level shall consist of a red Super-LED rotator light. The lower level shall consist of an amber Linear Super-LED light.

Y\_\_N\_\_

## WARNING LIGHTS

Twelve (12) Whelen model 60R02F\*R red linear Super-LED warning light(s) with chrome plated flange(s) shall be installed on the apparatus. The flash pattern of the light(s) shall be Triple Flash, also known as Comet Flash.

The lens color shall be the same as the LED color.

Location of each perimeter warning light shall be:

- 1 on each side of the cab front, next to the turn signal
- 1 on each side of the cab front, beneath the headlights
- 1 on each side of the cab bumper extension
- 1 on each side of the cab, above the wheelwell
- 1 on each side of the body, above the wheelwell
- 1 on each side of the rear of the body, below the back-up lights

Y\_\_N\_\_

## AUDIBLE WARNING DEVICES

One (1) automotive electric horn controlled by the steering wheel horn button shall be provided.

Y\_\_N\_\_

## BACKUP ALARM

One (1) Preco Model LDA-50 backup alarm shall be provided and activated when the vehicle transmission is placed in reverse. Alarm output shall be a minimum of 97 DBA.

Y\_\_N\_\_

## AIR HORN WITH LANYARD CONTROL

Two (2) Grover 1510 chrome air horns shall be provided. A pressure protection valve shall be installed in-line to prevent loss of all air from the vehicle air brake system. The horns shall be activated by two lanyard pull cords, one for the officer and one for the driver, terminating into one control valve, located between the driver and officer.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## WHELEN SIREN

A Whelen model 295SLSA1 electronic siren shall be provided. The siren has a selectable output of 100 or 200 watts.

Y\_\_N\_\_

## SIREN SPEAKER(S)

One (1) Federal Model ES100 compact 100 watt speaker(s) shall be provided and recess mounted in the front bumper. Opening in the bumper for the speaker shall be covered with a grille.

Y\_\_N\_\_

## SIREN/HORN SELECTOR SWITCH

There shall be a three (3) position selector switch that shall allow the driver to switch activation of the automotive horn (air or electric) to the vehicle electric mechanical siren or electronic siren. Switch shall allow the standard steering wheel button to sound either the horn or the sirens.

Y\_\_N\_\_

## MECHANICAL SIREN

A Federal Model Q2B siren with chrome plated housing shall be mounted on the front bumper extension as directed. Two foot switches shall be provided, installed one each side of the cab, on the toe board. There shall be an electric brake control installed in the cab, at the driver's switch panel, properly labeled.

Y\_\_N\_\_



# City of Waltham Fire Department

Bidder Complies

## PUMP ENCLOSURE

A 48" wide modular pump enclosure with side mount controls, shall be installed between the cab and the apparatus body.

The pump enclosure shall be independently mounted and furnished with flex joints between the cab and the body to allow for flexure of the chassis frame during road travel. (No exceptions to this requirement). The pump enclosure substructure shall be fabricated of aluminum alloy structural shapes and formed aluminum plate and shall also support the side running boards. It shall be installed on the chassis with a four point isolator arrangement that allows it to flex independently of the chassis frame. A Tech Products rubber isolator shall be used at each mounting point for this purpose. The substructure, including the pump and plumbing shall be removable from the vehicle as one complete unit. The aluminum ceiling of the pump enclosure shall be fastened with stainless steel machine screws so that it may be removed for access to the pump and piping as required.

Removable stainless steel panels, full height and width, shall be provided on both sides of the pump enclosure and a stainless steel pump access door shall be provided on each side of the vehicle. Each door shall be hinged along the top and held closed with compression latches or held open with gas struts.

An 8" knurled grab rail shall be provided on the right and left side of the pump enclosure, next to the hinged access door on the side of the door next to the body.

Y\_\_N\_\_

## CONTROL PANEL

All pump controls and gauges shall be located on the left side of the apparatus on a stainless steel panel with color coded identification plates.

The following controls and gauges shall be located on the control panel for convenient operation:

- All discharge controls
- Electronic engine throttle or governor
- Primer control
- Tank fill control
- Tank to pump control
- Master discharge gauge
- Master intake gauge
- 1/4" NPT Allen head pressure and vacuum test plugs
- Auxiliary cooler control
- Master pump drain control
- Individual pressure gauges
- Water level indicator

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## CROSSLAY BEDS

There shall be two (2) crosslay hose beds provided at the top front of the pump enclosure. The bottom of each crosslay shall be a maximum of 43" from the running board stepping surface. Two (2) hose beds shall have the capacity to carry a minimum of 200 feet of pre-connected 1.75" double jacketed hose.

The interior sides of the hose bed shall be constructed of 304 stainless steel and shall have a DA finish. The interior of the hose beds shall be smooth and free from all sharp projections which might damage hose.

One (1) adjustable crosslay hose bed partitions (divider) shall be provided, constructed of 3/16" thick 5052-H32 aluminum alloy plate. It shall have a DA finish. The divider shall be fully adjustable at each end of the hose bed. The divider shall be held in place by two (2) bolts at each end of the partition's bottom flange.

The bottom of the crosslay hose beds shall be provided with a Matflex bed for ventilation for the stored hose.

Y\_\_N\_\_

## OPEN BIN

A 25.63" wide open bin area shall be provided aft of the crosslay beds. The walls surrounding the open bin shall be 15.75" high. The outward facing walls shall be vented as necessary for equipment such as a generator or other device which requires air flow and is located within the open bin.

Y\_\_N\_\_

## PUMP ENCLOSURE EXTERIOR FINISH

The stainless steel pump panels, on both sides of vehicle and including the gauge panel and inspection doors, shall be coated with Line-X, which has a high resistance to abrasion and tearing. The color shall be black. Panels with a black vinyl cloth glued or laminated in some process to a metal backing surface shall not be acceptable.

The Line-X material shall absorb impact without surface damage, protect underlying sheet metal from corrosion and shall be resistant to gasoline, diesel fuel, paints, bleaches, organic solvents and other cleaning agents and chemicals. In the unlikely event it is damaged, such as in an accident, it shall be repairable to a like new condition. It shall also be sound dampening and eliminate vibration. Its surface shall have a non-glare, granular texture, easily cleaned with common cleansing compounds.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### LEFT SIDE RUNNING BOARD

The left side running board shall be made of 3/16" aluminum treadplate. Two (2) supports shall extend from the pump enclosure framing to securely support the running board. The outer edges of the running boards shall be double flanged, i.e. formed down and in. The running board shall not be fastened to supports "hung" from the chassis frame.

An air space shall be provided between the aluminum running board, the body and the pump enclosure to prevent moisture and debris from being trapped between these components.

Y\_\_N\_\_

### EXHAUST SKIRT

An aluminum treadplate skirt shall be installed over the exhaust on the right side of the pump enclosure. The skirt shall include a hinged flip-down step to allow climbing access to compartments on the right side of the pump enclosure. The step shall include a butterfly latch mechanism to hold the step closed during transit.

Y\_\_N\_\_

### PUMP MOUNT BRACKET

A set of mounting brackets shall be used to mount the pump enclosure and the water pump as one complete module to the apparatus chassis. This system shall be mounted at four points to the chassis frame and shall incorporate flexible isolators to absorb stresses from chassis twisting and vibrations.

Y\_\_N\_\_

### PUMP PANEL LIGHTS

The driver's side of the pump enclosure shall have three (3) TecNiq E10 LED lights located beneath light shields to illuminate the pump panel controls and gauges. The officer's side shall have one (1) TecNiq E10 LED light beneath the light shield.

Y\_\_N\_\_

### PUMP PANEL LIGHT ACTIVATION

One (1) of the lights on the driver's side of the operator stand shall be activated when the pump is engaged.

Y\_\_N\_\_

### PUMP PANEL LIGHT SWITCH

A switch on the pump panel shall activate the pump panel lights not already activated by either the pump engaging or the marker/ground lights & parking brake combination.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## CROSSLAY COVER

There shall be an aluminum cover for the crosslay. The cover shall be constructed of 3/16" aluminum treadplate and be hinged with a stainless steel piano hinge. The cover shall be hinged at the front of the hose bed with a hold open device provided for repacking hose.

Y\_\_N\_\_

## CROSSLAY END FLAPS

A weighted cover shall be provided for the ends of the crosslay hose beds. The covers shall be made of 16 oz. per square yard polyester coated with a urethane top coat (vinyl). The vinyl covers shall be permanently attached to the ATP cover and have stainless steel spring clips and hooks on the bottom corners.

This cover combination shall restrain the hose in the crosslay from unintentional deployment while the vehicle is underway in normal operations.

Y\_\_N\_\_

## CROSSLAY DISCHARGES

Two (2) 1.5" discharges shall terminate in the crosslay hose beds. Each shall be plumbed with 2" high pressure hose and/or piping and a 2" ball type bronze valve, terminating with a 1.5" NST 90 degree swivel outlet in each hose bed. The valve control and pressure gauge for each hose bed pre-connect shall be installed on the pump operator's panel.

Y\_\_N\_\_

## WATEROUS PUMP

Pump shall be a Waterous CS single stage 1250 GPM midship mounted centrifugal type, carefully designed in accordance with good modern practice. The pump shall be the class "A" type and be tested at the manufacturer's facility and certified by an independent testing organization.

The pump shall deliver the percentage of rated discharge at pressure 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 when dry shall be capable of taking suction and discharging water with a lift of 10 feet in not more than 30 seconds through 20 feet of suction hose of the appropriate size.

The pump shall have a two-piece, horizontally-split body with intake and discharge passageways in a single casting and on the same level providing the lowest possible height, a lower center of gravity, and more room for hose reels, hose beds and other equipment. The two-piece, horizontally-split pump body design allows removal of the bottom pump cover without disturbing the main pump body mounting or any piping.

# City of Waltham Fire Department

## Bidder Complies

The casing shall be made of high-tensile, close grained gray iron. All passageways shall be carefully matched to assure the very best hydraulic flow characteristics.

Diametrically opposed dual stripping edges and a double-intake bronze impeller shall balance radial and axial forces, contributing to smooth operation and long life.

An exclusive two-piece impeller shaft shall allow true separation of the pump and pump transmission without disassembling either unit, greatly reducing repair labor time. The heat-treated stainless steel impeller shaft shall be ground at all critical areas and polished under packing.

Three deep-groove, anti-friction ball bearings shall be located outside the pumping chamber, giving support and proper alignment to the impeller shaft assembly. Bearings shall be oil or grease lubricated completely separated from the water being pumped, and protected by seal housing, flinger rings and oil seals.

Flinger rings shall be located on the impeller shaft between seal housings and bearing housings to provide added protection and keep water and foreign matter out of the bearings.

Bronze, reverse-flow, labyrinth-type wear rings shall resist water bypass and maintain high efficiency and lasting performance. These replaceable wear rings increase pump life and minimize maintenance costs.

A Waterous C20 pump transmission shall be rigidly attached to the pump body assembly and be of latest design incorporating a high strength, involute tooth form Morse™ HV chain drive capable of operating at high speeds to provide smooth, quiet transfer of power. The shift engagement shall be accomplished by a free-sliding collar and shall incorporate an internal locking mechanism to insure that collar will be maintained in ROAD or PUMP position.

Y\_\_N\_\_

### FLAME PLATED IMPELLER HUBS

The pump shall be equipped with flame plated impeller hubs.

Y\_\_N\_\_

### PUMP PACKING

Bearings to be protected from water and sediment by stuffing boxes with square graphite rings of packing at each end of impeller shaft. Packing to be held in place by split bronze glands which are fully removable and adjustable. Replaceable bronze wear rings to be provided.

Y\_\_N\_\_

### PUMP SHIFT

An air operated shift system shall be provided that allows the shift arm position to be changed by means of an in-cab mounted switch. It shall engage either the pump drive gear or the truck drive shaft gear. A three-position positive lock air shift shall be provided.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### INTAKE PRESSURE RELIEF VALVE

A 2-1/2" Elkhart #40 intake relief valve shall be permanently installed to the pump intake manifold. It shall have minimum pressure adjustment of 75 to 250 PSIG. The surplus water shall be plumbed to the underside of the truck away from the operator.

Y\_\_N\_\_

### PRIMING DEVICE

Priming pump shall be a Waterous Model VPO electrically driven, positive displacement, rotary vane type. It shall operate without the use of sealing oil, i.e. be of oil-less design and not require an oil tank. Motor shall be totally enclosed to prevent dust, dirt and water from entering. Priming pump shall be built by the manufacturer of the fire pump.

Y\_\_N\_\_

### PRIMING VALVE

Priming valve shall be operated by a push button control on the pump panel. Pushing the button shall automatically open the priming valve and activate the primer motor at the same time, thus being a one hand operation.

Y\_\_N\_\_

### PRESSURE CONTROL

Waterous adjustable pressure relief valve system specifically designed for fire service shall be provided. Valve shall be positive and quick acting and have instantaneous on/off control. When in the off position, the relief valve shall functionally be removed from the system. When turned back on, it shall again monitor and maintain the pressure the relief valve was set at the last time it was used. Control for adjusting pressure to be elliptical shaped for positive grip. Wheel control not acceptable. An easily removable pilot valve strainer shall be provided and be accessible from pump operator's panel. LED lights to indicate when the relief valve is bypassing and when the relief valve is fully closed shall be furnished.

Y\_\_N\_\_

### MANUAL HAND THROTTLE

A Fire Research "InfinityPRO" model ETA400 series remote hand throttle shall be installed. The control knob shall be 2" in diameter with a serrated grip, no mechanical stops, and have a red idle push button in the center. When the throttle is active, the cab accelerator shall be inhibited to prevent inadvertent operation of the cab accelerator, which could result in a sudden and dangerous increase in pump discharge pressure.

The remote throttle shall set the engine RPM to idle when the pump engaged interlock signal is recognized regardless of the control knob position. It shall use optical technology to detect the direction and speed of the control knob when it is rotated.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## AUXILIARY COOLING SYSTEM

A supplementary heat exchange cooling system shall be installed to permit use of water from the discharge side of the fire pump to reduce the temperature of the antifreeze solution circulating through the engine cooling system.

Y\_\_N\_\_

## WATEROUS WARRANTY

The pump shall be warranted by Waterous to the original buyer that the pump is free from defects in material and workmanship for 5 years. This warranty covers parts only. The "Warranty Period" commences on the date the original buyer takes delivery of the apparatus. Please refer to Waterous warranty documents enclosed.

Y\_\_N\_\_

## PUMP ANTI-CORROSION SYSTEM

An anti-corrosion system shall be installed to prevent galvanic corrosion within the pump. It shall consist of two (2) sacrificial zinc anodes. One shall be installed on each of the 6" main inlets. Anodes shall be easily removable for inspection and replacement.

Y\_\_N\_\_

## TRANSMISSION LOCK UP

The direct gear transmission lockup for the fire pump operation shall engage when the pump shift control in the cab is activated and the transmission shift is changed to "Drive".

Y\_\_N\_\_

## PUMP PIPING –STAINLESS STEEL, MANIFOLD AND HIGH PRESSURE HOSE

All suction and discharge lines shall use schedule 10 stainless steel pipe or heavy duty pressure/vacuum hose with stainless steel end fittings. Sweat soldered copper tubing is not acceptable. Where vibration or chassis flexing may damage or loosen piping, the pipe shall be equipped with Victaulic or rubber couplings. All discharge and gated inlet lines to drain through individual drain valves. All individual drain lines are to be extended to drain below chassis frame.

A stainless steel discharge manifold shall be used to feed the discharges, 2-1/2" or less, as required by the plumbing layout.

All discharge caps on the apparatus 1-1/2" or larger shall be vented (except for the aerial rear inlet/outlet).

All threaded fittings shall be sealed with a heavy duty Teflon anaerobic pipe sealant. It shall be in a liquid form with a consistency similar to grease. Teflon tape shall not be acceptable. It shall be designed to prevent corrosion between the mating surfaces and to allow for easy disassembly of the joints if necessary. Perma-bond shall manufacture with a trade name of Perma-lok.

All water carrying pressure gauge lines are to be of flexible polypropylene tubing to prevent breakage from vibration. All suction inlets and discharge outlets shall be equipped with National Standard Threads (NST).

# City of Waltham Fire Department

## Bidder Complies

The entire pump and plumbing system shall be hydrostatic tested up to 250 psi by the manufacturer.

Y\_\_N\_\_

### MASTER DRAIN - FIRE PUMP

A master drain valve shall be provided and installed. The drain assembly shall be constructed of brass and stainless steel with individually sealed ports for low point drainage of the fire pump and auxiliary devices.

Y\_\_N\_\_

### DRAINS

A Class One .75" quarter turn ball drain or bleed off valve shall be provided for each gated hydrant inlet or discharge outlet. The valve shall be mounted in an accessible location. The valve controls shall be properly labeled. The water discharged from the valve lines shall be routed so it is exhausted below the chassis frame rails.

Y\_\_N\_\_

### TANK TO PUMP LINE

A 3" tank to pump valve shall be installed between the water tank and the pump. The valve shall be a quarter turn ball type, drop out design and constructed of bronze. The control handle shall be chrome push/pull locking "T" type and will be installed on the left side pump panel. A check valve shall be installed between the pump and the valve to prevent water from flowing back into the tank.

Y\_\_N\_\_

### INLET AND OUTLET PUSH PULL CONTROLS

Controls for all inlets and outlets shall be push-pull in design, unless otherwise stated at the inlet or discharge option. All inlet and outlet push-pull valve control handles shall be the "T" handle design with a recess in its face for a 7/8" x 2-7/8" identification plate. Handles and panel plates (escutcheons) shall be constructed of cast zinc with a polished chrome plated finish. Handles shall be labeled describing the function of the control handle. The discharge valves that are remote mounted in the pump system piping shall be actuated by the 1/4 turn locking push-pull control assembly. The sliding rod for the outlet which pulls out from the pump panel shall be constructed of 3/4" diameter aluminum with a hard coated anodized surface. The aluminum housing shall incorporate two bronze bushing sleeves. Inlet valve controls do not have to be the locking type nor have the control rod. All controls shall actuate without binding, per the manufacturer's requirements.

Y\_\_N\_\_

### AKRON VALVES

All direct and in-line valves shall be Akron model 8600 or 8800 heavy duty swing-out brass valves designed for operating pressures to 250 psi. Akron 8000 series valves have a 316 stainless steel ball turning in self-adjusting ball seats and shall create a positive seal to hold pressure or vacuum in both directions without the use of high maintenance o-rings.

Y\_\_N\_\_

### WARRANTY



# City of Waltham Fire Department

## Bidder Complies

Akron Brass warrants the 8600 and 8800 heavy duty valves for a period of ten (10) years after purchase against defects in materials or workmanship.

Y\_\_N\_\_

### MASTER GAUGES

A pair of Class 1 back lit liquid filled compound gauges, #91664721-L, shall be provided for the master Pump Intake and master Pump Discharge gauges. The gauges shall be 6" in diameter and have a pressure range of 30-0-400 and shall dampen vibration and pulsation. The cases shall be manufactured with corrosion and impact resistant Zytel nylon. To prevent internal freezing and to keep contaminants from entering the gauge, the stem and Bourdon tube of each gauge shall be filled with low temperature oil and sealed from the water system using an isolating diaphragm located in the stem (no exceptions). Light emitting diodes that are independent of the gauges shall back light the gauges. A bright metal bezel shall be supplied for resistance to corrosion and to protect the lens and case from damage.

The master gauges shall be grouped together on the pump operator's control panel for ease of observation during pump operations, as required by NFPA 1901.

Y\_\_N\_\_

### PRESSURE GAUGE(S)

Ten (10) individual Class 1 back lit liquid filled line pressure gauge(s), #91553940-L, for the 1.50" and larger discharges shall be furnished. The gauge(s) shall be 3.5" in diameter and have a pressure range of 30-0-400 and shall dampen vibration and pulsation. The case(s) shall be manufactured with corrosion and impact resistant Zytel nylon. To prevent internal freezing and to keep contaminants from entering the gauge, the stem and Bourdon tube of each gauge shall be filled with low temperature oil and sealed from the water system using an isolating diaphragm located in the stem (no exceptions). Light emitting diodes that are independent of the gauge(s) shall back light the gauge(s). A bright metal bezel shall be supplied for resistance to corrosion and to protect the lens and case from damage.

Y\_\_N\_\_

### PUMP PANEL ENGINE GAUGES - CLASS1 ENFO IV

A Class 1 "ENFO IV" shall be provided. The ENFO IV provides the pump operator with engine rpm, oil pressure, engine temperature and electrical system voltage. The ENFO IV shall utilize the SAE J-1939 bus for engine information. The voltage shall be displayed from the battery. This compact unit contains all required engine audible and visual alarms including the voltage warning. It shall be battery switched.

Y\_\_N\_\_

### AIR HORN BUTTON

A red momentary push button shall be provided on the operator's pump panel to activate the air horn(s).

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## WATER TANK LEVEL GAUGE - MASTER

A Fire Research "TankVision" water tank level gauge shall be installed in a well lit area on the pump panel. The gauge shall show the volume of water in the tank on nine (9) super bright LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. Low water warnings shall include flashing LEDs at 1/4 tank, down-chasing LEDs when the tank is almost empty, and an output for an audio alarm.

The FRC water tank level gauge utilizes a pressure transducer that mounts on the outside of the tank for sensing water levels. No probes are required for the tank.

Y\_\_N\_\_

## PUMP INLETS

A 6" pump manifold inlet shall be provided on each side of the vehicle. Removable die cast zinc strainers shall be provided in each side inlet to provide cathodic protection for the pump and thus reduce corrosion in the pump. Each inlet shall extend past the pump panel and shall allow a minimum of 8" clearance to the outside edge of the running board.

Y\_\_N\_\_

## 2-1/2" HYDRANT INLET(S)

One (1) 2-1/2" gated hydrant inlet(s) shall be furnished on the left side of the pump enclosure. The valve shall be recessed behind the panel and shall be provided with a swing valve control extending through the panel. The valve shall be of the drop out type. Inlet shall terminate with a 2-1/2" NST female swivel adapter and screen.

Y\_\_N\_\_

## LEFT SIDE AUXILIARY GATED INLET PLUG(S)

One (1) 2.5" chrome plated plug(s) and retaining chain(s) shall be provided for the left side 2.5" auxiliary gated inlet(s).

Y\_\_N\_\_

## FRONT 5" PUMP INLET

The apparatus shall be provided with a 5" front pump inlet. It shall be installed with the hose inlet at the right side corner of the cab front bumper.

The inlet shall be constructed of schedule 10 stainless steel piping and shall enter the inlet manifold section of the pump. Galvanized or black iron (steel) pipe is not an acceptable alternative. Connection to the pump shall be via a bolted flange, threaded pipe turned into the manifold will not be acceptable. The front suction shall be a welded fabrication utilizing sweep type welded pipe elbows. Threaded pipe and elbows shall not be used in the design of the front inlet. Piping shall be routed under the cab and over the front axle in the right side wheel well area. It shall be mounted to the chassis frame (not cab or body) with heavy duty support brackets.

The multi-piece assembly shall be connected together with Victaulic couplings. They shall

# City of Waltham Fire Department

## Bidder Complies

prevent damage to the piping when the chassis frame twists or flexes. Also they shall provide a means of disassembly and removal of any individual piping section if necessary because of accident or for easier access to other damaged areas or places requiring special maintenance needs. Front inlet piping shall be removable without having to remove the cab.

Total assembly shall be fully engineered, and not a "make on job" fabrication where future replacement parts cannot be ordered from the apparatus builder. Bidder may be required to provide evidence of his ability to supply engineering drawings of the front inlet assembly and its individual parts.

Y\_\_N\_\_

### FRONT INLET ADAPTER & SCREEN

A 5" NST chrome plated adapter and screen shall be provided for the front inlet.

Y\_\_N\_\_

### FRONT INLET STORZ ADAPTER

A 5" FNST x 4" Storz hard anodized aluminum straight adapter shall be provided for the 5" front inlet.

Y\_\_N\_\_

### FRONT INLET CAP

A 4" Storz hard anodized aluminum cap and cable shall be provided for the front inlet.

Y\_\_N\_\_

### 5" BUTTERFLY VALVE

The front inlet shall include a handwheel controlled 5" Bray butterfly valve. A Waterous handwheel control shall be located on the pump panel. The nameplate shall show handwheel direction for opening or closing. Valve shall be equipped with a ductile iron disk with nylon coating. Valve seat material shall be a fluorinated hydrocarbon elastomer. There shall be a right angle gear assembly mounted on top of valve with control rod extended to pump panel.

An air bleeder for the front suction shall be located adjacent to the valve controller.

Y\_\_N\_\_

### INTAKE PRESSURE RELIEF VALVE

A 2-1/2" Elkhart intake relief valve shall be permanently installed in the inlet piping. It shall have minimum pressure adjustment of 75 to 250 psi. The surplus water shall be plumbed to the underside of the truck away from the operator.

Y\_\_N\_\_

**City of Waltham Fire Department**

**Bidder Complies**

**TANK FILL**

There shall be a 1-1/2" pump to tank fill line installed with a 1-1/2" inline bronze valve. Valve shall be controlled at the pump panel with a chrome locking handle.

Y\_\_N\_\_

**FRONT BUMPER DISCHARGE**

(1) 1.5" pre-connect discharge shall be located in the front bumper extension. The discharge shall be plumbed from the pump with 2" and 2.5" plumbing. It shall have a manual full flow quarter turn valve with push/pull control and a pressure gauge. The discharge shall end in a chrome plated 90 degree swivel elbow.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### 2-1/2" LEFT SIDE DISCHARGE(S)

One (1) 2 1/2" discharge(s), each with a pump mounted, quarter turn ball valve and pressure gauge shall be located on the left side panel. Each valve shall be capable of being locked or unlocked at the valve from the control panel at any position between open or closed and shall operate freely up to maximum pump discharge pressure. Each valve shall be mounted with the body behind the pump panel and bolted to the discharge manifold of the pump.

Y\_\_N\_\_

### LEFT SIDE DISCHARGE ADAPTER(S)

One (1) 2.5" FNPT x 2.5" MNST chrome plated adapter(s) shall be provided for the 2.5" left side discharge(s).

Y\_\_N\_\_

### LEFT SIDE DISCHARGE ELBOW(S)

One (1) 2.5" FNST x 2.5" MNST 45 degree chrome plated elbow(s) shall be provided for the 2.5" left side discharge(s).

Y\_\_N\_\_

### LEFT SIDE DISCHARGE REDUCER(S), CAP(S) & CHAIN(S)

One (1) 2.5" FNST x 1.5" MNST chrome plated adapter(s) with 1.5" chrome plated cap(s) and retaining chain(s) shall be provided for the 2.5" left side discharge(s).

Y\_\_N\_\_

### 2-1/2" RIGHT SIDE DISCHARGE(S)

One (1) 2 1/2" discharge(s), each with pump mounted, quarter turn ball valve shall be located on the right side panel. Each valve shall be capable of being locked or unlocked at the valve from the control panel at any position between open or closed and shall operate freely up to maximum pump discharge pressure. The valve shall be operated, in conjunction with the pressure gauge, from the operator's panel. Each valve shall be mounted with the body behind the pump panel and bolted to the discharge manifold of the pump.

Y\_\_N\_\_

### RIGHT SIDE DISCHARGE ADAPTER(S)

One (1) 2.5" FNPT x 2.5" MNST chrome plated adapter(s) shall be provided for the 2.5" right side discharge(s).

Y\_\_N\_\_

### RIGHT SIDE DISCHARGE ELBOW(S)

One (1) 2.5" FNST x 2.5" MNST 45 degree chrome plated elbow(s) shall be provided for the 2.5" right side discharge(s).

Y\_\_N\_\_

### RIGHT SIDE DISCHARGE REDUCER(S), CAP(S) & CHAIN(S)

One (1) 2.5" FNST x 1.5" MNST chrome plated adapter(s) with 1.5" chrome plated cap(s) and retaining chain(s) shall be provided for the 2.5" right side discharge(s).

Y\_\_N\_\_

**City of Waltham Fire Department**

**Bidder Complies**

# City of Waltham Fire Department

## Bidder Complies

### 3" RIGHT SIDE DISCHARGE(S)

One (1) 3" discharge(s), each with valve shall be located on the right side panel. Each valve shall be a Waterous 3-1/2" handwheel controlled valve with LED indicator to allow easy operation at all pump pressures and be operated from the operator's panel. Each valve shall be mounted with the body behind the pump panel and bolted to the discharge manifold of the pump.

Y\_\_N\_\_

### RIGHT SIDE DISCHARGE ADAPTER(S)

One (1) 3" FNPT x 3" MNST chrome plated adapter(s) shall be provided for the 3" right side discharge(s).

Y\_\_N\_\_

### RIGHT SIDE DISCHARGE ELBOW(S)

One (1) 3" FNST x 4" Storz 30 degree hard anodized aluminum elbow(s) shall be provided for the 3" right side discharge(s).

Y\_\_N\_\_

### RIGHT SIDE DISCHARGE CAP(S) & CHAIN(S)

One (1) 4" Storz cap(s) and retaining chain(s) shall be provided for the right side discharge(s). The Storz cap(s) shall have a hard anodized finish.

Y\_\_N\_\_

### 2-1/2" LEFT REAR PRE-CONNECT(S)

Two (2) 2-1/2" discharge(s) for pre-connected hose shall be located in the left front of the apparatus hosebed. Each shall be plumbed with 2-1/2" pipe. The discharge shall be gated with an in-line 2-1/2" drop out type valve with the control mounted on the pump panel.

Y\_\_N\_\_

### LEFT SIDE PRE-CONNECT ADAPTER

Two (2) 2" FNPT x 2.5" MNST chrome plated adapter(s) shall be provided for the 2.5" left side front pre-connect(s).

Y\_\_N\_\_

### 2-1/2" LEFT REAR DISCHARGE(S)

One (1) 2-1/2" discharge(s) shall be provided at the rear of the hose bed on the left hand side. It shall be plumbed with 2-1/2" pipe. The outlet(s) shall be operated by an in-line 2-1/2" drop out type valve with control and pressure gauge at the pump panel. Victaulic or other flexible type coupling(s) shall be installed in the line as appropriate.

Y\_\_N\_\_

### LEFT SIDE REAR DISCHARGE ADAPTER(S)

# City of Waltham Fire Department

## Bidder Complies

One (1) 2.5" FNPT x 2.5" MNST chrome plated adapter(s) shall be provided for the 2.5" left side rear discharge(s).

Y\_\_N\_\_

### LEFT SIDE REAR DISCHARGE ELBOW(S)

One (1) 2.5" FNST x 2.5" MNST 45 degree chrome plated elbow(s) shall be provided for the 2.5" left side rear discharge(s).

Y\_\_N\_\_

### LEFT SIDE REAR DISCHARGE REDUCER(S), CAP(S) & CHAIN(S)

One (1) 2.5" FNST x 1.5" MNST chrome plated adapter(s) with 1.5" chrome plated cap(s) and retaining chain(s) shall be provided for the 2.5" left side rear discharge(s).

Y\_\_N\_\_

### DELUGE RISER

A 3" deluge gun riser shall be installed above the pump terminating in the open bin with National Pipe Thread (NPT). Location to be determined on the P. E. Drawing and approved by the customer. 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 panel. The outlet shall be piped from the discharge manifold of the pump through 3" piping and be gated with a Waterous 3-1/2" handwheel controlled valve with LED indicator.

Y\_\_N\_\_

### SAFE-TAK PORTABLE MONITOR

Task Force Tips Crossfire portable lightweight monitor consisting of monitor top and base shall be supplied.

The monitor and accessories shall be configured as follows:

Y\_\_N\_\_

### SAFE-TAK PORTABLE MONITOR BASE

Task Force Tips Safe-Tak 1250, model # XFH-1SP portable monitor base shall be provided. The monitor shall include a Safe-Tak, spring loaded butterfly valve designed to rapidly reduce the water flow by 90 percent in the event that contact with the ground is lost. The device shall include an integral carrying handle, four folding stainless steel legs with replaceable tungsten carbide spikes and an anchoring strap (attached to a protective cap) designed to be stored inside the waterway. The butterfly valve shall have a reset handle located near the inlet to allow the water flow to be reestablished once the base is properly stabilized. The base shall allow an optional pressure relief valve to be installed.

The base shall be constructed from hardcoat anodized aluminum and have a red powder coat interior and exterior finish. The inlet shall be configured with one (1) 4" Storz swivel coupling.

Y\_\_N\_\_



# City of Waltham Fire Department

Bidder Complies

## PORTABLE DECK GUN MONITOR TOP

Task Force Tips Crossfire, model # XFT-NJ portable monitor shall be provided. This top only portion shall have a quick release swivel joint. The monitor shall include safety devices that include a locking button which locks the quick release lever when monitor is pressurized, and a 1/4 turn rotational lever lock that secures the horizontal rotation and provides a visual indication that the monitor rotation is locked. For corrosion resistance the monitor shall be constructed from hardcoat anodized aluminum with a red powder coat interior and exterior finish.

The monitor shall have a 3-1/4" waterway for delivery of up to 1250 GPM with low friction loss. Vertical elevation shall be controlled through use of a handwheel controlled stainless steel worm gear which allows full travel to the safety stop point of 35 degrees above horizontal with seven rotations of the wheel. When positioned on a truck mounted riser the monitor shall be able to be used below the 35 degree stop point through release of the spring loaded safety pin.

An automatic drain to remove remaining water and avoid freezing shall be included. Integral stainless steel stream straightener and pressure gauge shall be included. The monitor shall be configured with a Crossfire inlet and 2-1/2" male NH outlet.

Y\_\_N\_\_

## MASTER STREAM STACK TIP SET

Task Force Tips model # MST-4NJ smooth bore stacked tip set shall be provided. For corrosion resistance the tip set shall be constructed from hardcoat anodized aluminum alloy. The set shall consist of four (4) tips with the base tip having a 2-1/2" female NH swivel inlet and 2" outlet. The other tip sizes shall be 1-3/4", 1-1/2" and 1-3/8". Each tip shall be laser engraved with a flow/pressure chart, orifice size, thread size.

Y\_\_N\_\_

## STREAM STRAIGHTENER

Task Force Tips model # XF-SS10 stream straightener shall be supplied. The straightener shall be constructed from extruded aluminum with internal vanes designed to reduce turbulence and increase the reach of smooth bore water streams. The device shall be ten (10) inches in length and have 2-1/2" female NH rigid inlet and 2-1/2" male NH rigid outlet.

Y\_\_N\_\_

## TELESCOPING MONITOR PIPE

Task Force Tips model # XG18VL-XL manually telescoping waterway shall be installed. The waterway shall be capable of being lowered to deck level (or into a monitor well) for storage and transportation and shall be capable of being raised to an extended height of 18" by lifting a quick release latch located at the base of the extension tube. This latching device shall be capable of locking the waterway in either the raised or lowered position while maintaining the ability to horizontally rotate the monitor device 360 degrees.

A sensor shall be located on the waterway that signals a 12 volt indicator light installed in the cab to illuminate to indicate that the monitor is raised. The indicator light shall be installed in the information display located in the cab overhead switch panel area.

The aluminum riser shall have a 3" waterway; hardcoat anodized finish and be furnished with a

# City of Waltham Fire Department

## Bidder Complies

3" Victaulic inlet and a Task Force Tips Crossfire coupling outlet.

Y\_\_N\_\_

### EXTEND-A-GUN BRACKET SET

Task Force Tips model # XGB-33 bracket set shall be provided. The set shall include two saddle brackets and is designed to securely mount the Extend-A-Gun telescoping waterway.

Y\_\_N\_\_

### T-TYPE WATER TANK

#### FOAM TANK

A thirty (30) gallon "B" foam tank shall be incorporated into the water tank. These 30 gallons shall be in addition to the amount of water specified. The fill tower shall be a minimum dimension of 8" x 8" outer perimeter (standard size to be 12" x 12" ). The fill tower shall be provided with an easy opening, hinged, latching cover. Within the fill tower shall be an anti-foaming fill pipe. The fill tower shall be constructed to facilitate complete interior flushing as required. The fill tower shall be equipped with a pressure/vacuum vent that enables the tank to compensate for changes in pressure or vacuum when filling or withdrawing foam concentrate.

Y\_\_N\_\_

#### FRC FOAM TANK LEVEL GAUGE(S)

One (1) Fire Research "TankVision" foam tank level gauge(s) shall be supplied and mounted in a well lit area on the pump panel. The display gauge shall show the volume of foam concentrate in the tank on nine (9) super bright LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. Low foam warnings shall include flashing LEDs at 1/4 tank, down-chasing LEDs when the tank is almost empty, and an output for an audio alarm.

The FRC foam level gauge utilizes a pressure transducer that mounts on the outside of the tank for sensing foam levels. No probes are required for the tank.

Y\_\_N\_\_

#### FOAM SUPPLY KIT

There shall be piping from the foam tank to two (2) Elkhart foam supply kits (Type #2 P/N 81232001). Foam will be gravity fed to supply kits. Supply kits shall be mounted on the pump panels in close enough proximity to a side discharge so as to allow usage of an Elkhart #241 style educator. One (1) supply kit shall be mounted on driver's side. One (1) supply kit shall be mounted on passenger side.

The foam supply kit shall act as a foam tank drain.

#### Booster Tank

The Tank shall have a capacity of 500 U.S. Gallons The tank manufacturer shall mark the tank and furnish notice that indicates proof of warranty. The purpose of the notice is to inform department personnel who store, stock, or use the tank that the unit is under warranty. There shall be a 3" diameter threaded plug located in the bottom of the booster tank sump to provide a drain when cleaning and flushing tank of foreign substances.

# *City of Waltham Fire Department*

Bidder Complies

## Construction

The tank shall be constructed from ½" thick sheet stock material that shall be a non-corrosive stress relieved thermoplastic and U. V. stabilized for maximum protection. The tank shall be of a special configuration and is so designed to be completely independent of the body and compartments. All joints and seams shall be welded and tested for maximum strength and integrity. The top of the tank will be fitted with locations for removable lifting eyes designed with a 3 to 1 safety factor to allow for easy removal. All transverse and longitudinal swash partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow. All swash partitions interlock with one another and are welded to each other as well as to the walls of the tank.

## Fill Tower

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of ½" sheet stock material and shall be a minimum dimension of 8.00" x 8.00" outer perimeter (Standard size to be 12.00" x 12.00"). The fill tower shall be not less than 12.00" high and shall be flush with the top of the body risers as standard. The tower shall be located in the left front corner of the tank unless otherwise specified by the purchaser. The tower shall have a ¼" thick removable screen and a hinged-type cover. Inside the fill tower shall be a combination vent overflow pipe. The vent overflow shall be a minimum of schedule 40 polypropylene pipe with a minimum I.D. of 4" that is designed to run through the tank, and shall be piped behind the rear wheels so as to maximize traction. There shall be a ¾" diameter relief hole provided in the overflow pipe at a point approximately 2.00" above the tank cover line to reduce head pressure.

## Cover

The tank cover shall be constructed of ½" thick sheet stock material that is U. V. stabilized. A minimum of two lifting dowels shall be drilled and tapped to accommodate the lifting eyes.

## Sump

There shall be one (1) sump standard per tank. The sump shall be constructed of ½" thick sheet stock material and be located in the bottom of the tank to the front. On all tanks that require a front suction, a 3" schedule 40 polypropylene pipe shall be installed that will incorporate a dip tube from the front of the tank to the sump location. The sump shall have a minimum 3" NPT threaded outlet on the bottom for a drain plug. This shall be used as a combination clean-out and drain. The tank shall have an anti-swirl plate located approximately 2" - 2 ½" above the sump.

## Outlets

There will be two (2) standard tank outlets: one for tank-to-pump suction line which shall be a minimum of 3" coupling; one for a tank fill line, which shall be a minimum of 1" pipe, NPT coupling. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 500 GPM.

## Mounting

The tank shall rest on cross members in conjunction with such additional cross-members, spaced at a distance that would not allow for more than 530 square inches of unsupported area under the tank floor. In cases where overall height of the tank exceeds 40 inches, cross-member spacing will be decreased to allow for not more than 400 square inches of unsupported area. The tank will be isolated from the cross members through the use of hard rubber strips with a minimum thickness and width dimension of .250" x 2.00" and a minimum Rockwell Hardness of 60 durometer. Additionally, the tank will be supported around the entire bottom outside perimeter

**City of Waltham Fire Department**

**Bidder Complies**

and captured both front and rear as well as side to side to prevent the tank from shifting during vehicle operation. Although the tank is designed on a free floating suspension principle, the tank will have adequate hold down restraints to minimize movement during vehicle operation. If proper retention is not available or incorporated into the apparatus hose floor, an optional mounting restraint system shall be located on top of tank, half way between the front and the rear on each side of the tank. These stops will be constructed of carbon steel having minimum angular dimensions of 3.00" x 3.00" x .250" and shall be approximately 6.00" to 12.00" long. These brackets will incorporate a hard rubber isolating pad with a minimum thickness of .250" affixed on the underside of the angle. The angle will then be bolted to the body sidewalls of the vehicle while extending down to rest on the top outside edge of the upper sidewall of the tank. Internal mounting block design and hose bed floors will be so designed that the floor slat supports extend full width from side wall to side wall and are not permitted to drop off the edge of the tank or in any way come in contact with the individual covers where a puncture could occur. Hose floor loading will support up to 200 lbs. per sq. foot and will be evenly distributed whenever possible. Other equipment such as generators, portable pumps, etc. will not be mounted directly to the tank top.

Y\_\_N\_\_

**WARRANTY**

The water tank manufacturer shall provide a limited lifetime warranty.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## STAINLESS STEEL BODY CONSTRUCTION

The body and compartments shall be constructed of heavy duty 3CR12 stainless steel. The body shall be welded on external or hidden surfaces wherever possible to insure a clean compartment interior look. The compartments shall be a "sweep out" design with the floor higher than the door sill. The compartment floors shall be a minimum of 2.5 mm 3CR12 stainless steel. All compartment seams shall be caulked with gray adhesive/sealant. Each compartment shall be rated for 500 lbs. of storage. False bulkhead panels shall be provided on the inside of the forward and rearward wall of the side compartment panel to cover and protect all electrical wiring and components. This also provides a clean interior for equipment mounting. These panels shall be removable. Door frames on compartments with hinged doors shall be fabricated by flanging the door opening edges inward 1.88" and bending out again .75" to form an angle. The hose body side panels and partitions shall be raised in 5" increments to provide adequate storage for the required and specified hose load.

A bright aluminum treadplate cover shall be installed over the side compartments. The cover shall not form the compartment top but shall be an overlay. The forward and rearward edges of the cover shall be folded down 1.5" to cap the forward and rearward ends of the side compartment panel. The outside edge of the cover shall be folded down 1.5" to cap the outside of the side compartment panel and shall have a 45 degree outward bend to provide drip protection over any compartment doors which are immediately below the cover. Extruded aluminum drip molding with a bright anodized finish shall provide drip protection for any compartment doors that are not directly below an aluminum treadplate cover. The forward face of the side compartments and the face of the front cross panel above the operator stand shall be covered with a bright aluminum treadplate overlay. All body components covered with aluminum treadplate overlays shall be coated with an anti-corrosion compound prior to installation. All treadplate shall be secured with threaded fasteners.

Fender compartments shall be integral with the body side compartmentation. There shall be no sharp objects protruding into the wheel well area that could cause injury while cleaning or doing other maintenance in this area.

Y \_\_\_ N \_\_\_

## BODY MOUNTING SUBSTRUCTURE

The front portion of the right and left hand side compartments shall mount to a front cross panel. The panel shall be constructed of stainless steel tubing and heavy duty stainless steel sheet metal. The front cross panel assembly shall rest on two (2) heavy duty rubber isolators. These isolators shall be bolted to brackets mounted to the chassis frame, as close to the center line of the chassis frame as possible. These center mounted isolators shall provide a pivot point which shall allow chassis movement without introducing stresses into the body. The rear portion of each side compartment shall bolt directly to the rear step support assembly, which is bolted directly to the chassis frame. The rear steel step/body support assembly shall be constructed of formed .25" and .375" plate, 2" X 3" tubes, 2" X 2" angles, and 3" structural channels in a welded assembly. The rear wall shall be reinforced with formed heavy duty panels.

Y \_\_\_ N \_\_\_

**City of Waltham Fire Department**

**Bidder Complies**

# City of Waltham Fire Department

Bidder Complies

## LEFT SIDE COMPARTMENTS

The full height left hand side panel at 137.00" long by 70.00" high shall be made of stainless steel. This panel consists of one (1) full height compartment ahead of the rear wheels, one (1) full height compartment behind the rear wheels, and one (1) upper compartment above the rear wheels. The compartment behind the rear wheels has a 25.75" wide x 29.75" high transverse area through the rear tailboard compartment. It also has extended compartmentation in place of standard beavertail. This extended area is half depth. All compartments shall have hinged doors.

The compartment ahead of the rear wheels shall have a doorframe to doorframe dimension of 19.50" wide x 63.75" high. The clear door opening shall be 16.00" wide x 61.75" high. The usable compartment space of the lower full depth area shall be 19.50" wide x 29.75" high x 25.75" deep and the upper shallow area shall be 19.50" wide x 36.50" high x 11.75" deep. This compartment shall have a vertically hinged single door.

The compartment behind the rear wheels shall have a doorframe to doorframe dimension of 47.50" wide x 63.75" high. The clear door opening shall be 43.50" wide x 61.00" high. The usable compartment space of the lower full depth area shall be 31.50" wide x 29.75" high x 25.75" deep, the lower half depth area shall be 16.00" wide x 29.75" high x 11.75" deep, and the upper shallow area shall be 47.50" wide x 36.50" high x 11.75" deep. This compartment shall have vertically hinged double doors.

The upper compartment above the rear wheels shall have a doorframe to doorframe dimension of 58.00" wide x 30.50" high. The clear door opening shall be 54.50" wide x 27.00" high. The usable compartment space shall be 63.38" wide x 33.00" high x 11.75" deep. This compartment shall have a horizontally hinged door.

Y\_\_N\_\_

## RIGHT SIDE COMPARTMENTS

The low right hand side panel at 137.00" long by 36.00" high shall be made of stainless steel. This panel consists of one (1) low compartment ahead of the rear wheels and one (1) low compartment behind the rear wheels. The compartment behind the rear wheels has a 25.75" wide x 29.75" high transverse area through the rear tailboard compartment. It also has extended compartmentation in place of standard beavertail. This extended area is half depth. Both compartments shall have hinged doors.

The compartment ahead of the rear wheels shall have a doorframe to doorframe dimension of 19.50" wide x 29.75" high. The clear door opening shall be 16.00" wide x 27.75" high. The usable compartment space shall be 19.50" wide x 29.75" high x 25.75" deep. This compartment shall have a vertically hinged single door.

The compartment behind the rear wheels shall have a doorframe to doorframe dimension of 47.50" wide x 29.75" high. The clear door opening shall be 43.50" wide x 27.00" high. The usable compartment space of the lower full depth area shall be 31.50" wide x 29.75" high x 25.75" deep and the lower half depth area shall be 16.00" wide x 29.75" high x 11.75" deep. This compartment shall have vertically hinged double doors.

**City of Waltham Fire Department**

**Bidder Complies**

Y\_\_N\_\_



# City of Waltham Fire Department

Bidder Complies

## VENTS

Compartment vents shall be provided to meet the requirements of NFPA 1901, current edition.

Y\_\_N\_\_

## REAR ALUMINUM INNERLINERS

Full semi-circular innerliners shall be provided in each wheel housing. They shall be constructed of aluminum and shall be bolted in place so they may be removed if damaged. Self-tapping sheet metal screws are not acceptable. The bottom edge of liner shall be reinforced along its full length, however, it shall not have a formed reinforcement flange to avoid trapping dirt and debris.

Y\_\_N\_\_

## REAR FENDERETTE

Polished stainless steel fenderettes shall be installed on the rear wheel openings. The fenders shall be wide enough to completely cover the outside rear tire and reduce wheel splash up the sides of the body. They shall be installed with 1/4" hex head bolts, self-tapping sheet metal screws are not acceptable. A full width rubber welt shall be placed between the fenderette and body wheel well opening flange. The outside edge of the welting shall form a "V" bead between the fender and the body side face to prevent moisture from entering. The inside edge shall also have a small raised bead. The outside edge of fenderette, at the wheel opening, shall be rolled inward to eliminate any sharp edges and avoid injury when cleaning the apparatus.

Y\_\_N\_\_

## REAR FENDER PANELS

Painted 3CR12 stainless steel fender panels shall be provided on the outer face of each fender area. The panels shall be painted to match the job color.

Y\_\_N\_\_

## REAR COMPARTMENT

One (1) full height, full width stainless steel compartment shall be provided at the rear of the apparatus above the tailboard, 42.00" wide x 44.63" high x 28.00" deep. The compartment shall be transverse as standard with a 25.75" wide x 29.75" high transverse area through each rear side compartment. In the rear wall, there shall be a removable access cover adequately sized to service the fuel tank pickup tube and sending unit without having to remove the tank.

The full height compartment shall have a doorframe to doorframe dimension of 38.00" wide x 39.75" high. The clear door opening shall be 36.50" wide x 34.50" high. The usable compartment space for the area under the roll shall be 41.75" wide x 35.00" high x 26.50" deep and the area behind the roll shall be 41.75" wide x 7.25" high x 15.75" deep. This compartment shall have an aluminum shutter type roll up door.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## FINISH – BODY REAR COMPARTMENT INTERIOR(S)

One (1) body rear compartment interior(s) shall be finished with gray Zolatone type paint following the Zolatone Coat application process.

Y\_\_N\_\_

## FINISH – BODY REAR COMPARTMENT INTERIOR(S)

One (1) body rear compartment interior(s) shall be clear coated following the Zolatone Clear Coat application process in the same components that received a Zolatone application.

Y\_\_N\_\_

## HINGED COMPARTMENT DOORS

The side compartment doors shall be lap type, double panel construction with 14 gauge outer and 14 gauge 3CR12 stainless steel inner panels. (NO EXCEPTIONS TO THIS STATEMENT.) Outer pan edges that form the lap portion of the door shall be "hemmed" (bent over and back 180 degrees) over the inner pan edges. Inside corners, at the hem area, shall be welded and ground smooth. A minimum of one (1) "Z" shaped formed 14 gauge support rail (two (2) if door is wider than 14") shall be placed between the panels to stiffen and reinforce the door. Stiffener shall be welded to the inside pan and fastened to the outside pan with 3M two sided industrial strength tape.

The doors shall be weather stripped with an automotive bulb type extruded rubber inner seal. A second outer seal of closed cell rubber shall be placed on the lap edge of the door to prevent damage to the paint finish. Outer seal shall have corrugated surface to prevent sticking.

The doors shall be mounted on stainless steel piano hinges with a pin diameter of .25". Mounting holes shall be slotted vertically on one side of the hinge and horizontally on the other side to provide for proper adjustment of the door. The hinge pins shall have spun ends (crowns) at both ends to hold them in place and provide a finished look. Eberhard 206 latches with stainless steel "D" ring handles shall be provided on the lift, single, drop down, and lock door (double door set-up). The free door (double door set-up) shall have an (2) Eberhard latches top and bottom with a single handle located inside the door (standard location at bottom). Isolation tape shall be furnished between the door hinge and door jam. A rubber gasket shall be provided between the "D" ring handle and the door.

Vertically hinged doors shall be equipped with Hansen 5EZ or Thomas EZ spring type door checks that also hold the doors in the open and closed position. Checks shall be the two point mounting type for simplicity. Spring tension (15 lb.) shall be easily adjustable. Checks shall have black zinc mounting brackets with stainless steel springs, 11" long rods and clamps. Springs shall be polished. Horizontally hinged doors shall be held in the opened position with gas cylinder type stays. Switches for automatic compartment light operation shall be installed in the door hinge area.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## ALUMINUM COMPARTMENT DOOR LINER(S)

Aluminum treadplate overlay shall be provided on the inside of seven (7) compartment door(s) to protect the painted finish and to cover inside door hardware.

Y\_\_N\_\_

## ROLL UP COMPARTMENT DOORS

The compartment door on the rear of the apparatus shall be a R.O.M./Robinson aluminum shutter roll-up type door, made in the U.S.A. with an anodized finish. A magnetic door ajar and compartment light system designed within the door to conceal moving parts and prevent parts exposure in the compartment shall be provided. Slats shall be double-wall box frame extrusion and must be anodized to eliminate oxidation and rusting. Exterior surface shall be flat and interior surface to be concave to help loose equipment from jamming the door. The latch system shall be a full width, one piece, lift bar, enabling operation with one hand. The manufacturer's standard door frame design may be altered or modified to accommodate the roll-up doors.

Y\_\_N\_\_

## REMOVABLE PROTECTIVE SHIELD(S)

A removable protective shield shall be provided and installed in the upper portion of the rear compartment to protect the rollup door when in the open position. The shield shall be fabricated of 18 gauge brushed stainless steel.

Y\_\_N\_\_

## WARRANTY

The R.O.M. Roll-Up Shutter shall be warrantied for manufacturing defects for a period of 7 years from the date of purchase. See attached warranty for specifics.

Y\_\_N\_\_

## BODY DOOR HINGES

All piano hinges on the main body exterior doors shall be mill finished.

Y\_\_N\_\_

## FINISH – BODY SIDE COMPARTMENT INTERIOR(S)

Six (6) body side compartment interior(s) shall be finished with gray Zolatone type paint following the Zolatone Coat application process.

Y\_\_N\_\_

## FINISH – BODY SIDE COMPARTMENT INTERIOR(S)

Six (6) body side compartment interior(s) shall be clear coated following the Zolatone Clear Coat application process in the same components that received a Zolatone application.

Y\_\_N\_\_

## DA FINISHED HOSEBED

# City of Waltham Fire Department

## Bidder Complies

The interior of the hose bed shall be "DA" finished only, no paint shall be provided.

Y\_\_N\_\_

### REAR SURFACE OF BODY

The rear facing body surface around the rear compartment shall be covered with smooth aluminum in preparation for the installation of reflective chevron striping.

Adequately reinforced treadplate shall cover any front to back walls facing the step area up to the height of the hosebed floor. Then the remaining upper inside surface shall be covered with brushed stainless steel. All treadplate shall be secured with threaded fasteners.

The rear facing bulkhead of the compartments shall be painted job color.

Y\_\_N\_\_

### TAILBOARD

The tailboard shall be "T-Style" and consist of a 16" deep portion located between the rear body compartments, and an 8" deep extension located behind the rear body that runs full width (98" wide), making the total depth of the tailboard 24" between the rear body compartments. The width of the tailboard between the rear body compartments shall be 42" when both compartments are 28" deep, 70" when both compartments are 14" deep, and 56" when one compartment is 14" deep and the other compartment is 28" deep. The tailboard surface shall be 3/16" thick aluminum treadplate with 2-1/2" deep flanges on the front, rear, and side edges. It shall be installed over a heavy-duty steel framework to prevent the tailboard from bending and flexing. The tailboard support shall be constructed of formed 1/4" - 3/8" plate, 2" X 3" tubes, 2" X 2" angles, and 3" structural channels in a welded assembly. It shall be bolted directly to the chassis frame rails, not the body.

All mounting bolts used to fasten the treadplate to the tailboard support shall be 5/16" flat-head Phillips. Holes for these fasteners shall be countersunk so bolt heads are flush with the walking surface. Self-tapping sheet metal screws shall not be used to install the aluminum treadplate. There shall be a 1/2" gap between the tailboard and the body to prevent moisture from being trapped. Rear outside corners shall have a 4" 45 degree miter.

Y\_\_N\_\_

### HOSE LOAD

The hose load in the main hosebed shall be:

100 feet of 1 3/4" double jacket attack hose (this hose shall be located atop the horizontal divider above 150 feet of 1 3/4" double jacket hose)  
200 feet of 2 1/2" double jacket attack hose  
200 feet of 2 1/2" double jacket attack hose  
400 feet of 1 3/4" double jacket attack hose  
650 feet of 2 1/2" double jacket attack hose  
1,000 feet of 4" Niedner Supply Line hose

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### HOSEBED

The hosebed shall be a minimum of 70" wide and shall be thoroughly reinforced at the corners. Removable aluminum grating shall be installed in the bottom of the hosebed to provide ventilation. The grating slats shall be 4-5/8" wide by 1/2" thick and shall have a corrugated or ribbed surface to help drain and dry the hose. The interior of the hosebed body shall be smooth and free from all sharp projections that might damage the hose.

The shape of the hosebed for a pumper body shall be rectangular, 70" wide as standard.

Y\_\_N\_\_

### HOSE BED DIVIDER(S)

Four (4) smooth aluminum hose bed divider(s) with an Etchfinish shall be provided to separate the individual hose loads. The divider shall be constructed of .1875" aluminum sheet welded to a T-shaped extruded foot that runs the full length of the partition. The divider(s) shall be fully adjustable by providing slide tracks at the front and rear of the hose bed. The divider shall be held in place by two (2) 5/16" tapered bolts at each end of the partition. The mounting bolts shall turn into threaded slide blocks located in the track. Holes in the T-shaped foot shall be countersunk so the bolt head is flush with the surrounding surface and will not damage the hose.

Y\_\_N\_\_

### HOSEBED DIVIDER REINFORCEMENT(S)

A 1.25" round aluminum extrusion slotted on the bottom to fit over the top and rear edge of the partition shall be provided on five (5) hosebed divider(s). The extrusion shall be beveled at the corner and welded in place to reinforce the partition. This option is required for partitions with excessive length or height.

Y\_\_N\_\_

### HORIZONTAL HINGED DIVIDER IN HOSEBED

A horizontally hinged divider shall be placed between the hose body side and the outermost vertical hosebed divider. It shall run the full length of the hosebed. This shelf shall be constructed of hosebed grating with aluminum angle or channel reinforcements welded to the underside of the grating. A full length stainless steel piano hinge shall be bolted to the horizontal divider and the hosebed side. The other side of shelf shall rest on an angle welded to the vertical divider. The manufacturer shall adjust width of shelf to accommodate 150' of 1-3/4" hose above and below the horizontal divider.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### HOSEBED COVER

A 1/8" thick aluminum treadplate hosebed cover shall be provided. They shall fully cover the entire top of the hosebed. The cover shall be made of two (2) doors with continuous piano type hinges bolted to each hosebed side panel. Hinges shall be bolted to the covers. Edges of each cover shall be flanged down 1-3/8" and each corner shall be welded. Each cover shall be reinforced with 1-1/4" square tubes welded to the underside of the cover for increased strength.

The covers shall be supported by a 2" x 3" tubular A-frame assembly. This A-frame support shall be bolted between the LH & RH risers (or body sides if no risers are needed) at the rear of the hosebed. There shall be a center drainage trough permanently incorporated into the A-frame supports. The covers shall lap onto this trough when closed. The A-frame support shall be higher in the center to create a downward slope to each side of body for proper moisture drainage. A gas cylinder rated at 150 lbs. shall be installed on each cover to assist in lifting it. Cylinders shall also hold the covers in the raised position. An aluminum treadplate panel shall be provided to close off the front of the hosebed.

There shall be four (4) chrome finished cast handles mounted on the top of the covers as follows: two on each cover, one at the front and one at the rear mounted perpendicular to the hinge and located along the forward and rearward edges and against the edges where the covers meet.

Y\_\_N\_\_

### WEIGHTED END FLAPS

A weighted and secured vinyl cover shall be provided for the rear of the aluminum hosebed cover. The cover shall be made of 16 oz. per square yard polyester coated with a urethane top coat (vinyl). The vinyl shall be permanently attached to the ATP cover and have stainless steel spring clips and hooks on the bottom corners. This cover combination shall secure the hose from unintentional deployment while the vehicle is underway in normal operations.

Y\_\_N\_\_

### BACKBOARD STORAGE

An open slide-in type backboard storage compartment shall be provided on the underside of the hinged aluminum treadplate hosebed cover.

Y\_\_N\_\_

### HINGED ACCESS COVER

The forward end of the cover shall have a hinged access cover for the water tank fill tower. It shall be constructed of aluminum treadplate and be equipped with a spring loaded snap latch.

Y\_\_N\_\_

### REVERSE HINGE FRONT COMPARTMENT DOORS

The front side compartment door, at each side of the body, shall be hinged at the rear of the door so that it opens away from the pump panel. This modification is required to allow for easier access to the compartments from the operator's position.

# City of Waltham Fire Department

## Bidder Complies

Y\_\_N\_\_

### COMPARTMENT DOOR SILL PROTECTOR(S)

A brushed stainless steel sill protector, approximately .50" wide, shall be provided on seven (7) body compartment door sill(s) to protect the painted finish.

Y\_\_N\_\_

### DRI-DEK

Thirteen (13) black Dri-Dek mat(s) shall be provided and installed on compartment floors and/or in shelves/trays as specified.

Y\_\_N\_\_

### ADJUSTABLE SHELF OR SHELVES

Six (6) adjustable shelf or shelves (with open corners) made from 3/16" smooth aluminum sheet metal shall be provided. Each shelf shall be supported by four (4) stainless steel angles bolted to "alumastrut" tracks.

Y\_\_N\_\_

### ROLLOUT TRAY(S)

Two (2) rollout tray(s) constructed of 0.188" aluminum shall be provided. Each tray shall have edges on all four sides for added strength and be mounted on heavy duty rollers able to support a 500 lbs. load. Corners shall be open. Trays shall extend 70% of the slide length and shall be bolted to the compartment floor. Tray(s) shall be located as directed by the fire department.

Y\_\_N\_\_

### ALUMINUM TOOL MOUNTING BOARD(S)

A tool mounting board constructed of .1875" smooth aluminum mounted on Unistrut shall be located on the back wall of two (2) compartment(s). The mounting board shall be 30" in height and as wide as the compartment door opening (minus 1.5"). The entire surface of the mounting board shall have a DA'd finish. Mounting boards in the full height compartments shall be located in the upper portion only. The board(s) shall be easily removable to allow for installation of fire department tools and equipment.

Y\_\_N\_\_

### AIR BOTTLE COMPARTMENTS

There shall be four (4) enclosures to accommodate eight (8) air bottles. Two (2) oval double air bottle compartments shall be located, two (2) each sided, with one (1) fore and one (1) aft of the rear axle. The compartments shall be fabricated of high impact polyethylene material. They shall be a minimum of 26.00" usable depth, and an 8.00" inside diameter. The double compartments shall have a single wide opening and a raised nylon center divider to prevent the bottles from rolling together.

Y\_\_N\_\_

### AIR BOTTLE COMPARTMENT DOOR

# *City of Waltham Fire Department*

## Bidder Complies

The compartment doors shall be constructed of 12 gauge brushed stainless steel secured by a full length stainless steel hinge and a push button lever latch.

Y\_\_N\_\_

### BODY REAR STEPS

There shall be chrome folding steps on both sides of the rear, in sufficient quantities, to meet NFPA regulations for the height configured by the body and tank chosen.

The folding steps shall be a minimum of 42 square inches of serrated non-skid surface per step. Each step shall be tested to withstand a minimum of 2000 pounds of static load. Heavy duty stainless steel springs shall be incorporated in the hinge to hold the step in either the open or closed positions.

Y\_\_N\_\_

### BODY FRONT STEPS

There shall be three (3) chrome folding steps on the driver's side front of the body.

The folding steps shall be a minimum of 42 square inches of serrated non-skid surface per step. Each step shall be tested to withstand a minimum of 2000 pounds of static load. Heavy duty stainless steel springs shall be incorporated in the hinge to hold the step in either the open or closed positions.

Two (2) 8" knurled grab rails shall be provided on the front driver's side of the body, as high as possible in compliance with NFPA 1901 requirements for 3-point contact for access and egress at that location.

There shall be an additional LED light to illuminate the steps.

Y\_\_N\_\_

### BODY HANDRAILS

Handrails to be 1-1/4" diameter extruded, knurled, aluminum with a bright anodized finish.

All handrail stanchions shall be chrome plated. They shall be bolted to the body with 1/4" stainless steel hex head bolts. Stanchions shall have a rubberized gasket placed between them and the body surface they are mounted on. A drain hole shall be provided in each bottom stanchion.

Handrails shall be installed as follows:

One (1) handrail, a minimum of 30" long, shall be provided and installed on each rear beavertail or body side. Each handrail shall be located so as to provide a 3-point stance while climbing onto and off the rear step.

One (1) full-width intermediate handrail shall be installed below the hosebed.

Additional handrails may be required per NFPA, dependent upon body configuration.

Y\_\_N\_\_



**City of Waltham Fire Department**

**Bidder Complies**

# City of Waltham Fire Department

## Bidder Complies

### ADDITIONAL HANDRAIL(S)

Two (2) 18" knurled aluminum handrail(s) shall be provided and mounted atop the hosebed cover at the rear, one (1) each side. Handrail(s) shall be supported by chrome plated stanchions and be of similar construction and utilize the same mounting hardware as the other handrails on the apparatus, i.e. serrated exterior surface with rubber inserts, rubberized gaskets, stainless steel bolts, etc.

Y\_\_N\_\_

### RUB RAIL – BODY SIDES

Bright aluminum polished C-channel rub rails shall be provided along the lower portion of the body, beneath the compartment doors, on each side to prevent damage to the body and finish. The C-channel shall be mounted so the flat side of the channel is against the body and the legs of the channel protrude outward. The rub rails shall be a minimum of 2.25" wide x 1.25" deep, and shall be mounted on rubber supports. The rub rails shall have a 1.25" x 1.25" chamfer at the front and rear of the rail. The rails shall protrude 1.50" from the face of the body.

Y\_\_N\_\_

### 120 VOLT SHORELINE POWERED RECEPTACLE IN BODY COMPARTMENT(S)

A 120-volt, 20 amp, 3-wire receptacle shall be provided inside one (1) body compartment(s), as directed by the fire department in accordance with NFPA guidelines. A brushed stainless steel coverplate shall be provided to protect the receptacle. The receptacle shall be powered by the shorepower inlet and labeled accordingly.

Y\_\_N\_\_

### CAB FRONT BROW MOUNT SCENELIGHT(S)

One (1) FRC model 807 mount(s) shall be installed on the cab front brow.

Y\_\_N\_\_

One (1) FRC "Spectra" SPA100-Q15, 12 volt, 13.0 amp, 15,000 lumen LED lighthouse(s) shall be installed as directed by the fire department. The lamphead shall have sixty (60) ultra-bright white LEDs, 48 for flood lighting and 12 to provide a spot light beam pattern. The lamphead angle of elevation shall be adjustable at a pivot in the mounting arm and the position locked with a round knurled locking knob. The lamphead shall be no more than 5-3/8" high by 14" wide by 3-3/4" deep and have a heat resistant handle.

One (1) FRC lighthouse(s) and light mounting bracket(s) shall have a white powder coat finish.

One (1) 12 volt light(s) shall be switched at the cab dash.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### CAB SURFACE MOUNT SCENELIGHT(S)

Two (2) surface light mount(s) for Fire Research Spectra 900 lamphead(s) shall be installed above the cab side access doors, one (1) each side.

Two (2) FRC "Spectra" SPA900-Q65, 12 volt, 6.0 amp, 4,600 lumen LED lighthouse(s) shall be installed above the cab side access doors, one (1) each side. The lamphead shall have twenty-four (24) ultra-bright white LEDs. The lamphead shall be 6-3/4" high by 9" wide and have a profile of less than 1-3/4" beyond the mounting surface. The lamphead housing shall be aluminum with a chrome colored bezel.

Two (2) 12 volt light(s) shall be switched at the cab dash.

Y\_\_N\_\_

### BODY REAR SURFACE MOUNT SCENELIGHT(S)

One (1) surface light mount(s) for Fire Research Spectra 900 lamphead(s) shall be installed on the upper left side rear of the body.

One (1) FRC "Spectra" SPA900-Q65, 12 volt, 6.0 amp, 4,600 lumen LED lighthouse(s) shall be installed on the upper left side rear of the body. The lamphead shall have twenty-four (24) ultra-bright white LEDs. The lamphead shall be 6-3/4" high by 9" wide and have a profile of less than 1-3/4" beyond the mounting surface. The lamphead housing shall be aluminum with a chrome colored bezel.

One (1) 12 volt light(s) shall be switched at the cab dash.

Y\_\_N\_\_

### TELESCOPIC POLE MOUNT SCENELIGHT(S)

Two (2) FRC model 530, side mounting, push-up, telescopic pole(s) shall be installed on the rear of the cab, one (1) each side. Each 530 telescopic pole shall have a grooved grab handle that is NFPA compliant, as standard.

Two (2) FRC "Spectra" SPA100-Q15, 12 volt, 13.0 amp, 15,000 lumen LED lighthouse(s) shall be installed on the rear of the cab, one (1) each side. The lamphead shall have sixty (60) ultra-bright white LEDs, 48 for flood lighting and 12 to provide a spot light beam pattern. The lamphead angle of elevation shall be adjustable at a pivot in the mounting arm and the position locked with a round knurled locking knob. The lamphead shall be no more than 5-3/8" high by 14" wide by 3-3/4" deep and have a heat resistant handle.

Two (2) FRC lighthouse(s) and light mounting bracket(s) shall have a white powder coat finish.

Two (2) 12 volt light(s) shall be switched at the cab dash.

Two (2) FRC "Steady Rest" bracket(s) shall be installed, as directed by the fire department. The brackets shall provide added bottom support for the inside pole when it is in the retracted position.

# City of Waltham Fire Department

## Bidder Complies

Two (2) FRC telescopic pole(s) shall be connected to the hazard indicator in the cab. The hazard light shall be activated when the telescopic light is not in the nested position.

Y\_\_N\_\_

### GROUND LADDERS

Ladders shall be provided in full compliance with NFPA 1901 requirements for pumper trucks. The following ground ladders shall be provided:

One (1) Duo-Safety 10 ft aluminum folding ladder(s), Series 585-A

One (1) Duo-Safety 14 ft aluminum roof ladder(s), Series 775-A

One (1) Duo-Safety 24 ft. 2-section aluminum extension ladder(s), Series 900-A

Y\_\_N\_\_

### LADDER BRACKETS AND CLAMPS

The ladders shall be installed on the right side of the hose body on stainless steel Unistrut with a mill finish. The ladder brackets shall have up and down adjustment without the need to drill holes or modify the brackets. The Unistruts shall be bolted to the upper flange of the hose bed at the top and to the compartment top at the bottom. Circular rubber spacers shall be used behind the ladder brackets to maintain the offset from the hose body side.

Polished aluminum pull/quarter turn type ladder clamps shall be provided for the ground ladders. They shall be vertically adjustable up and down independent of the ladder brackets. Clamps shall be attached to a stainless steel spring loaded shaft. Clamp spring tension shall be adjustable. The spring assembly shall be fully enclosed within a white metal cast housing. Housing shall be painted a silver/gray color. A vertically adjustable rubber bumper shall be placed in the ladder bracket mounting guide to serve as a stop or rest for the inside lower ladder beam and to prevent it from hitting and damaging the body sides.

Y\_\_N\_\_

### LADDER BRACKET NYLON WEAR STRIPS

The ladder brackets shall have nylon (UHMW) wear strips attached to prevent damage to the ladders.

Y\_\_N\_\_

### PIKE POLES/MOUNTING

The following pike poles shall be furnished:

One (1) 6 ft. Fire Hooks Unlimited APH-6 pike pole(s) shall be provided. The handles shall be solid fiberglass with stainless steel wear sleeves. There shall be a gas shutoff on the end of the pole opposite the hook.

One (1) 8 ft. Fire Hooks Unlimited APH-8 pike pole(s) shall be provided. The handles shall be solid fiberglass with stainless steel wear sleeves. There shall be a gas shutoff on the end of the pole opposite the hook.

Y\_\_N\_\_

# City of Waltham Fire Department

## Bidder Complies

### ALUMINUM TUBE PIKE POLE MOUNT(S)

Two (2) aluminum tube(s) shall be mounted to facilitate storage of pike poles.

Y\_\_N\_\_

### PIKE POLE TUBE FINISH

Two (2) pike pole tube(s) shall have a brushed finish.

Y\_\_N\_\_

### WHEEL CHOCKS

Two (2) Worden HWG wheel chocks with U815 holders shall be furnished and shipped loose by the apparatus manufacturer.

Y\_\_N\_\_

### PROCESSES

The following processes shall be employed in the finishing of the apparatus:

Manual Surface preparation – All metal surfaces on all custom body and cabs shall be thoroughly cleaned and prepared for paint. Surfaces that shall not be painted include all chrome plated, polished stainless steel and bright aluminum tread plate. As required, weld seams and other areas shall be caulked to prevent water leaks or for appearance reasons. Each imperfection on the exterior metal surface shall be removed or filled and then sanded for a smooth flat appearance.

Chemical Cleaning and Treatment – All painted surfaces shall be washed with a chemical degreaser, cleaner and surface conditioner to allow for proper adherence of primer coat. Then they shall be washed with a neutralizer product. All products used are approved by paint supplier and applied under strict process control to meet performance requirements on corrosion prevention and chip resistance.

Primer/ Surface Coating for Top Coat application – a minimum of 2 coats of Epoxy based primer shall be applied to surfaces inside and outside of cabs and bodies and all other parts of apparatus that shall receive a Top color coat to achieve required corrosion protection. After that a minimum of 2 coats of sealer shall be applied over the primer surface. The overall thickness of the primer/sealer coat shall be between 3 to 8 mils wet. Once dried and cured all surfaces that shall receive a top coat shall be hand sanded to achieve a flat and smooth surface to meet gloss and other paint quality standards. All products used are approved by paint supplier and applied under strict process control to meet performance and appearance requirements according with the manufacturer's paint quality standard. The underside of the cab and body shall be finished with one coat of epoxy primer specifically designed for this application to prevent corrosion and provide chip resistance to typical paved road conditions.

Top Coat Application – Each Top Coat final color on the apparatus is applied using a two stage paint process. The unit shall be thoroughly hand cleaned to eliminate dust residues and to detect any imperfection in the surfaces to be painted. A fast drying 3.5 VOC polyurethane basecoat color shall be applied using a cross coat application technique. Additional coats may be applied as

# City of Waltham Fire Department

## Bidder Complies

required until the coat thickness reaches 2.0 to 6.0 mils wet and a full hide appearance. If a second color is required, proper masking shall be applied to the unit and the basecoat application process shall be repeated for the second color. A slow drying low VOC High Build clear coat shall be applied using a cross coat application technique until a minimum of 5.0 mils wet is achieved. The unit is then properly heated to assure flash and cure of the paint before leaving the paint booth. All products used are approved by paint supplier and applied under strict process control to meet performance and appearance requirements according the manufacturer's paint quality standard.

Each batch of color topcoat shall be tested for precise color match following paint supplier color matching process. A visual color match shall be checked prior to paint using customer approved paint chips.

The cab and body shall be primed and finish painted prior to installation on the chassis to ensure paint coverage in all areas including the difficult to reach places. The exterior and interior of the cab shall be finish painted before the doors are installed or any assembly is started to ensure a finish painted surface beneath all trim items.

Primer/ Surface Coating for Single Coat application – a minimum of 2 coats of Epoxy based primer shall be applied to all surfaces of the apparatus that shall receive a single color coat to achieve required corrosion protection. This is a wet coat process and it shall achieve a 3.0 to 8.0 mills wet thickness and complete coverage of all bare metal. All products used are approved by paint supplier and applied under strict process control to meet performance and appearance requirements according with the manufacturer's paint quality standard.

Single Coat Application – A minimum of 2 coats of direct gloss paint shall be applied over all primed surface to achieve corrosion protection and appearance in accordance with Sthe manufacturer's paint quality standard. This application shall be used for Gloss Black, Job Color and Color finishes in parts of the apparatus such as frame rails, outriggers, ladders and other aerial devices, suspension and other chassis parts, etc. as defined in the sales order.

Zolatone Coat Application – All areas to receive a Zolatone coat shall be primed following the primer/surface coating for top coat application. A high pressure coat of Zolatone paint shall be applied in a cross pattern technique to achieve smooth finished surface. A second low pressure coat of Zolatone paint shall be applied in a single pattern to achieve a textured appearance.

Zolatone Clear Coat Application – Starting with a completed and dry Zolatone coat application 2 to 3 coats of Zolatone clear coat shall be applied until a thickness of 5.0 mills wet is achieved.

Y\_\_N\_\_

### PAINTERS

All painters shall be paint supplier certified. They shall be re-certified periodically in order to keep up to current standards and procedures required by the coatings manufacturer. This certification is performed independently by the paint supplier.

Y\_\_N\_\_

### FACILITY

The finishing facility shall be certified independently by the paint supplier by meeting or exceeding its extensive and stringent requirements. The paint facility shall be audited quarterly by the paint supplier to ensure proper equipment, procedures and safety regulations are being used

**City of Waltham Fire Department**

**Bidder Complies**

and adhered to in addition to the controls implemented by the manufacturer to assure paint quality requirements are met in every job.

Y\_\_N\_\_

# City of Waltham Fire Department

Bidder Complies

## FRAME & UNDERCARRIAGE FINISH

The following items shall have an additional coat of gloss black paint applied over the primed surface as supplied by the component manufacturer. Single coat application process shall be used to apply Gloss Black direct gloss paint on the parts identified below:

- Chassis frame rails, cross members.
- Front bumper extension.
- Front & rear axles and suspension.
- Battery boxes.
- Fuel tank and fill tube.
- Air reservoir tanks.
- Pump module mounting brackets.
- Body mounting brackets.
- Steering gear box and steering link arm.
- Drive shafts.
- Front suction (when furnished).

The following items will be furnished with the finish as provided by their respective manufacturer.

- Engine, transmission and accessories.
- Exhaust system.
- Retarder (when furnished).
- PTO & hydraulic pump (when furnished).
- Cab lift cylinders & hydraulic pump.
- Shock absorbers.
- Fuel filter.
- Air drier and air cleaner.
- Electrical wiring and loom.
- Air brake lines, valves and mounting brackets.

Y\_\_N\_\_

## CAB INTERIOR PAINT FINISH

The inside of the cab shall be painted with black Zolatone paint following the Zolatone Coat application process.

- The following components shall be painted:
- Exposed interior surfaces of the cab structure
  - Exposed interior surfaces of the driver/officer/crew doors
  - All interior "Metal" access/wire covers of the cab
  - Head bumper brackets
  - Miscellaneous brackets, if present: camera mounts, non-recessed radios, charger covers.

Y\_\_N\_\_

## PAINT INSIDE OF CAB

The inside of the full tilt cab shall be clear coated following the Zolatone Clear Coat application process in the same components that received a Zolatone application.



# *City of Waltham Fire Department*

## Bidder Complies

### TWO TONE CAB PAINT

Y\_\_N\_\_

The cab shall be two tone painted with the paint break just below the windshield. The paint shall follow the Top Coat application process for two colors.

A decorative molding shall separate the two colors around the cab. The paint break shall be horizontal across the front of the cab above the wipers and taper down with a radius even with the outside corners of the grille.

### BODY PAINT, SINGLE COLOR

Y\_\_N\_\_

The body of the apparatus shall be painted to match the primary cab color. The paint shall follow the Top Coat application process for a single color.

### PUMP ENCLOSURE FINISH

Y\_\_N\_\_

The pump enclosure compartment interior, pump, intake and discharge valves, drains, drain lines, and foam system components, and all hard piping, shall have mill finish.

All exposed pipe (not including cut threads) at the rear of the truck or welded pre-connect assemblies at the front of the body shall be painted.

### ACORN NUTS

Y\_\_N\_\_

Acorn nuts shall be installed on all exposed screws and bolts in areas where personal injury may result and/or damage to equipment may occur. For further details, please refer to the enclosed standards document.

### CHEVRON STRIPING

Y\_\_N\_\_

All rear facing body panels, both outside the hose bed area and under the hose bed, shall be covered with 6" wide 3M Diamond Grade Reflective striping in an alternating chevron pattern. The stripes shall run at a 45 degree downward angle from the top center of the vehicle. If the rear compartment is recessed below the hosebed, the surfaces in the recessed area not on the rear face of the truck will be covered with aluminum treadplate. Aluminum treadplate is needed to protect these inner surfaces when hose is loaded or laid.

### LETTERING & STRIPING

Y\_\_N\_\_

Lettering and striping shall match, as closely as possible, the newest *Waltham Fire Department* apparatus.

Y\_\_N\_\_

# **City of Waltham Fire Department**

**Bidder Complies**

## **ELECTRONIC OPERATOR'S & PARTS MANUAL**

A binder shall be supplied that has CDs and paper documents as listed below. The CD's shall have a linked Navigation page for easy access to information.

Navigation Page:

- Instructions
- Operation Manuals
- Service & Maintenance
- Electrical Systems
- Parts
- Certificates & Warranties

The binder shall contain 2 duplicate CDs. Each CD shall have:

1. Operations & maintenance instructions for all items on the vehicle, except the engine. The CD shall also include instructions for the transmission and the pump, if applicable.
2. Electrical diagrams including charts illustrating the individual wire color, number code, and function.
3. Parts manuals keyed to OEM bill of materials code system for ease of locating replacement parts. An overall vehicle layout in 5 views and expanded drawings shall be provided to assist in part identification.
4. Certificates
5. Warranties

Printed documents shall include:

1. Operations & maintenance instructions for engine.
2. Certificates of independent test results.
3. Warranty documents.
4. Manufacturer's record of construction details and engine power curve.
5. Vehicle alignment report.

Y\_\_N\_\_

**City of Waltham Fire Department**

**Bidder Complies**

**MANUFACTURER'S LIMITED WARRANTY**

A limited one (1) year warranty for parts and labor shall be provided.

Y\_\_N\_\_

**CAB FIFTEEN YEAR STRUCTURAL LIMITED WARRANTY**

A cab limited fifteen (15) year structural warranty shall be provided.

Y\_\_N\_\_

**STAINLESS STEEL BODY FIFTEEN YEAR STRUCTURAL LIMITED WARRANTY**

A limited stainless steel body fifteen (15) year structural warranty shall be provided.

Y\_\_N\_\_

**CHASSIS FRAME RAIL STRUCTURAL LIMITED LIFETIME WARRANTY**

A limited lifetime frame rail structural warranty shall be provided.

Y\_\_N\_\_

**PAINT/CORROSION LIMITED WARRANTY**

A limited pro-rated paint six (6) year warranty shall be provided.

Y\_\_N\_\_

**PUMP PLUMBING LIMITED WARRANTY**

A limited stainless steel pump plumbing ten (10) year warranty shall be provided.

Y\_\_N\_\_

**City of Waltham Fire Department**

**Bidder Complies**

Y\_\_N\_\_

DELIVERY TIME

The completed apparatus shall be delivered to the City of Waltham within three-hundred (300) calendar days after receipt and proper execution of the contract or purchase order and execution of an order by the manufacturer. A penalty of \$200.00 per day for every day exceeding the required delivery time shall be imposed upon the manufacturer by the City of Waltham.

The penalty clause shall exclude delays due to war, fire, labor disputes, acts of God, governmental regulations, supplier issues and other causes beyond the manufacturer's reasonable control. Changes made by the City of Waltham after the preconstruction meeting may void the penalty clause.

# **Compliance**

**(Required Documents.)**

# Compliance

The compliance documents in this section must be completed, signed and returned **with your bid package**.

## Purchasing Department

City of Waltham

610 Main Street

Waltham, MA 02452

Failure to submit the completed documents will cause the disqualification of the proposal.

### Section Index

Check when Complete

- Non-collusion form and Tax Compliance form..... \_\_\_\_\_
- Corporation Identification Form..... \_\_\_\_\_
- Certificate of Vote Authorization..... \_\_\_\_\_
- Certificate of Insurance (showing all limits of WC &GL)..... \_\_\_\_\_
- Three (3) References..... \_\_\_\_\_
- 10% Bid Bond or Certified Check..... \_\_\_\_\_
- Debarment Certificate ..... \_\_\_\_\_
- Right-to-know Law..... \_\_\_\_\_

**Before the commencement of the Job, the contractor must provide to the above office:**

- Performance Bond for 100% of the contract value and naming the City of Waltham  
***(Letter must be included with your response)***

Your Company's Name: \_\_\_\_\_

Service or Product Bid \_\_\_\_\_

**NOTE:** Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

**NON-COLLUSION FORM AND TAX COMPLIANCE FORM**

**CERTIFICATE OF NON-COLLUSION**

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity or group of individuals. The undersigned certifies that no representations made by any City officials, employees, entity, or group of individuals other than the Purchasing Agent of the City of Waltham was relied upon in the making of this bid

\_\_\_\_\_, \_\_\_\_\_  
(Signature of person signing bid or proposal)      Date

\_\_\_\_\_  
(Name of business)

---

**TAX COMPLIANCE CERTIFICATION**

Pursuant to M.G.L. c. 62C, & 49A, I certify under the penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

\_\_\_\_\_, \_\_\_\_\_  
Signature of person submitting bid or proposal      Date

\_\_\_\_\_  
Name of business

**CERTIFICATE OF VOTE OF AUTHORIZATION**

Date:

I \_\_\_\_\_, Clerk of \_\_\_\_\_ hereby certify that at a meeting of the Board of Directors of said Corporation duly held on the \_\_\_\_\_ day of \_\_\_\_\_ at which time a quorum was present and voting throughout, the following vote was duly passed and is now in full force and effect:

VOTED: That \_\_\_\_\_ (*name*) is hereby authorized, directed and empowered for the name and on behalf of this Corporation to sign, seal with the corporate seal, execute, acknowledge and deliver all contracts and other obligations of this Corporation; the execution of any such contract to be valid and binding upon this Corporation for all purposes, and that this vote shall remain in full force and effect unless and until the same has been altered, amended or revoked by a subsequent vote of such directors and a certificate of such later vote attested by the Clerk of this Corporation.

I further certify that \_\_\_\_\_ is duly elected/appointed \_\_\_\_\_ of said corporation

SIGNED:

(Corporate Seal)

\_\_\_\_\_  
Clerk of the Corporation:

Print Name: \_\_\_\_\_

---

**COMMONWEALTH OF MASSACHUSETTS**

County of \_\_\_\_\_

Date:

Then personally appeared the above named and acknowledged the foregoing instrument to be their free act and deed before me, \_\_\_\_\_

Notary Public;

My Commission expires: \_\_\_\_\_



## CORPORATION IDENTIFICATION

The bidder for the information of the Awarding Authority furnishes the following information.

**If a Corporation:**

Incorporated in what state \_\_\_\_\_

President \_\_\_\_\_

Treasurer \_\_\_\_\_

Secretary \_\_\_\_\_

Federal ID Number \_\_\_\_\_

**If a foreign (out of State) Corporation** – Are you registered to do business in Massachusetts?

Yes \_\_\_\_\_, No \_\_\_\_\_

If you are selected for this work you are required under M.G.L.ch. 30S, 39L to obtain from the Secretary of State, Foreign Corp. Section, State House, Boston, a certificate stating that you Corporation is registered, and furnish said certificate to the Awarding Authority prior to the award.

**If a Partnership: (Name all partners)**

Name of partner \_\_\_\_\_

Residence \_\_\_\_\_

Name of partner \_\_\_\_\_

Residence \_\_\_\_\_

**If an Individual:**

Name \_\_\_\_\_

Residence \_\_\_\_\_

**If an Individual** doing business under a firm's name:

Name of Firm \_\_\_\_\_

Name of Individual \_\_\_\_\_

Business Address \_\_\_\_\_

Residence \_\_\_\_\_

Date \_\_\_\_\_

Name of Bidder \_\_\_\_\_

By \_\_\_\_\_

Signature

\_\_\_\_\_

Title

Business Address

(POST OFFICE BOX NUMBER NOT ACCEPTABLE)

City

State

Telephone Number

Today's Date

**PROVIDE THREE (3) SERVICE APPROPRIATE REFERENCES**

1. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

2. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

3. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

**NOTE**

**Failure to submit any of the required documents, in this or in other sections, with your bid response package will be cause for the disqualification of your company.**

## DEBARMENT CERTIFICATION

In connection with this bid and all procurement transactions, by signature thereon, the respondent certifies that neither the company nor its principals are suspended, debarred, proposed for debarment, declared ineligible, or voluntarily excluded from the award of contracts, procurement or non procurement programs from the Commonwealth of Massachusetts, the US Federal Government and /or the City of Waltham. "Principals" means officers, directors, owners, partners and persons having primary interest, management or supervisory responsibilities with the business entity. Vendors shall provide immediate written notification to the Purchasing Agent of the City of Waltham at any time during the period of the contract of prior to the contract award if the vendor learns of any changed condition with regards to the debarment of the company or its officers. This certification is a material representation of fact upon which reliance will be placed when making the business award. If at any time it is determined that the vendor knowingly misrepresented this certification, in addition to other legal remedies available to the city of Waltham, the contract will be cancelled and the award revoked.

---

Company Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_, State \_\_\_\_\_, Zip Code \_\_\_\_\_

Phone Number (\_\_\_\_) \_\_\_\_\_

E-Mail Address \_\_\_\_\_

Signed by Authorized Company Representative:

\_\_\_\_\_

Print name \_\_\_\_\_

Date \_\_\_\_\_

# **BID PRICE FORM**

**Place in a separate sealed envelope along with the bid bond. Mark the outside of the sealed envelope: PRICE PROPOSAL, FIRE PUMPER and the Name of your company**

My company proposes to deliver, as specified in the RFP, a **Triple Combination Pumper Apparatus on a Custom Chassis with a Stainless Steel Cab and Body** for the not to exceed price of:

\$ \_\_\_\_\_

And in words:

---

---

---

**Company:** \_\_\_\_\_

**Authorized Signature:** \_\_\_\_\_

**Print Name:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Date:** \_\_\_\_\_