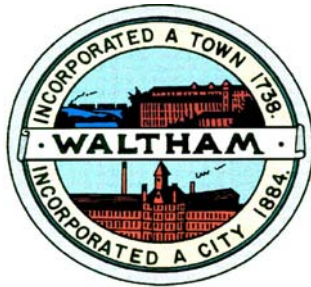


The City of Waltham Fire Department



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

**Arial Apparatus on a Custom Chassis with
a Stainless Steel Cab and Body**

The bid opening will be held: 1:00 PM, Tuesday Novemeber 15, 2016

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

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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:

**Arial 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,

1:00 PM, Tuesday November 15, 2016

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

BIDS MUST BE SIGNED AND ENCLOSED IN A SEALED ENVELOPE AND MARKED:
BID FOR: Fire Department, Aerial

A 5% 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 an Arial Apparatus on a Custom Chassis with a Stainless Steel Cab and Body

AGREEMENT

CITY OF WALTHAM

ARTICLE 1. This agreement, made this _____ day of _____, 2016 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. 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

City of Waltham Purchasing Department

Bidder Complies

INTENT OF SPECIFICATIONS

It is the intent of these specifications to cover the design, manufacture and delivery to the *Waltham Fire Department* of a complete fire apparatus equipped as specified herein. These specifications include the general requirements of design, material content and construction as well as certain equipment that shall be provided by the contractor. Not all details of the design, material content and construction of the fire apparatus are herein specified. Any such design, material content and construction not specified herein are left to the sole discretion of the seller contractor.

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 *City of Waltham*. 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 the *City of Waltham’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 Purchasing 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 *City of Waltham* 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 purchaser's definition of “single source manufacturer”. There shall be no exceptions to these conditions.

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.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

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 *Waltham Fire Department's* bid specification. In no case shall a bidder submit a copy of the *City of Waltham'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 City of Waltham's specifications. Listing any requirement contained in the specifications as an option at additional cost shall automatically be cause for bid rejection.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

EXCEPTION TO SPECIFICATIONS

Any exception or variation in construction, performance, test or items of equipment between the *City of Waltham'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 *City of Waltham* 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 *City of Waltham*.

Y__N__

BID SELECTION/AWARD CRITERIA

The *City of Waltham* 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 purchaser. The *City of Waltham* 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 *City of Waltham'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__

City of Waltham Purchasing Department

Bidder Complies

COMPLETION DATE

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.
Delivery shall be no later than July 30th 2017.

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 drawings will also be considered non-compliant and non-responsive.

Y__N__

BID BONDS

Each bidder shall supply with their bid proposal a bid bond in the amount of 5% 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 or the aerial device shall provide a warranty that is issued jointly and severally by, and signed by, both the bidder and both the aerial and chassis manufacturers. Bidders who build their own chassis and aerial device shall provide a warranty issued in their name only.

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

City of Waltham Purchasing Department

Bidder Complies

Bidders who assemble aerial devices but do not manufacture the major components such as the turntable or ladder sections must also provide the warranty and warranty bond as described above except the subcontractor for these components must also be one of the signatories of the warranty and be named a co-principal of the warranty bond.

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 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

One (1) "Pre-Construction" conference trip for two (2) representatives of the **Waltham Fire Department** shall be included in the bid. The conference shall be held at a company facility or an authorized representative's facility of the successful bidder, during normal business hours, Monday - Friday. All cost of transportation, meals and lodging shall be included. 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__

City of Waltham Purchasing Department

Bidder Complies

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, 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 two (2) representatives of the *Waltham Fire Department* shall be included in the bid. The inspection shall take place at the successful bidder's company facility or an authorized representative's facility 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* 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 a road test of the apparatus. 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.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

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.

A factory field service technician shall provide instruction to the *Waltham Fire Department* regarding the aerial device. The familiarization period shall consist of up to four (4) daytime sessions over a period of four (4) consecutive days during the normal work week (Monday - Friday). The number, length and time of the sessions may vary due to the nature of the apparatus and availability of attendees and must be approved by the factory 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__

DOCUMENTATION - NFPA REQUIREMENTS

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

Y__N__

City of Waltham Purchasing Department

Bidder Complies

GENERAL DESIGN REQUIREMENTS

The design and layout of the apparatus specified herein has been carefully selected to meet the needs of the **Waltham Fire Department**. 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 seat belted 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 **Waltham, Massachusetts**.

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 Purchasing Department

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__

WALTHAM FIRE DEPARTMENT DECLARED EQUIPMENT WEIGHT

The customer declared equipment weight shall be from 2000 to 2500 pounds. This weight shall be evenly distributed.

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.

City of Waltham Purchasing Department

Bidder Complies

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) - AWS014.4-77 Classification and Application of Welded Joints for Machinery and Equipment
- 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__

DRIVELINE VIBRATION TESTING

The apparatus shall be tested for the level of vibration on power train and drive line components such as the engine, transmission, drive shafts, axles and tires, after construction. The test shall be performed using dedicated sensing devices and software on a pre-defined test route and under various regular driving conditions, including speeds, acceleration and braking. The apparatus shall have all major components and most features completed at the time of the test. The apparatus shall be loaded to simulate an in-service condition.

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__

City of Waltham Purchasing Department

Bidder Complies

TOWER TEST AND CERTIFICATION

The tower shall be third party tested at the manufacturer's facility and shall conform to NFPA requirements and standards. Copies of all tests 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.

Y__N__

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__

City of Waltham Purchasing Department

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 237.00 inches.

Y__N__

SEATING CAPACITY

The safe seating capacity of the cab for properly belted passengers shall be six (6).

Y__N__

APPROACH - DEPARTURE ANGLES

An angle of approach of at least 12 degrees shall be maintained at the front and an and an angle of departure of at least 10.5 degrees at the rear of the vehicle when it is loaded to the estimated in-service weight, as defined by NFPA 1901.

Y__N__

GROSS VEHICLE WEIGHT RATINGS

Front Vehicle Weight Rating shall be 22,800 pounds.

Rear Vehicle Weight Rating shall be 58,000 pounds.

Gross Vehicle Weight Rating shall be 80,800 pounds.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

FRAME

The frame is to be specifically designed and produced for the vehicle as specified. Each hole made in the frame rails must be used for a specific chassis component and any holes for non-required options are not acceptable.

The chassis frame shall be built using two variable section steel channels and a minimum of six (6) formed steel cross members. The frame rails shall be 120,000 psi heat treated steel alloy with tapering measurements and continuous top and bottom flanges. The cross members shall be of heavy duty, fabricated, all-welded design, made out of a minimum of 50,000 psi material.

A full length "C" straight channel frame inner liner with top and bottom flanges shall be provided.

At the narrow rail section, each rail shall have a combined minimum section modulus of 39.44 and a combined minimum resisting bending moment of 4,413,538 inch pounds.

At the deep rail section, each rail shall have a maximum section modulus of 46.26 at the largest cross section, which shall provide a resisting bending moment of 5,551,200 inch pounds.

The frame rails and cross members shall be assembled using 5/8" flange head, grade eight bolts and "Spiralock®" flanged nuts. Spiralock® nuts shall be used exclusively in the frame assembly for mounting spring hangers, steering gear, engine, transmission, etc. to maintain constant torque tension and prevent loosening from vibration. Spiralock® nuts shall provide even thread load over the bolt, increasing fatigue strength and clamping torque.

Frame rails less than or equal to 480" in length shall receive a duo-coat primer: an E-coat followed by a powder coating. This duo-coat process meets 1000 hours of salt spray testing per ASTM B117 test procedure. Frame rails greater than 480" in length shall be powder coated only. The inside of the rails shall be hand re-sprayed to insure coverage. This process meets 240 hours of salt spray testing per ASTM B117 test procedure.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

BUMPER

A heavy duty 12.25" high 1/4" thick painted steel bumper shall be mounted to the front of the chassis. It shall be fabricated in the factory of the bidder. Bumper shall be channel shaped with 2-1/4" flanges.

As part of the bumper extension, a second 1/4" thick by 9.44" high formed channel with 2" flanges shall be provided directly behind the full width 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. A 3/16" aluminum tread plate gravel pan (deck) contoured to fit just below the front face of the cab and just below the upper bumper flange shall be provided. Sides (between bumper and cab corners) of the deck shall be boxed in and tapered up to meet bottom of front cab face. Pan shall not be fastened to the top flange of the bumper.

Y__N__

18" BUMPER EXTENSION

A bumper extension shall be installed at the front of the cab. The front of the bumper shall be approximately 18" from the front face of the cab. A gravel pan made of 3/16" aluminum tread plate 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. The bumper extensions shall be constructed with a heavy duty structure so as to allow the gravel pan to support weight and additional options.

Y__N__

FAMA26 NO-STEP SIGN

In accordance with NFPA 1901 chapter 15.7.1.6, a FAMA26 "No-Step" sign shall be attached to the top of the gravel pan. The sign reads: "Fall Hazard-Railings NOT provided. Surface may be slippery - Not intended for stepping, standing or walking. Fall will injure or kill".

Y__N__

City of Waltham Purchasing Department

Bidder Complies

FRONT TOW EYES

Two (2) painted "cut plate" type tow eyes shall be furnished. They shall be installed through the top of the aluminum tread plate "gravel" pan, directly 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 EYES

Two (2) rear tow eyes, bolted to the frame rails, one (1) each side shall be provided. The eyes shall be fabricated of 1" heavy duty steel plate, with a 3" diameter opening designed so that stress will be applied to each chassis frame rail, when utilized.

Y__N__

STEERING

A heavy duty 18,000 lb. capacity 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

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

Y__N__

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 at the manufacturer's facility.

The completed apparatus should be rechecked for proper alignment after a 100 mile road test has been completed at the factory.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

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
- Manual drain valves on all 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 stainless braided Teflon hose and/or copper tubing 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__

ADDITIONAL AIR RESERVOIR

One (1) additional 1770 cubic inch air reservoir(s) shall be provided and installed. Each extra reservoir shall be isolated and be plumbed with a pressure protection valve on the reservoir supply side.

Tank shall be used for: Air horns

Y__N__

WET AIR RESERVOIR DRAIN CONTROL

A cable controlled drain valve shall be provided on the wet tank. The pull cable shall be extended to the side of the truck with a loop provided at its end.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

AIR RESERVOIR DRAIN CONTROL

A cable controlled drain valve shall be provided on each air reservoir. The pull cable shall be extended to the side of the truck with a loop provided at its end.

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__

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. A plug shall be supplied in the inlet. Waltham Fire Department shall supply their own air fitting.

Location shall be on the front of the driver's step well.

Y__N__

AUXILIARY AIR OUTLET

There shall be a 1/4" female air outlet with Schrader air hose fitting mounted on the left pump panel with a 1/4" valve. The outlet shall be connected to one of the vehicle's air reservoirs and shall provide an air supply for non-emergency uses. A 1/4 turn shutoff valve shall be located adjacent to the outlet.

Location shall be on the front of the driver's step well.

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__

City of Waltham Purchasing Department

Bidder Complies

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__

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 heavy-duty telescoping shock absorbers shall also be provided on the front axle.

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__

AUXILIARY AIR APPLIED FRONT AXLE PARKING BRAKE

An auxiliary air applied front axle parking brake shall be supplied with a separate control switch and properly labeled indicator light in the cab. This front parking brake will only be able to be activated when the parking brake for the rear axle is set.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

REAR AXLE

The rear tandem drive axle shall be a Meritor model RT-58-185 with a capacity of 58,000 pounds at the hub. Each rear axle shall include 16 1/2" x 7" S-Cam brakes with dust shields and automatic slack adjusters. Stroke indicators shall be incorporated to provide a visual indicator of brake wear.

An inter-axle differential control switch shall be provided on the cab dash, easily accessible from the driver's seating position.

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.

All axle applications must be certified by the axle manufacturer.

Y__N__

ROAD SPEED

Per NFPA, the maximum top road speed shall be 60 mph at the governed engine RPM.

Y__N__

ANTI-LOCK BRAKING SYSTEM (ABS)

The vehicle shall be equipped with a WABCO 6S6M anti-lock braking system (ABS). The ABS shall provide six (6) channel anti-lock-up braking control on the (2) front and (4) 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__

City of Waltham Purchasing Department

Bidder Complies

WARRANTY

A three (3) year or 300,000 miles parts and labor warranty shall be provided by Meritor WABCO Vehicle Control Systems for the Anti-Lock Braking System (ABS).

Y__N__

INTER-AXLE DIFFERENTIAL LOCK

The rear tandem axle set shall be equipped with an air actuated primary traction device that allows for speed differences between the forward and rear tandem axles while providing equal pulling power from each axle. When disengaged, one wheel set of the forward drive axle and the opposite side wheel set of the rear drive axle shall operate in drive action to minimize wear on drive components. When the IAD lock is engaged, both wheel sets of each tandem axle provides drive action and does so until one side encounters slip or the vehicle is turning, thereby maximizing traction without diminishing turn radius.

A dash mounted rocker switch shall engage and disengage the IAD lock. While the IAD lock may be engaged or disengaged at rest or at road speed, it should not be engaged whenever any drive wheel is slipping.

It is understood that the IAD should be unlocked for normal dry road condition operation to avoid premature ring gear, clutch and tire wear.

Y__N__

WARRANTY

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

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 centrally mounted pitch and yaw 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 Purchasing 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__

SKF LUBRICATION SYSTEM

The SKF automatic lubrication system shall provide automatic grease applications 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.

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.

On the front axle, the following items shall be lubricated, as standard: kingpins, drag link, tie rod, spring and shackle pins and the steering assist cylinder. The following items shall also be lubricated, if present: s-cam brakes and slack adjusters.

On the rear axles, if present, the following items shall be lubricated: s-cam brakes.

Y__N__

City of Waltham Purchasing Department

ONSPOT AUTOMATIC SNOW CHAINS

Onspot automatic snow chains shall be provided in front of the rear axle of the vehicle. An electric switch shall be mounted in the cab to provide 12 volts to an air solenoid mounted on the vehicles frame. Compressed air to the solenoid from the vehicle's onboard air system shall activate the chains. When the chains are deactivated, the solenoid exhausts the air provided to the chain units and self-contained return springs bring the chain wheels back to their nested position.

Y__N__

REAR SUSPENSION, HENDRICKSON HN-582, TANDEM - 58,000#

The rear suspension shall be a Hendrickson HN-582. It shall include a VariRate rubber spring system that shall increase stability and unloaded ride quality. It shall be virtually maintenance free with no center bushings.

Y__N__

FRONT TIRES

The two (2) front tires shall be Continental 425/65R22.5, HTC1, load range "L", with a nominal rating of 11,400 pounds at a top speed of 68 mph.

Y__N__

REAR TIRES

The eight (8) rear tires shall be Continental 315/80R22.5, HDR2, load range "L", with a nominal rating of 7,385 pounds at a top speed of 81 mph.

Y__N__

WHEELS

Wheels shall be Alcoa aluminum disc type and hub piloted. The wheels shall be coated with Durabrite. 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__

City of Waltham Purchasing Department

Bidder Complies

TIRE PRESSURE INDICATORS

Tires shall have non-pressure indicators installed for shipment.

Accu-Pressure Heavy Duty Safety Caps shall be provided and shipped loose. This valve stem inflation pressure sensitive monitor 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 under inflated.

All inner wheels shall be equipped with a valve stem extension that shall allow the inner wheel to be filled without removing the outer wheel.

Y__N__

TIRE BALANCE

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

Y__N__

City of Waltham Purchasing Department

Bidder Complies

ENGINE

The chassis shall be powered by an EPA13/GHG17 certified and compliant Cummins ISX12 diesel engine, as described below:

Model	ISX12
Number of Cylinders	Six
Bore and Stroke	5.11 x 5.91 in
Displacement Liter (Cu. In.)	11.9 (729)
Rated BHP	500 @ 1800 RPM
Torque	1645 ft.lb. @ 1200 RPM
Governed RPM	2100
Oil Capacity / Type	12 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 – 32”, 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
- 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.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

ENGINE AND CHARGED AIR COOLING SYSTEMS

A serpentine core type radiator with continuous louvered copper fin design shall be provided. 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 cross flow design with cast aluminum side tanks, horizontal inlet and outlet at top and aluminum louvered serpentine external air fins. Plastic tanks shall not be acceptable, no exceptions. Cooler tubers shall also be constructed of aluminum and have internal fins that eliminate laminar airflow.

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 and charger cooler shall be mounted to the chassis stub. Fabricated mounting bracket for the fans 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 tightening the tip clearance. This mounting design eliminates engine fan and radiator shroud contact due to engine torque movement and promotes more efficient airflow. The radiator and charger cooler 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 chassis 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__

FAN CLUTCH

A 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__

City of Waltham Purchasing Department

Bidder Complies

FUEL WATER SEPARATOR WITH ALARM & HEATER

A Racor 490 spin-on 10 micron filter with fuel water separator with water sensor alarm and heater shall be provided.

Y__N__

ENGINE STARTER

A Denso, 12 volt, 5.0 kW gear reduction starter shall be installed.

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__

WARRANTY

Cummins provides a 5 year or 100,000 mile warranty on the ISX12 engine.

Y__N__

ENGINE FUEL COOLER

An engine fuel cooler shall be provided on the apparatus. It shall cool the returning fuel from the engine.

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 clamps.

Y__N__

SKID PLATE

A radiator skid plate shall be provided to protect the radiator from debris. The skid plate shall cover the lower radiator tank and shall be painted to match the frame rails.

Y__N__

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Bidder Complies

TRANSMISSION

An Allison, Model 4000 - 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:	600 hp
Maximum gross input torque:	1850 ft.lb.
Input speed range:	1700 to 2300 rpm
Direct gear lock-up:	4 th @ 1.00 to 1.00
Overdrive gear and ratio:	5 th @ 0.74 to 1.00

Gear ratios shall be as follows:

1 st	3.51 to 1
2 nd	1.91 to 1
3 rd	1.43 to 1
4 th	1.00 to 1
5 th	0.74 to 1
6 th	0.64 to 1
Rev	-4.80 to 1

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

Y__N__

City of Waltham Purchasing Department

Bidder Complies

TRANSMISSION FLUID

The Allison 4000-EVS transmission shall be delivered from the factory with a synthetic SAE standard ATF.

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__

WARRANTY

Allison provides a 5 year warranty on the EVS transmissions.

Y__N__

TRANSMISSION PROGRAMMING

The transmission shall be programmed as a 6-speed with 6th gear (second overdrive) selected by mode button only.

Y__N__

DRIVELINE

Drivelines shall be built with heavy-duty metal tubes and utilize Spicer 1810 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 is to be provided in each shaft assembly.

Y__N__

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FUEL SYSTEM

The vehicle shall be furnished with a 85 gallon fuel tank mounted behind the rear axle and just below the frame rails using steel rods and cradle. The tank shall be constructed of stainless steel and equipped with a swash partition and vent. The fuel tank shall meet all FHWA requirements and all DOT and FMVSS regulations for rollover protection. A 2" diameter fill inlet shall be provided. The 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 fuel fill inlet shall be located on the left (drivers) side of the apparatus in the step well cavity. It shall be concealed behind a door. The inside of the door shall be marked "ULTRA LOW SULFUR 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.

The fuel door shall be constructed of stainless steel and shall have a brushed finish. It shall be hinged on the left side. A spring loaded device with brass roller shall be provided to hold the door in the open or closed position. A black pull knob shall be installed on the door for opening and closing it.

Y__N__

FUEL LINE SHUTOFF VALVE

A fuel line shutoff valve shall be provided near the tank to prevent fuel from draining back while changing fuel filters.

Fuel line shutoff valve shall be placed in frame rail area forward of the rear axle on the driver side in an accessible area from underneath the vehicle.

A black background white lettered chrome trimmed label to be installed beneath the compartment forward of the rear wheels in the rub rail and in-line with the valve placement.

Label shall read:

FUEL SHUTOFF
IN FRAMERAIL

Y__N__

ALTERNATOR

A 430 amp Delco alternator, model 55SI, shall be provided.

Y__N__

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AIR CLEANER

A Donaldson® PowerCore® 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__

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__

EXHAUST

A SCR chamber shall be installed in 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.

Y__N__

DPF REGENERATION PROCESS

NFPA 12.2.6.7.1 The regeneration process shall be activated by two methods:

- 1) Automatically by the engine system but only when the transmission is in gear and the speedometer indicates a speed above 5 mph (8km/hr) whether the apparatus is in motion or is operating in stationary pump mode with an engine rpm sufficient to register 5 mph (8 km/hr) on the speedometer.
- 2) Manually when initiated by activation of a switch located in the driver's area of the driving compartment.

There shall also be an inhibit switch placed near the driver to inhibit an automatic reburn.

Y__N__

DEF

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.

One (1) tank full of urea solution shall be required for every 500 gallons of diesel fluid.

Y__N__

City of Waltham Purchasing Department

DEF ACCESS

The DEF shall be filled directly by tilting the cab.

Y__N__

TAILPIPE EXTENSION

The tailpipe shall be provided to accommodate a Plymovent exhaust evacuation system. The tailpipe shall 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. The tailpipe mounting shall be straight out from the body.

It is understood that the 2013 engine exhausts cannot be connected to exhaust evacuation systems when the Diesel Oxidation Catalyst and Diesel Particulate Filter on the engine are regenerating.

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__

TELMA AD72-45 RETARDER

A Telma AD72-45 retarder shall 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. The Telma relay box shall be on the driver's side, inside the frame between the cab and the rear axle. A momentary on/off switch with indicator light and display message shall be provided. The retarder shall be reset with the ignition or by pressing the switch a second time.

Programming shall be: First Two Stages Off Throttle

Y__N__

City of Waltham Purchasing Department

Bidder Complies

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's. A switch located inside the cab convenient to the driver shall be provided for this system.

Y__N__

LUBRICATION DECAL

A decal shall be installed that specifies the quantity and type of the following fluids used in the vehicle and tire information:

- Engine oil
- Engine coolant
- Chassis transmission fluid
- Pump transmission lubrication fluid
- Pump priming system fluid, if applicable
- Drive axle(s) lubrication fluid
- Air condition refrigerant
- Air conditioning lubrication fluid
- Power steering fluid
- Cab tilt mechanism fluid
- Transfer case fluid
- Equipment rack fluid, if applicable
- CAFS air compressor system lubricant, if applicable
- Generator system lubricant, if applicable
- Front tire cold pressure
- Rear tire cold pressure
- Maximum tire speed ratings

The lubrication decal shall be installed on the interior face of the driver's door, near the hinge and below the window controls.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

STAINLESS STEEL FULL TILT CAB

The cab shall be designed specifically for the fire service and shall provide roll cage strength and safety. The stainless steel cab shall be made in the factory of the bidder and must utilize the bidder's top-of-the-line technology and manufacturing techniques. The entire cab shall tilt forward 45 degrees for engine access. No plastic, fiberglass, or aluminum 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 131" 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" from the step well walls at front, rear and side to prevent trapping of dirt and other residue. Entrance steps shall be made of expanded aluminum grating.

Y__N__

CAB MOUNTING

A four point isolated mounting system shall be provided. The cab mounting system shall consist of two (2) front pivot mounts fabricated of steel and two (2) rear cab mounts that are isolated from the chassis frame by center bonded rubber isolators. 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__

CUSTOM CAB DESIGN AND CONSTRUCTION

SUB-FRAME

The sub-frame shall be stainless steel plate and tube welded to 3" x 4" rectangular structural steel tubes, with the 4" stainless steel tubing used in a vertical orientation. All joints shall have continuous welds; stitch welding shall not be acceptable. The sub-frame shall be designed as a continuous 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__

City of Waltham Purchasing Department

Bidder Complies

CAB FLOORS

All floor components shall be welded directly to the sub-frame. The floor shall be constructed of 50,000 psi stainless steel.

Y__N__

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 seat belt mounts shall use weld nuts to eliminate pull outs and stripped threads. The outer skins shall not be an integral structural member. One inch of insulating foam shall be located between the exterior and interior back walls.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

ROOF ASSEMBLY

The perimeter structure of the safety cage roof assembly shall be tied by repeating 1.25" stainless steel tubing to maximize loading potential 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. There shall be 1.25" of insulating foam between the exterior roof and interior ceiling.

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.

Crew cab door shall be set to open 90 degrees.

Y__N__

INNER DOOR PANELS – BLACK LINE-X (4)

The upper inside bolt-on panel on each cab door shall be removable and shall be constructed of aluminum covered with black LINE-X.

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 Purchasing 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 left-hand side of the cab. The receptacle shall have a spring-loaded weatherproof cover.

Y__N__

ENTIRE CAB FLOOR

The entire cab floor shall be covered with a black mat that functions as a sound barrier. The mat shall have a pebble textured heavy-duty wear surface and be laminated to a foam underlay. The mat shall be composed of a vinyl-nitrile blend, which is the base material used in IV tubes and blood bags; it is not affected by blood or other body fluids.

Y__N__

ATP OVERLAY ON BACK OF CAB

An aluminum tread plate overlay shall be provided over the entire exterior rear wall of the cab.

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__

City of Waltham Purchasing Department

Bidder Complies

FRONT GRILLE SCRIPT NAMEPLATE

A19.43" long manufacturer's nameplate, fabricated from AISI 304 stainless steel, with mirror finish, shall be located on the lower front engine cooling intake grille of the cab.

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__

AUXILIARY ENTRANCE STEPS

Auxiliary cab entrance steps shall be provided at each cab door opening, below the cab, to reduce the cab entrance step height to approximately 12 inches.

Y__N__

INTERMEDIATE CAB STEPS

Four (4) stationary steps shall be provided, one at each cab door. The steps shall be approximately 12.0" long, have a 9.0" radius, and be located to the front of each cab step well. The steps shall be constructed of aluminum grating.

Y__N__

City of Waltham Purchasing 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.

Doors shall be hinged at the front.

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 SCUFF PLATES

A brushed stainless steel scuff plate 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 scuff plate 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 SCUFF PLATES

Aluminum tread plate scuff plates shall be provided on the inside of two (2) cab side access door(s) to protect the painted finish.

Y__N__

CAB ACCESS SCBA BRACKET

A metal bracket, painted gloss black, shall be secured to the side of the engine tunnel just aft of the driver's seat. Attached to this bracket shall be a Zico ULLH SCBA bracket with a CRS strap.

Y__N__

FRONT ALUMINUM INNER LINERS

Semi-circular inner liners 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 inner liner 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__

City of Waltham Purchasing Department

Bidder Complies

FRONT FENDERETTE

Polished stainless steel fenderettes shall be installed in the front wheel openings. They shall be sufficiently wide to completely cover the front 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__

FRONT AND REAR MUD FLAPS

Heavy duty mud flaps with manufacturer's 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__

CROSSOVER MIRROR

An approximately 8" diameter mirror with polished stainless steel housing shall be provided on the right front of the cab above the windshield. The mirror shall be convex. The bracket shall be located in the outboard position.

Y__N__

MIRRORS

Two (2) Rosco Accustyle heated mirrors with remote shall be installed on the cab doors, one on each side of the cab. The flat upper mirror shall measure 7" x 14" and the lower convex section shall measure 6.5" x 6". The mirrors shall have a chrome finish.

Y__N__

REAR MIRROR

A K-10, 10" stainless steel eyeball mirror shall be installed on the outside of the rear wall on the curb side of the cab for viewing of mid-body outrigger on that side.

Y__N__

COWL MOUNTED MIRROR

One (1) FDNY Style cowl mounted convex mirror shall be mounted to the Officer's side front cab cowl.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

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__

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

Electric power 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. A 12 volt electric motor with gear reduction box to slow driven gear rpm and increase power transmission shall be provided. Individual switches shall be provided so that the driver controls the left side forward door window, officer the right side and crew occupants the rear.

Y__N__

DRIVER'S DOOR GLASS SWITCH

City of Waltham Purchasing Department

Bidder Complies

An individual switch for the driver's electric door window shall be provided on the driver's dash.

Aftermarket add-on type electric power window conversion devices like the type that replaces the crank arm will not be acceptable.

Y__N__

OFFICER'S DOOR GLASS SWITCH

An individual switch for the officer's electric door window shall be provided on the officer's dash.

Aftermarket add-on type electric power window conversion devices like the type that replaces the crank arm will not be acceptable.

Y__N__

CREW DOOR GLASS SWITCHES

An individual switch for the crew electric door windows shall be provided on the crew doors.

Aftermarket add-on type electric power window conversion devices like the type that replaces the crank arm will not be acceptable.

Y__N__

ADDITIONAL SWITCHES

Three (3) additional switches shall be provided to allow driver to operate all power cab door windows.

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__

INTERIOR CREW CAB DOOR WINDOW GUARDS

A protective, stainless steel bar shall be placed across each side crew cab door window at its horizontal centerline to protect the windows from damage from fire fighters moving about with air packs on.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

CAB DOOR HINGES

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

Y__N__

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__

REAR CAB HANDRAIL

One (1) 18" handrail shall be installed on the rear of the cab on the driver's side at a 30 degree angle to provide a 3-point stance for accessing the turntable. The handrail 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

Y__N__

ADDITIONAL GRAB RAIL(S)

Two (2) 8" knurled aluminum grab rail(s) shall be provided and installed on/in the cab.

Handrail(s) shall be located on the front face of the cab, below the windshields, one (1) each side.

Y__N__

REAR CAB FOLDING STEP

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Bidder Complies

One large chrome plated folding step with a minimum of 42 square inches of serrated non-skid surface per step shall be installed on the rear of the cab on the driver's side to assist in accessing the turntable. Each step shall be tested to withstand a minimum of 2000 pounds 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__

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__

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__

City of Waltham Purchasing Department

Bidder Complies

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 tread plate 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.

Y__N__

PAC TRAC ON CAB BACK WALL

A Pac Trac 7000 assembly shall be installed on the interior rear cab wall, on both the driver's side and the officer's side outboard positions. The Pac Trac on each side shall measure approximately 20" wide overall by 51.75" high.

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 black 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__

City of Waltham Purchasing Department

Bidder Complies

ACCESSORY MOUNTING STRUCTURE

The top portion of the engine enclosure shall have a 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__

BLACK LINE-X FOR CAB DASH

The cab dash shall be sprayed with black 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__

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Bidder Complies

OVERHEAD DASH

An overhead drop down dash shall be provided with a full length piano hinge and four (4) 1/4 turn latches. This dash shall incorporate areas designed to hold emergency switching and selected options such as control heads and indicators that shall be accessible to the driver and officer. The overhead dash shall have a black LINE-X finish.

Y__N__

LIMITING STRAP

A strap shall be provided to limit the extent of opening range for the overhead power distribution area (overhead dash) access. This 2" wide, retention strap shall prevent the contact between the upper, overhead, power distribution access housing and the lower, center, dash housing. An approximate clearance of 3 inches shall be maintained and retained by the strap. The strap shall be fastened by footman loops between the cab roof structure and hinged upper power distribution housing.

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 3.00" high at the rear.

Y__N__

SUN VISORS

Two (2) approximately 8" x 28" dark smoke colored transparent polycarbonate Lexan 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__

CUP HOLDER

Four (4) cup holders with a black Line-X finish shall be installed in the cab. The location of the cup shall be determined at the Pre-Construction Conference.

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__

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Bidder Complies

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. This seat shall have 5" horizontal adjustment.

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

Y__N__

OFFICER'S SEAT

An H.O. Bostrom Tanker 450 SCBA seat shall be provided for the officer. This seat shall have 5" horizontal adjustment.

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 approximately 15.5" wide x 10.5" high x 17" deep, front to back at the top and 8.5" deep front to back at the bottom. The compartment shall have a front opening door, measuring approximately 13.5" wide x 8" high.

One (1) NFPA compliant H. O. Bostrom SecureAll™ universal SCBA bracket shall be installed in the seat(s).

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.

Two (2) NFPA compliant H. O. Bostrom SecureAll™ universal SCBA bracket shall be installed in the seat(s).

Y__N__

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Bidder Complies

REAR SEATING

The rear crew cab section shall contain two (2) forward facing seats. The two forward facing seats shall be H.O. Bostrom Sierra high back flip-up seats installed on the rear wall of the cab directly behind the engine enclosure. The seating area shall allow maximum room for fire fighters in full turn out gear.

Y__N__

SEAT BELT

The driver's seat shall have a 3-point vertically adjustable D Loop style shoulder harness, to meet FMVSS and NFPA 1901 current edition requirements. The seat belt shall be red in color.

Y__N__

SEAT BELT

The officer's seat shall have a 3-point vertically adjustable D Loop style shoulder harness, to meet FMVSS and NFPA 1901 current edition requirements. The seat belt shall be red in color.

Y__N__

SEAT BELTS

The two (2) outboard, rear facing seat(s) shall have a 3-point horizontally adjustable D Loop style shoulder harness, to meet FMVSS and NFPA 1901 current edition requirements. The seat belts shall be red in color.

Y__N__

SEAT BELTS

The two (2) inboard, forward facing seat(s) shall have a 3-point vertically adjustable D Loop style shoulder harness, to meet FMVSS and NFPA 1901 current edition requirements. The seat belts shall be red in color.

An IMMI ReadyReach shall be attached to each of the inboard forward facing seat belts. The ReadyReach positions the seat belt forward making the seat belt easier to reach.

Y__N__

SEAT UPHOLSTERY

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

Y__N__

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INTERIOR DÉCOR

The following components shall be black in color:

- Headliner
- Head bumper over crew doors
- Back liner, 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
- Back liner trim
- Crew heater, complete assembly
- Electrical panels
- Plastic snap plugs for wire access holes
- Door seals
- Seat risers
- Under seat compartments
- Seat belt retractor cover.
- Rubber covered grab handles
- Map desk, if present

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__

EMBROIDER CUSTOMER LOGO TO SEAT HEAD REST(S)

A customer supplied embroidery design shall be sewn into six (6) seat head rest(s) in place of the manufacturer's logo.

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__

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CONDENSER COVER

The air conditioning condenser assembly shall have an additional cover and / or covers to protect the Freon hoses, dryer, valves, switches and / or solenoids above the cab roof and connected to the condenser body.

The main condenser body shall have one fabricated cover with openings for, and above, the condenser fans. The main condenser body cover shall be approximately 7.5" high x 46.5" long x 26.25" wide and fabricated from 1/8" aluminum tread plate.

Additional covers, formed from 1/8" aluminum tread plate, shall be provided for hose and harness routing above the cab roof, as necessary.

Note: Condenser location and orientation is dependent on other influential options.

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__

MANUAL COOLANT SHUTOFF VALVE – RETURN

The forward cab heater return flow shall be interrupted by one (1) manual engine coolant shutoff valve, mounted on the lower radiator tube, 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, and a removable, replaceable filter.

Y__N__

CREW HEATER MASTER SWITCH

A black rocker style master crew heater switch shall be installed and located on the Driver's side cab dash.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

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__

MANUAL SHUTOFF VALVE FOR CREW CAB HVAC COOLANT - RETURN

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

Y__N__

AIR CONDITIONING SYSTEM

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 its 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 assembly shall be a stacked type, low profile, dual fan compact design with dryer and pressure switch included. The condenser assembly shall include a white powder coated cover over the stacked condenser coils. The condenser shall be located on the cab roof.

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__

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AUXILIARY FAN(S)

Four (4) adjustable 7.5" auxiliary fan(s) shall be provided. Fans shall have a two (2) speed control switch on the mounting pedestal.

Two (2) shall be located under the center dash near the windshield, one (1) each side.

Two (2) shall be located on the cab ceiling, one (1) each side of the air conditioner condenser.

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__

MAP BOX

A 7" high map box shall be provided between the driver and officer. It shall be installed on the top of the engine hood. The box shall have four (4) slots. Two (2) slots on one side shall support 8-1/2" x 11" documents, while the two (2) slots on the other side shall support 11" x 17" documents. The slots shall all slant at a 13 degree angle downward.

The map box shall be constructed of .125 inch thick smooth 5052 aluminum sheet metal with welded assembly. It shall be covered with black Line-X.

Y__N__

STOKES BASKET STORAGE ON CAB ROOF

A stainless steel storage tray for a Junkin #JSA-200 Plastic Stretcher shall be provided on the aft portion of the cab roof. Tray shall be mounted on stainless steel unistrut. Retaining straps shall be provided.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

GENERAL 12-VOLT ELECTRICAL WIRING REQUIREMENTS

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__

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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 manufacturer's 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.

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Bidder Complies

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.

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 kick plate.

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.

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Bidder Complies

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 replaced.

Y__N__

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

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Bidder Complies

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 with two (2) 2 AWG braided copper grounding straps.

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__

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__

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Bidder Complies

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 FOR 2013 EMISSIONS ENGINE

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 Purchasing 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__

City of Waltham Purchasing Department

Bidder Complies

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)
- 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

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Bidder Complies

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

- Stop Engine (includes High Engine Temperature and Low Engine Oil Pressure)
- Low Voltage
- Engine Air Filter Restriction

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

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
- Other controls (as defined elsewhere in this specification)

Y__N__

City of Waltham Purchasing Department

Bidder Complies

BACK NUT SWITCH PANEL

The switch panel for the right center upper switch panel shall be 'back-nutted' for additional securing of the panel.

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 shall be provided for 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 hour real-time digital clock shall be identified and visible to the driver while seated.

Y__N__

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

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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

Intex 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. 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__

BUSSMANN MVEC RELAYS AND CIRCUIT PROTECTION

Manufactured as a hardened and weather tight module, the mVEC is rated at 200 Amps. The mVEC is configured to provide various OEM circuit protection and switching functions, using industry standard fuses, relays and breakers, with the status and control of each circuit accessible through J1939 CAN open messages. Each mVEC is rated at 200 Amps, with individual outputs rated up to 30 Amps. Waterproof to high pressure spraying (IP66 equivalent). The mVEC is designed and manufactured with robust features such as heavy-duty housing, silicon and Gortex gaskets, and protective conformal coated electronics, to operate in demanding vehicle environments such as those found in fire apparatus.

Y__N__

INFORMATION CENTER II

City of Waltham Purchasing Department

Bidder Complies

A 6" 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 the date and time. Additional information pages shall be provided for the warning indications, not stowed indications, and open doors.

Y__N__

APPARATUS STATUS INDICATORS AND AUDIBLE ALARMS

If a monitored "Not Stowed" or "Warning" condition is active, the corresponding status indicator shall flash. In addition to visual indicators, audible alarms shall sound when designated conditions activate the "Not Stowed" 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:

HYDRAULIC FILTER	LOAD MANAGE	LOW AIR PSI
CAB NOT LOCKED	LOW VOLTAGE	JACK KNIFE
AIR RESTRICTION	ABS FAULT	TRAILER ABS

Y__N__

NOT STOWED INDICATOR

A flashing Not Stowed indicator shall alert the vehicle occupants of an active "Not Stowed" 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 "Not Stowed" (not high priority) conditions:

AERIAL RAISED	JACKS EXTENDED
---------------	----------------

The following items are considered Not Stowed only when the parking brake is released.

LADDER UP	JACKS EXTENDED	Q2B TILTED
LIGHT TOWER UP	DS TELE LIGHT UP	STEP DOWN
OUTRIGGERS	PS TELE LIGHT UP	

Y__N__

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.

City of Waltham Purchasing Department

Bidder Complies

STOP ENGINE
LOW AIR
LOW COOLANT

CAB NOT LATCHED
ABS FAULT
LOW OIL PRESSURE

LOW VOLT

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

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

ANY LIGHT NOT STOWED
ANY BODY DOOR OPEN
ANY CAB OR CREW CAB DOOR OPEN

An audible alarm shall sound if any of the seat belts are not properly closed and the vehicle is going 5 mph or greater. The sound shall be different from all other audible alarms in the cab.

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). The chime alarm shall also sound when the parking brake is released.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

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.

If the load management system becomes active, the “LOAD MANAGE” indicator shall illuminate on the "Warnings" page of the INTELEX™ PLUS cab mounted display.

Y__N__

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__

VEHICLE DATA RECORDER AND SEAT MONITOR DISPLAY

Fire Research series SBA300-A00 seat monitor display and vehicle data recorder kit shall be installed. The kit shall include a seat monitor display module, a vehicle data recorder, and cables.

The seat monitor display shall be programmable for up to thirteen (13) seats and have a seatbelt icon for each. An alarm silence button and LED indicators for power and data link status shall be located on the front of the seat monitor display.

The data recorder case shall be waterproof. It shall have inputs for monitored information from the vehicle J1939 CAN bus, independent sensors, seatbelt and seat occupied switches, outputs for audible alarms, and two-way FRC data link connectors.

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Bidder Complies

The vehicle data recorder shall record the following data once per second and store it in a 48 hour loop:

- Vehicle Speed
- Acceleration
- Deceleration
- Engine Speed
- Engine Throttle Position
- ABS Event
- Seat Occupied Status
- Seat Belt Status
- Master Optical Warning Device Switch
- Time
- Date

The vehicle data recorder shall record the following data once per minute and have memory to store it for 100 engine hours:

- Maximum Vehicle Speed
- Maximum Acceleration
- Maximum Deceleration
- Maximum Engine Speed
- Maximum Engine Throttle Position
- ABS Event
- Seat Occupied with Seat Belt Unbuckled
- Master Optical Warning Device Switch
- Time
- Date

The oldest data shall be erased first when memory capacity is reached. All data shall be password protected and up loadable from the vehicle data recorder to a computer running FRC HAWK data management software. The HAWK software shall store, manage, provide graphic displays and produce formatted reports of the vehicle data recorder data.

An audible alarm shall sound if any of the seat belts are not properly closed and the vehicle is going 5 mph or greater. The sound shall be different from all other audible alarms in the cab.

Y__N__

ELECTRICAL SYSTEM DIAGNOSTICS

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

Y__N__

City of Waltham Purchasing Department

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.

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

An interface port shall be provided for service access to the INTELEX™ PLUS data bus. The diagnostic port shall be mounted inside the cab on the driver side in a location that is accessible from the ground.

Y__N__

POWER STUDS (OVERHEAD SWITCH PANEL)

Three (3) 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 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.

Y__N__

BUSS BAR (UNDER OFFICER'S SEAT)

A four (4) stud 30 Amp buss bar with protective cover 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__

City of Waltham Purchasing Department

Bidder Complies

DASH LAYOUT

The Manufacturer shall furnish a dash layout drawing to the Fire Department for their review and approval. The drawing shall detail the locations for installation of radios, sirens, light switches, gauges, etc. Due to the cab dash configuration and electrical wiring design, the components shall have designated locations that each will fit. The Fire Department shall review and approve the layout during the Engineering Conference.

Y__N__

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__

USB CHARGER PORT

Three (3) Kussmaul Electronics model 091-219 USB Dual Charger Ports shall be located on the dash as follows:

To be determined at PreConstruction.

Y__N__

MDT POCKET HOLE

A 0.5" hole shall be cut into the side face of the MDT pocket--a plug shall be placed in the hole. Waltham Fire Department plans on running wiring out of this hole sometime in the future after delivery.

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 in the cab roof. All installation locations and cable routing shall be confirmed with the customer during the pre-construction process.

Radio Antenna mounts to be located aft of the lightbar and forward of the air conditioning unit. They shall be placed (1) each side 18" off from the center of the apparatus.

The antenna lead shall terminate in the officer's seat riser. Any excess cable shall be secured in an accessible location.

Y__N__

City of Waltham Purchasing Department

RADIO ANTENNA

One (1) customer furnished PUC style antenna shall be placed on the cab roof in between and in-line with the radio antennas.

The antenna lead shall terminate in the center lower dash. Any excess cable shall be secured in an accessible location.

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 storage area.

Y__N__

BATTERY AND ELECTRICAL COMPONENT STORAGE AREAS

Battery and electrical component storage areas shall be constructed of stainless steel with structural steel tubes at the corner mounting points 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 Purchasing Department

Bidder Complies

DISCONNECT 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 #52-21-1100 "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 be located just aft of the Kussmaul shoreline Auto-Eject on the driver's side of the cab and 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 DC compressor or as an AC 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.

Air Compressor shall be located on the officer's side wall adjacent to the side window.

Y__N__

AUTO EJECT PLUG

A Kussmaul 20 Amp, 120 VAC "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.

The Kussmaul Super Auto Eject Plug shall be located behind the driver's door on the cab's side.

The Super Auto Eject cover shall be red.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

UPPER RAISED BEZEL SURROUNDS, WITH PANELS

A custom raised and chrome plated bezel shall be installed on the front face of the cab, on each side of the front grille. Housed within each bezel shall be a removable panel, painted job color. The removable panel shall provide service access to the forward side, firewall mounted electrical connections and wiring harness.

Y__N__

HEADLIGHTS

Front headlights shall be mounted on the front cab face to the left and right of the engine cooling intake grille. The headlights shall be quad type, rectangular JW Speaker model 8800 12-volt LED with bright finished trim rings and bezels. The low beam headlights shall be located at the outer position.

Headlights shall be in the middle position.

Y__N__

FRONT DIRECTIONAL DUAL LIGHT BEZEL

The front directional lights shall be mounted in a chrome plated dual light bezel located on each side of the cab front face. The dual light bezel shall match the headlight housing.

The front directional dual light bezels shall be in the uppermost position-standard.

Y__N__

FRONT DIRECTIONAL LIGHTS

There shall be one (1) Whelen 600 Series model 60A00TAR LED amber arrow directional signal light installed on each side of the cab front face. The 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.

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) Weldon 9186-1500-20, amber LED type clearance and identification lights shall be surface mounted across the top leading edge of the cab roof.

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Bidder Complies

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 manufacturer's 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__

TURN/MARKER LIGHTS

One (1) Truck-Lite model 60117Y turn/marker light shall be provided and installed on the rear fender panel below the forward air bottle compartment on each side of the vehicle. The lights shall have an amber polycarbonate lens and unpolished stainless steel mounting flange or bezel.

Y__N__

REAR MARKER LIGHTS

A Britax long stemmed "LED" dual faced #427 marker light shall be placed at each rear corner of the body. The front lens shall be amber; the rear lens shall be red.

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.

Location shall be at the Driver's side rear just to the right of the back-up light.

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.

Y__N__

City of Waltham Purchasing Department

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/TURN/BACKUP/WARNING LIGHTS CONFIGURATION

The brake, turn, backup and warning lights shall be located at the rear of the apparatus. Each light shall be mounted horizontally in a vertical configuration, one light atop the other.

The order of lights shall be as follows:

- Top: Directional
- Second from top: Brake
- Third from top: Back-Up
- Bottom: Warning

Y__N__

BRAKE/TAIL LIGHTS

Two (2) Whelen series 600 LED red brake/tail lights, model 60BTT, shall be 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 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 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__

City of Waltham Purchasing Department

Bidder Complies

REAR SCENE LIGHTS

Two (2) Whelen M6ZC Super-LED scene lights with 12 diodes and 8-32 degree optics and a chrome plated flange ring shall be installed on the upper rear of the apparatus, one on each side. These lights shall be switched from the cab dash.

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__

BODY STEP LIGHTS

There shall be one (1) TecNiq Eon LED strip light center mounted under the turntable, and one (1) centered on the back of the cab wall along the roof edge, to illuminate the top area of the forward body section.

There shall be two (2) TecNiq Eon LED strip lights on the top of the intake/gauge panels on the forward body, one each side of the body, to illuminate the panels and the step at their bases.

There shall be a LED step light mounted on the pedestal to illuminate the area around the pedestal. This light shall be activated with the aerial PTO.

There shall be two (2) TecNiq Eon LED lights mounted, one on each side of the body, in the rear face of the compartment aft of the rear jacks. These lights shall illuminate the top step of each access ladder.

There shall be two (2) TecNiq Eon LED strip lights, one on each side of the body, mounted to the underside of the top step of each access ladder to illuminate the lower steps.

There shall be two (2) TecNiq Eon LED strip lights on the boom support to illuminate the decking. The lights shall be installed near the top of the support, one facing forward, one facing rearward.

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Bidder Complies

There shall be two (2) TecNiq Eon LED strip lights installed to illuminate the interior work area of the platform.

There shall be four (4) TecNiq Eon LED lights with chrome bezels installed on the outside of the platform, facing downward to illuminate the step surface. There shall be two (2) lights on each side of the platform.

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

Four (4) weatherproof TecNiq #T410 LED ground lights shall be provided underneath the body, per NFPA requirements. Two (2) shall be located under the rear body access ladders, one on each side and two (2) shall be under the rear of the body.

Y__N__

GROUND LIGHTS

Two (2) weatherproof TecNiq #T410 LED ground lights shall be provided underneath the body, per NFPA requirements. Two (2) shall be located under the forward body, one on each side.

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__

PARKING LIGHTS

Two (2) TecNiq #E960 LED, side mounted, surface mounted, parking lights shall be provided. The lights shall have a stainless steel housing. They shall be installed one each side of body in the rear wheel well area. Light mounting fixture shall be designed so that light is angled to shine out to the rear and down towards the ground. They shall be switched on from the driver's position in the cab.

Y__N__

REVERSE ENABLE SWITCH

City of Waltham Purchasing Department

Bidder Complies

A reverse lighting enable switch shall be provided on the cab dash on the Driver's side. Exact location shall be determined at the PreConstruction Meeting.

Y__N__

INTERIOR CAB DOME LIGHTS

Four (4) Weldon 8080 series 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.

The red lenses shall face the front of the cab.

Y__N__

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 HS761-00 pivot and swivel map light with on/off switch, shall be located hanging from the overhead in Zone 7 within reach of the officer.

Y__N__

HAND LIGHTS

Two (2) Streamlight Fire Vulcan® LED model 44451 rechargeable hand light(s) with quick release shoulder strap(s) shall be provided. The hand light 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.

Location of hand light charger/holders shall be determined at the PreConstruction.

Y__N__

City of Waltham Purchasing Department

THERMAL IMAGER CHARGER WIRING & MOUNTING

One (1) Waltham Fire Department supplied thermal imager charger shall be mounted and wired atop the engine cover.

Charger shall be wired battery direct.

Exact location shall be determined at the PreConstruction Meeting.

Model - FLIR K Series TIC = 7" wide x 14¼" long x 7" tall, 5 lbs.

Y__N__

EXTERIOR COMPARTMENT LIGHT(S)

Two (2) Techniq EON led strip lights shall be provided (1) over the jack controls in the driver's side forward body module and (1) in the footlocker compartment beneath the jack control compartment. Each light shall be automatically illuminated by opening the respective compartment door. A switch, installed in the door frame, shall be used to activate the light. Lights shall not have any other individual switch on the light base.

Y__N__

EXTERIOR COMPARTMENT LIGHT - LED STRIP(S)

Two (2) exterior compartment(s) shall have a ROM LED lighting strip installed. The lighting strip shall be mounted horizontally on the ceiling next to the door framing in all specified body compartments. The LED lights shall be mounted in an anodized aluminum track. A switch, installed in the door frame, shall be used to activate light.

Specify which compartment(s) shall receive lighting: Horizontally hinged compartment above the front tandem axle, one (1) each side.

Y__N__

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

Eight (8) exterior compartment(s) shall have a ROM 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 LED lights shall be mounted in an anodized aluminum track. A switch, installed in the door frame, shall be used to activate the lights.

Specify which compartment(s) shall receive lighting: All body compartments.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

EXTERIOR COMPARTMENT LIGHT - LED STRIP(S)

One (1) exterior compartment(s) shall have a ROM LED lighting strip installed. The full height lighting strip shall be mounted vertically along the right side of the door framing (standing outside, facing the inside of the compartment) in all specified body compartments. The LED lights shall be mounted in an anodized aluminum track. A switch, installed in the door frame, shall be used to activate light.

Specify which compartment(s) shall receive lighting: Compartment on the forward body module on the right side.

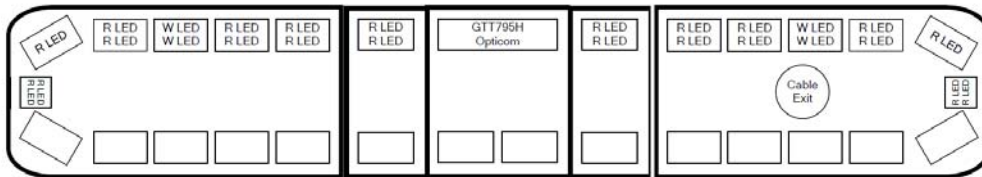
Y__N__

LIGHTBAR WITH EMITTER

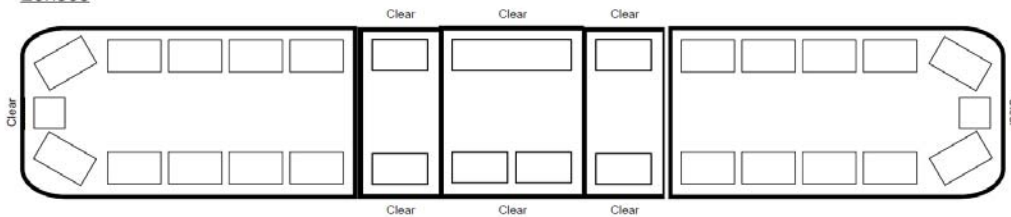
A Whelen model #F4N 72" Freedom™ IV Low Current Series Super-LED® lightbar shall be provided on the cab roof. Provided to match the attached WECAD drawing from Whelen.

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 emitter shall be programmed with high priority flash rate.

Configuration



Lenses



Y__N__

UPPER REAR WARNING LIGHTS

Two (2) Whelen model L31HRFN Super-LED® red beacons shall be provided on the upper rear of the apparatus.

Y__N__

WARNING LIGHTS

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Bidder Complies

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:

Zone A Upper:

Whelen Front light bar

Zone A lower:

Whelen Red 600 Series Warning lights inboard of turn signals

Zone B/D lower:

Whelen Red 600 Series Warning lights each side of bumper
Whelen Red 600 Series Warning lights each side of cab just aft of the front door
Whelen Red 600 Series Warning lights body fender, each side
Whelen Red 600 Series Warning lights each body side aft of basket accessladder

Zone C upper:

Whelen Red LF31 Series Rear beacons

Zone C lower:

Whelen Red 600 Series Warning lights below the backup lights, each side

Y__N__

AUDIBLE WARNING DEVICES

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

Y__N__

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Bidder Complies

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__

DUAL AIR HORNS

Two (2) Grover 1510 chrome air horns shall be furnished, one on each side. A pressure protection valve shall be installed in-line to prevent loss of all air from the vehicle air brake system.

Y__N__

AIR HORN SELECTOR SWITCH

An air/electric horn selector switch shall be provided which will allow either the electric or air horn to be actuated by the horn button on the steering wheel.

Y__N__

AIR HORN DUAL LANYARD

The air horn(s) 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__

WHELEN SIREN

A Whelen model 295SLSC1 electronic siren shall be provided in the cab dash. The siren has a selectable output of 100 or 200 Watts. The microphone shall be removable. The location of the Mic Clip shall be determined at the Pre-Construction Conference.

Y__N__

SIREN SPEAKER(S)

One (1) Whelen Projector Series SA-315P, 100-watt speaker(s) with manufacturer's logo on a polished stainless steel grille shall be recess mounted in the center of the front bumper extension.

Y__N__

MECHANICAL SIREN WITH SWING-AWAY BRACKET

A Federal Signal Model Q2B® siren with chrome plated housing and swing-away bracket shall be mounted in the center of the front bumper extension as directed. There shall be an electric brake control installed in the cab, at the driver's switch panel, properly labeled. The cab tilt function shall be interlocked so that the cab cannot be tilted unless the siren is tilted out of the way.

Y__N__

MECHANICAL Q2B® FOOTSWITCH

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Bidder Complies

Two (2) Linemaster® Model 491 momentary foot operated switch(es) to activate the mechanical Q2B® siren shall be installed on the toe board of the cab floor.

The foot switches shall be located on both the officer and driver's side, by the feet.

Y__N__

ADDITIONAL Q2B® BRAKE ROCKER SWITCH

An additional siren brake rocker switch shall be provided to allow easy access for the officer.

Y__N__

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Bidder Complies

STAINLESS STEEL BODY CONSTRUCTION

The body and compartments shall be constructed of heavy duty 3CR12 stainless steel. The compartments shall be a "sweep out" design with the floor higher than the door sill. The compartment floors shall be a minimum of 3.5 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 rearward wall of the compartment aft the rear wheels and rear stabilizers, and also the compartment aft of the access ladder, 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.

Y__N__

ALUMINUM TREAD PLATE

A bright aluminum tread plate cover shall be installed over the side compartments. The cover shall not form the compartment top but shall be an overlay. The side edge of the cover shall have a 45 degree outward bend. The forward face of the side compartments shall be covered with bright aluminum tread plate overlays. All body components covered with aluminum tread plate overlays shall be coated with an anti-corrosion compound prior to installation. All tread plate shall be secured with threaded fasteners.

Y__N__

BODY MOUNTING SUBSTRUCTURE

The body compartments shall be bolted directly to spacer brackets welded to the aerial torque box. They shall be bolted through the back wall of the compartments in 15 places (7 on Driver's side and 8 on Officer's side) along the length of the body. In addition, the compartments in front of the rear wheels, behind the rear Jack assemblies, and behind the rear access ladders shall be supported by heavy 3" x 3" x 0.38" gusseted angle L-brackets (1 under front and 2 under both rear compartments- each side). The brackets shall be bolted directly to the chassis frame. The body shall also be bolted to the chassis frame at the front and rear of the fender area through gusseted 0.38" formed steel plates (2 each side). The area inside the fender area shall be heavily reinforced to support the weight of the body and additional equipment.

Y__N__

YELLOW PERIMETER MARKING

In accordance with NFPA 1901 chapter 15.7.1.6, the perimeter of all horizontal walking surfaces on the top of the body shall be marked near the outside edge with a one-inch wide safety yellow line to delineate the designated standing or walking surface area.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

LEFT SIDE COMPARTMENTS

The left hand side compartments of the main body shall be made of stainless steel. The compartmentation shall consist of one (1) compartment ahead of the rear wheels, one (1) low height upper compartment above the forward rear wheels, one (1) full height upper compartment above the aft rear wheels, one (1) full height compartment behind the rear wheels and rear stabilizer, and one (1) compartment aft of the access ladder. All compartments shall have hinged doors.

The compartment ahead of the rear wheels and aft of the superstructure, shall have a doorframe to doorframe dimension of 35.25" wide x 40.00" high. The clear door opening shall be 31.25" wide x 36.00" high. The usable compartment space shall be 39.00" wide x 41.25" high x 16.50" deep. This compartment shall have vertically hinged double doors.

The low height upper compartment above the forward rear wheels shall have a doorframe to doorframe dimension of 55.25" wide x 13.75" high. The clear door opening shall be 51.75" wide x 10.25" high. The usable compartment space shall be 55.00" wide x 15.00" high x 23.50" deep. This compartment shall have a horizontally hinged lift-up door.

The full height upper compartment above the aft rear wheels shall have a doorframe to doorframe dimension of 51.50" wide x 28.75" high. The clear door opening shall be 47.50" wide x 24.75" high. The usable compartment space shall be 55.50" wide x 30.00" high x 23.50" deep. This compartment shall have vertically hinged double doors.

The full height compartment behind the rear wheels and the rear stabilizers shall have a doorframe to doorframe dimension of 57.50" wide x 52.00" high. The clear door opening shall be 53.50" wide x 48.00" high. The usable compartment space shall be 59.25" wide x 53.25" high x 23.50" deep. This compartment shall have vertically hinged double doors.

The compartment behind the access ladders shall have a doorframe to doorframe dimension of 37.50" wide x 32.00" high. The clear door opening shall be 33.50" wide x 28.00" high. The usable compartment space shall be 38.50" wide x 33.25" high x 23.50" deep. This compartment shall have vertically hinged double doors.

Y__N__

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RIGHT SIDE COMPARTMENTS

The right hand side compartments of the main body shall be made of stainless steel. The compartmentation shall consist of one (1) compartment ahead of the rear wheels, one (1) low height upper compartment above the forward rear wheels, one (1) full height upper compartment above the aft rear wheels, one (1) full height compartment behind the rear wheels and rear stabilizer, and one (1) compartment aft of the access ladder. All compartments shall have hinged doors.

The compartment ahead of the rear wheels and aft of the superstructure, shall have a doorframe to doorframe dimension of 35.25" wide x 40.00" high. The clear door opening shall be 31.25" wide x 36.00" high. The usable compartment space shall be 39.00" wide x 41.25" high x 23.50" deep. This compartment shall have vertically hinged double doors.

The low height upper compartments above the forward rear wheels shall have a doorframe to doorframe dimension of 55.25" wide x 13.75" high. The clear door opening shall be 51.75" wide x 10.25" high. The usable compartment space shall be 55.00" wide x 15.00" high x 23.50" deep. This compartment shall have a single horizontally hinged lift-up door.

The full height upper compartments above the aft rear wheels shall have a doorframe to doorframe dimension of 51.50" wide x 28.75" high. The clear door opening shall be 47.50" wide x 24.75" high. The usable compartment space shall be 55.50" wide x 30.00" high x 23.50" deep. This compartment shall have vertically hinged double doors.

The full height compartment behind the rear wheels and the rear stabilizers shall have a doorframe to doorframe dimension of 57.50" wide x 52.00" high. The clear door opening shall be 53.50" wide x 48.00" high. The usable compartment space shall be 59.25" wide x 53.25" high x 23.50" deep. This compartment shall have vertically hinged double doors.

The compartment behind the access ladders shall have a doorframe to doorframe dimension of 37.50" wide x 32.00" high. The clear door opening shall be 33.50" wide x 28.00" high. The usable compartment space shall be 38.50" wide x 33.25" high x 23.50" deep. This compartment shall have vertically hinged double doors

Y__N__

STORAGE AREA

An open storage area shall be created between the high side compartments over the wheel housing by bolting a partition at the front and rear sides of these compartments. These bolt-on sides shall be approximately 15" high and constructed of aluminum tread plate.

Y__N__

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INNER LINERS

Full semi-circular inner liners 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

Aluminum treadplate, removable, fender panels shall be provided on the outer face of each fender area.

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)

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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__

BRUSHED STAINLESS COMPARTMENT DOOR LINER(S)

Brushed stainless steel overlay shall be provided on the inside of twenty-one (21) compartment door(s) to protect the painted finish and to cover inside door hardware.

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)

Thirteen (13) 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)

Thirteen (13) 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__

VENTS

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

Y__N__

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STABILIZER BAYS

The bays for the rear stabilizers shall be lined with aluminum tread plate. No covers shall be provided for the stabilizer areas.

Y__N__

STABILIZER STORAGE COMPARTMENT

Two (2) storage compartments approximately 14" wide, shall be installed above the rear jacks, one (1) each side. The compartment shall be recessed and have an aluminum treadplate door and D handle style latch. There shall be no shelf or dividers, just an open compartment.

Y__N__

TRANSVERSE STORAGE COMPARTMENT

An aluminum treadplate transverse compartment shall be mounted atop of the body above low side compartments above the front tandem axle. Compartment shall have two (2) aluminum treadplate doors, one (1) each side, that are hinged horizontally along the bottom and a D style handle latch. The compartment shall be the same height as the high side body compartments, and full width of the body (transverse). There shall be one (1) fixed shelf with no flanges that is the length of this compartment. Compartment to be 27" wide. The clear lower opening below the fixed shelf shall be a minimum of 10".

Y__N__

SALVAGE COVER STORAGE BOX

Two (2) aluminum treadplate salvage cover storage boxes shall be mounted on top of the aft most compartments, one (1) each side. The salvage cover storage boxes shall have an aluminum treadplate access door that is hinged horizontally along the bottom and a D-handle style latch. The salvage cover storage boxes shall be 20" in depth or as deep as allowed to the basket bottom skid pad. The storage boxes shall be constructed to hold weight from the top as a walking surface for a firefighter to enter or exit the aerial basket. The boxes shall have one (1) vertical divider in the center.

Y__N__

WATER EXTINGUISHER MOUNT - FORWARD BODY

A water extinguisher mount shall be provided aft of the forward body on the Officer's side. Mount shall be fabricated from aluminum.

Y__N__

ACCESS STEPS

Three (3) stationary steps shall be recessed into the right side and left side of the body to facilitate access to the platform. The steps shall be located aft of the compartment just to the rear of the rear axles. All vertical surfaces shall be covered with aluminum tread plate. The steps shall be of Bustin aluminum grating.

Y__N__

SWING DOWN STEPS

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Under the side permanent access steps shall be an additional swing down access step also made of Bustin aluminum grating. These steps shall be locked in place when swung up in the stored position

Y__N__

HANDRAILS

A vertically mounted "swimming pool" style handrail shall be installed on the forward side of each set of platform access steps.

One (1) 17" handrail shall be provided on the rearward side of each set of platform access steps, opposite to the swimming pool style handrail.

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

Y__N__

REAR

All vertical surfaces on the rear of the body shall be smooth painted stainless steel for application of reflective chevron striping.

Y__N__

COMPARTMENT DOOR SILL PROTECTOR(S)

A brushed stainless steel sill protector, approximately .50" wide, shall be provided on fifteen (15) body compartment door sill(s) to protect the painted finish.

The following compartments shall have a brushed sill protector: All Compartments, including ground ladder compartment.

Y__N__

DRI-DEK®

Thirty (30) black Dri-Dek® mat(s) shall be provided and installed on body compartment floors and/or in shelves/trays as specified.

Black Dri-Dek® shall be located in/on all compartments, shelves and trays.

Y__N__

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COMPARTMENT DIVIDER(S)

One (1) vertical compartment divider(s) shall be installed in the body compartments. Partition(s) shall be constructed of the same material as the body, (0.125” for aluminum, 2.5 mm for stainless steel) and shall be the full height (allowance shall be made for ceiling light) and depth of the compartment. They shall be bolted in place so they may be removed if desired.

Location shall be determined at the PreConstruction.

Y__N__

ADJUSTABLE SHELF OR SHELVES

Twelve (12) adjustable shelf or shelves (with open corners) made from 3/16" smooth aluminum sheet metal shall be provided in the body compartment(s). Each shelf shall be supported by four (4) stainless steel angles bolted to Aluma-Strut tracks.

Location shall be determined at the PreConstruction.

Y__N__

FINISH - ADJUSTABLE SHELF (OR SHELVES)

Twelve (12) adjustable shelf (or shelves) shall have a mill finish on the outside edge of the shelf.

Y__N__

ROLL OUT TRAY(S)

Four (4) roll out tray(s) constructed of 0.188" aluminum shall be provided in the body compartment(s). 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.

Location shall be determined at the PreConstruction.

Four (4) Trays shall have SlideMaster HSL 2 Rail spring locks.

Y__N__

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FINISH - ROLL OUT TRAY(S)

Four (4) roll out tray(s) shall have a mill finish applied to the outside edge of the tray.

Y__N__

ROLL OUT DROP DOWN TRAY(S)

Two (2) roll out drop down tray(s) constructed of 0.188" smooth aluminum shall be provided in the body compartment(s). Each tray shall have edges on all four sides for added strength and be mounted on heavy duty rollers able to support a 250 lbs. load. Corners shall be open. Each tray shall be vertically adjustable on Aluma-Strut attached to the sides of the compartment.

Location shall be determined at the PreConstruction.

Two (2) Trays shall have SlideMaster HSL 2 Rail spring locks.

Y__N__

FINISH - DROP DOWN ROLL OUT TRAY(S)

Two (2) drop down roll out tray(s) shall have a mill finish applied to the outside edge of the tray.

Y__N__

AIR CYLINDER RACK IN COMPARTMENT

A six (6) slot bottle rack shall be installed in the compartment above the forward tandem axle on the Officer's side. Gray 7.00" I.D. PVC tubes shall hold the bottles and shall be angled to the rear. Enclosure shall be constructed of 0.125" Aluminum. Rubber matting shall be placed on interior back wall aft of the PVC tubes.

Y__N__

AIR BOTTLE COMPARTMENTS

There shall be two (2) triple wheel well enclosures provided to accommodate six (6) air bottles. A triple air bottle compartment shall be located on each side, between the tandem rear axles. The compartments shall be fabricated of the same material as the fender and shall provide a minimum of 23.00" of usable depth. There shall be a rubber mat provided on the rear wall and on the bottom half of each compartment to prevent damage to the bottles.

Y__N__

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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__

RUB RAIL – BODY REAR

A full width bright aluminum polished C-channel rub rail shall be provided along the lower portion of the rear of the body, 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 rail shall be a minimum of 2.25" wide x 1.25" deep, and shall be mounted on rubber supports. The rub rail shall have a 1.25" x 1.25" chamfer on both ends of the rail. The rail shall protrude 1.50" from the face of the body.

Y__N__

MOUNTS FOR D-HANDLED PIKE POLE ATOP FORWARD BODY MODULE

Mounts for two (2) Firehooks Unlimited APH-6 pike poles with D-handles shall be provided atop the forward body module just forward of the turntable.

Mounts shall consist of a 3/16 aluminum treadplate 'pocket' for the pike pole head and a Pac Tools #1004 HandleLok to secure the D-handle.

Y__N__

REAR BODY PROTECTION

A heavy duty, fully welded, gusseted, steel tubular structure that is bolted to the rearmost portion of the frame shall be provided just beneath the rearmost portion of the body. The structure shall extend past the body on both sides so that it is in line with the rub rails. The intent of this structure is to protect the body from incidental impacts.

Y__N__

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TOWER DESIGN AND PERFORMANCE

A 95 foot, 1000 pound tip load telescoping tower shall be mounted mid-ship of the apparatus. The boom shall have a totally enclosed box type construction and shall meet or exceed the requirements of all applicable sections of the current edition of NFPA 1901.

The boom shall be designed with a structural safety factor of two to one (2:1) based on the dead and live loads and shall meet ANSI A92.2 Standard for Vehicle Mounted Aerial Devices and NFPA 1901 which requires a static stability safety factor of one and one half to one (1.5:1) based on the rated load. These capabilities shall be established in the unsupported configuration.

The aerial device and all supporting structure shall be third party tested to confirm that the tower meets the original design criteria and the intent of the latest recommended NFPA standard for aerial devices. Such testing shall include the use of brittle lacquer stress coating to identify all stress concentrations, followed by strain gauging to verify that all nominal stresses and stress concentrations have a safety factor that is equal to or greater than 2:1 based on the dead and live load.

The tower shall be comprised of four (4) sections and extend to a nominal working height of 95 feet above the ground as measured by NFPA 1901 recommendations. The aerial shall have a rated horizontal reach of 84 feet measured in the horizontal plane at zero (0) degrees from the centerline of the turntable rotation, as defined by NFPA 1901. The aerial shall be capable of continuous operation through 360 degrees of rotation and from minus nine (-9) degrees to plus seventy-five (+75) degrees elevation.

Y__N__

TOWER CERTIFIED RATED CAPACITY

The rated capacity of the platform shall be 1000 pounds while flowing 1000 GPM of water in accordance with NFPA 1901, current edition, with no restrictions regarding boom extension, boom elevation, or rotational orientation. The platform shall be capable of flowing 2000 GPM of water, provided the monitor stops are set at 45 degrees above the horizontal. There shall be no restrictions regarding the simultaneous use of all three (3) motion functions (elevation, rotation, and extension) with the rated platform capacities either at the main pedestal or in the platform. This unit shall be capable of setting up and operating on street grades of up to 5 degrees. At the maximum grade, the unit shall be capable of operating at the aforementioned manufacturer's rated capacity and platform placement with no operational restrictions. There shall be no nozzle orientation restrictions while flowing 1000 GPM of water.

All tower certifications shall be based on the platform being properly deployed in an unsupported configuration. The capacities shall be based upon 360 degree rotation, up to full extension and from -9 degrees to + 75 degrees.

Y__N__

OPERATION ON GRADES

The aerial is capable of being operated at full rated capacity in every position in which the aerial device

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Bidder Complies

can be placed when the apparatus is on a slope of 5 degrees (8.7%) in accordance with NFPA 1901 (19.21.3.1)

Y__N__

SUPERSTRUCTURE CONSTRUCTION

The superstructure shall be directly mounted to the chassis at a midship point by grade 8 fasteners and not welded directly to the rail. It shall be capable of supporting the positioning of all boom movements and capacities. The superstructure shall be constructed of structural steel solid-welded into such a fashion that the outriggers are directly integrated, providing direct radial support of boom extension off the side extension of the boom.

Y__N__

TOWER TORQUE BOX

A torque box shall be provided that transmits boom loads from the superstructure to the rear jacks. The torque box also extends to the rear of the truck to provide enclosed storage for ground ladders. The sub-frame shall be constructed of .25”", T-1 100,000 PSI yield steel plate. The torque tube shall extend from the center of rotation of the turntable to the back of the apparatus. It shall be 25.38 high by 34.00 wide. Chassis mounting plates shall be welded to the sides of the torque box and then it shall be bolted to the frame rails using SAE grade 8 bolts and nuts. The torque box shall also be secured to the superstructure. The torque box assembly shall be capable of withstanding all torsional and horizontal loading when the unit is supported by the outriggers and the aerial device is fully extended and loaded to capacity.

The torque box shall have structure for mounting the cradle and transferring the boom weight from the cradle through the torque box and into the frame rails.

Y__N__

STABILIZERS

There shall be six (6) chassis stabilizers to lift the truck off the suspension creating a stable base for tower operations. There shall be two (2) swing-down outriggers mounted directly to the superstructure capable of supporting all of the side operations of the tower, in conjunction with the four (4) vertical corner jacks. A four (4) out and down stabilizer system shall not be acceptable.

Y__N__

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FRONT AND REAR JACKS

The four (4) vertical jacks shall be mounted two (2) in front of the cab and two (2) behind the rear axle. The two in front shall tilt to allow the cab to be tilted for maintenance. The vertical jack housing shall be bolted to a 6" minimum square steel tubing mounted under the chassis frame rails thus providing maximum lifting capacity. The cylinders shall contain integral pilot operated holding valves for maintaining their position during operation of the boom and to secure the cylinder in the event of a hydraulic line failure. Each jack shall also have a U-shaped mechanical safety lock constructed of solid steel. Each safety lock shall have a locking pin on a lanyard with a chrome handle. The ground contact area shall be that which is recommended by NFPA, 1901 with the use of ground plates. An out and down stabilizer system welded to the chassis rail shall not be acceptable.

Y__N__

MID BODY OUTRIGGERS (Tormentors)

The two (2) outriggers, one (1) each side of the vehicle, shall be mounted directly to the turntable superstructure at two (2) pivot points. These outriggers shall swing down from their vertical storage position and lock into an A-frame type configuration. The foot pad shall swivel parallel to the longitudinal axis of the truck to match uneven terrain. Span of the outriggers is 249" from the outside edges of the foot pad. The cylinders shall contain integral pilot operated holding valves for maintaining their position during operation of the boom and in the event of failure of a hydraulic line. The outriggers shall be provided with a manually positioned safety pin. The safety pin shall be constructed of high strength steel. Each safety pin shall have a locking pin on a lanyard with a chrome handle.

The ground contact area shall be that which is recommended by NFPA 1901 with the use of ground plates.

Y__N__

STABILIZER CONTROLS

Six (6) joystick controls for all stabilizers shall be provided on the street side of the apparatus in the forward body compartment just aft of the cab.

The operator shall be able to raise and lower the jacks and outriggers independently while observing them during set up. A single control switch shall also be provided for the operator to raise and lower all jacks and outriggers at once while the interlock is activated. An automatic high idle switch and indicator shall be provided so that automatic engine RPM ramp up from hydraulic requests can be disabled.

Two (2) inclinometers shall be provided to aid in leveling the unit from side to side and front to rear. The control panel shall be lit by the general compartment light chosen by the fire department.

Y__N__

OUTRIGGER CONTROL HOUSING

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Bidder Complies

The outrigger/stabilizer controls shall be housed in a dedicated compartment in the left side forward body section. The upper section shall be recessed back from the outside edge of the body and shall house the outrigger stabilizer controls.

Y__N__

OUTRIGGER ALARM

An automatic electronic warning device (horn) shall be provided to warn personnel when the outriggers leave their nested position. Alarm shall operate only when outriggers are moving.

Y__N__

CRADLE INTERLOCKS

A cradle interlock system shall be provided which automatically prevents the operator from lifting the aerial device from the cradle unless all outriggers are placed in a load supporting configuration. The system is activated when the foot of the center outriggers contacts the ground and trips a limit switch. An LED indicator light on the jack control panel shall then indicate that the boom can be operated.

An additional interlock shall be provided that prevents outrigger operation when the aerial device is not fully stowed in the cradle.

Y__N__

SHORT-JACK OPERATIONS

The aerial device shall be capable of operating in a "short-jacked" stance. The aerial device shall require two operators to lift the boom from the cradle. Once the boom is lifted from the cradle, the aerial device shall be fully operational by a single operator to the side of the apparatus with fully deployed outriggers, and shall be denied operation to the short set side. In the event both sides are short set, the operator will automatically be denied operation to both sides. Two methods of overriding the interlock are available: an electric switch, or mechanically moving the solenoid. Both are available to the single operator located at the primary operator's station.

Y__N__

MANUAL OVERRIDES

The manual overrides for the aerial device (clockwise and counterclockwise rotation and boom lowering interlocks) shall be in the turntable control pedestal. Operation of the boom without the outriggers properly set requires the operation of a diverter valve and requires a second operator. The overrides for the outriggers shall be conveniently located behind the jack control panel. The outrigger overrides can be operated by one person, but requires the simultaneous activation of two separate controls to override the safety system.

Y__N__

OUTRIGGER LIGHTING

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Bidder Complies

Six (6) Whelen TIR3™, red LED lights, with cast aluminum bezels, shall be mounted on the outrigger feet, three on each foot. On each foot, one light shall face outward, one shall face forward, and one shall face rearward, to give 180 degrees of illumination. The lights shall be activated by engaging the PTO.

Y__N__

REFLECTIVE STRIPING

In compliance with NFPA, there shall be a reflective stripe placed on both of the tension arms for each tormentor outrigger.

Y__N__

OUTRIGGER SPOT LIGHTS

Two (2) Unity 6" chrome plated spot lights with AH-R-P46FKC LED bulbs shall be installed, one on each side of the apparatus above the outriggers, to illuminate the area for spotting the outriggers in the down position. The lights shall be wired to a switch on the cab dash and shall also automatically activate when the PTO is engaged. Each light is equipped with a switch on the light head. This switch shall be dependent on the switch on the light head.

Y__N__

OUTRIGGER PADS AND BRACKETS

A set of six (6) auxiliary outrigger pads shall be installed on the apparatus. The six (6) pads shall each be 24" x 24" and shall be made of 3/8" smooth aluminum with a carrying handle. The pan-style brackets, which hold the pads, shall be installed on the underside of the body, aft of each rear axle on each side of the apparatus. Each bracket shall be capable of holding three (3) of these outrigger pads.

Y__N__

CRADLE

A heavy-duty rest shall be provided to support the boom in the travel position. Re-enforcement plates shall be attached to the boom base section to protect the aerial when the unit is in the travel position. The cradle shall be located on the top of the torque box. It shall be constructed such that the weight of the boom shall be transferred through the torque box to the chassis frame rails. A limit switch mounted on the cradle shall automatically stop the lowering function of the boom at the proper position in the boom rest.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

HYDRAULIC SYSTEM

All stabilizer, outrigger, and tower movements shall be accomplished by the use of hydraulic power. All functions shall be held in place by holding valves when not in motion. The hydraulic system shall incorporate a pressure relief valve to protect the system from excessive pressure. All hydraulic cylinders shall incorporate pilot operated holding valves to keep them in place or to control their movement when hydraulic pressure is applied. The hydraulic pressure lines shall have a burst pressure of at least four times the operating pressure.

The system shall incorporate two (2) filters and a remote filter condition indicator. One (1) 5 micron high pressure filter shall be placed after the pump and one (1) 10 micron return filter shall be placed in the hydraulic tank. These filters shall be sized for the system required pressure and flow.

Y__N__

HYDRAULIC PUMP

The system shall be powered by a pressure compensated load sensing hydraulic pump. The pump shall be sized to operate all boom functions simultaneously. The load sense feature operates any function at the optimum pressure to maximize efficiency and minimize heat build-up.

Y__N__

HYDRAULIC OIL TANK

The hydraulic oil tank shall have a sufficient capacity to operate the aerial while allowing the oil to cool and shall be located in the front of the torque box for a 95 foot Aerialscope II and behind the driver's side compartment forward of the tandem axles for a 75 foot Aerialscope II. Note: Certain options may dictate special tank locations. There shall be a means provided to remove the tank, if needed. The connection points to the tank shall be easily accessible, with internal baffles separating the intake and return. There shall be shut-off valves at these points to isolate the tank, if needed. A filtered breather cap and a basket strainer shall be located in the filler neck. A dip stick shall verify the oil level. There shall be a plaque mounted next to the fill cap labeled "Hydraulic Fluid Only".

Y__N__

HOUR METER

An aerial hydraulics hour meter shall be provided to accumulate hours when the transmission provides pressure to engage the PTO and the aerial enable switch is engaged.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

EMERGENCY PUMP

The apparatus shall be equipped with an emergency hydraulic pump. The pump shall be driven by a 12 volt electric motor with power from the truck batteries. It shall be capable of providing limited hydraulic power for returning the boom and outriggers to their stowed position in the event of main power failure. A control switch for the emergency pump shall be located at the outrigger control station and at the aerial control. The control switch shall be a spring loaded momentary type to prevent prolonged operation of the emergency pump.

Y__N__

HOT SHIFT POWER TAKE/OFF FOR AERIALS

The apparatus shall be equipped with a power (hot) shift PTO driven by the chassis transmission. An indicator shall be located in the cab to indicate when the PTO is engaged.

The following conditions apply for use of the PTO:

If the PTO is used to power the generator only, then the PTO can be engaged by the generator switch when the truck is in motion.

If the PTO is used to power the aerial only, then the PTO can be engaged by the aerial enable switch if the transmission is in neutral and the parking brake is set or in pump mode with the parking brake set.

If the PTO is used to power the generator and the aerial, then the generator can be used while the truck is in motion by activating the generator switch. A hydraulic valve, controlled by the aerial enable switch, shall prevent aerial operation until the transmission is in neutral and the parking brake has been set or in pump mode with the parking brake set.

There shall be no exceptions to this interlock system since it is designed to protect and safeguard personnel and equipment.

Y__N__

PTO AERIAL DRIVE SHAFT

The aerial hydraulic pump shall be mounted to the frame with a drive shaft from the PTO to the pump.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

HOIST SYSTEM

The boom shall be elevated or lowered by two (2) hydraulic lift cylinders. They shall be mounted one on each side of the boom using spherical bearings. The cap end of the cylinder shall be attached to the turret. The rod end shall be attached to boom ears on the side of the boom at a point located at least 140" from the turret pin to provide better boom stability.

In case of cylinder failure, one cylinder shall be capable of supporting the full load capacities of the platform.

Each lift cylinder shall have two (2) counterbalance valves that lock the cylinders in place when movement is stopped and provide smooth operation during raise and lower functions.

The range of elevation shall be -9 degrees to +75 degrees.

Y__N__

EXTENSION-RETRACTION SYSTEM

A full hydraulic powered boom extension and retraction system shall be provided utilizing three hydraulic cylinders synchronized by hydraulic valves. The extension/retraction cylinders shall be equipped with integral (on the cylinder) holding valves to prevent the cylinder from moving should a pressurized hydraulic line be severed at any point within the system.

Wear pads shall be provided between the telescoping sections for smooth operation. Wear pads shall be composed of high strength polymers with friction reducing additives.

Y__N__

ROTATION INTERLOCK SYSTEM

The apparatus shall be supplied with a rotation interlock system. This interlock system shall not allow the aerial to be rotated over the side of the apparatus if the stabilizers on that side are not fully deployed. The interlock system shall include a light and audible alarm that will activate when rotation is no longer allowed. Once rotation is stopped the interlock system shall allow the operator to rotate away from the stopping point without the use of an override. A manual override feature shall be provided that will allow the operator at the turntable the ability to override the interlock system. There shall be NO EXCEPTIONS to this interlock system since it is designed to protect and safeguard personnel and equipment.

The electrical components for the rotation interlock system box/module shall be located in the DC control panel which is positioned in the curbside forward body compartment.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

AERIAL SWIVEL WITH 5" WATERWAY

The aerial device shall be equipped with a swivel installed within the axial centerline of the turntable to allow 360 degree rotation of the aerial device. The swivel shall float on the turntable to prevent side loading. It shall have passages for the hydraulic lines from the hydraulic pump and oil reservoir to the aerial control valve bank, and for a 5" waterway down the center. The swivel shall also maintain electrical continuity of all necessary electrical circuits while ladder is rotating or when it is immobile. A minimum of thirty-six (36) collector rings shall be provided.

Y__N__

ROTATION SYSTEM

The turntable bearing shall be of 4-point contact ball construction. The bearing shall have a minimum of 46 mounting holes for attachment to the superstructure and turret. All fasteners shall be grade 8. The outer race of the turntable bearing shall be mounted to the top of the superstructure. The outer race shall have gear teeth to permit interaction with the rotational spur gear.

The turntable shall be bolted to the inner race which will be free to rotate 360 degrees continuously in either direction.

The turntable rotation shall be driven by two (2) rotation assemblies each consisting of a hydraulic motor, a hydraulically activated brake, and a planetary gear reducer. This system shall be capable of 360 degree continuous rotation of the fully extended boom in the direction of the platform water stream while maintaining the manufacturer's rated basket capacity. The angle of elevation shall not affect this performance. The hydraulically activated brake mechanism shall be capable of withstanding all side forces from water flow or sudden stopping of boom rotation. The rotational assembly shall be mounted on the left side of the turntable. (Assuming you are standing on the turntable looking at the boom.)

Y__N__

TURNTABLE ROTATION MOTOR COVER

An aluminum tread plate cover shall be provided over the boom rotation motors on the turntable.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

TURNTABLE

The turntable shall be constructed of High Strength Low Alloy structural steel and bolted to the inner race of the turntable bearing using grade 8 fasteners. The bearing mounting plate shall be machined to insure a smooth and flat bearing mounting surface. The turntable ears shall support the base section of the boom. There shall be a set of mounting brackets for the lift cylinders.

The standing deck of the turntable shall have aluminum grating in front of the main operator's control pedestal (console) and aluminum tread plate on the remainder.

There shall be a 42" high slip resistant, poly-elastomer material coated stainless steel handrail on the right side of the turntable, next to the control pedestal. (Standing on the turntable, facing the boom.)

The main operator's control pedestal shall be mounted on the street side of the turntable when the boom is in the stored position.

Y__N__

YELLOW PERIMETER MARKING

In accordance with NFPA 1901 chapter 15.7.1.6, the perimeter of the turntable not covered with a railing shall be marked with a one-inch wide safety yellow line to delineate the designated standing or walking surface area.

Y__N__

MANSAVER BAR

A Fire Research "Mansaver" bar shall be provided at the entrance to the turntable.

Y__N__

PEDESTAL COVER

A hinged aluminum tread plate cover shall be provided for the control pedestal. Two (2) gas springs shall hold the cover in either an open or closed position.

Y__N__

PEDESTAL COVER LIGHT

There shall be a TecNiq Eon LED lamp installed in the pedestal cover. The light shall be activated when the PTO is engaged.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

PEDESTAL COVER LATCH

There shall be a latch installed on the pedestal cover to assist in holding the cover closed.

Y__N__

CONTROL PEDESTAL INTERIOR WORKLIGHT

The interior of the turntable control pedestal shall have a TecNiq EON LED work light for control valve service visibility. It shall have a stand-alone toggle switch with label.

Y__N__

TURNTABLE CONTROL PEDESTAL (CONSOLE)

The aerial control console shall be located on the right side of the turntable facing the tip. The console shall be illuminated for night operation and shall have the following items clearly identified and conveniently located on or in close proximity to the console for ease of operation:

- Emergency stop push button with on-light stops all platform controllability
- Aerial overload chart
- Emergency override rotation switch with protective cover
- Throttle switch
- Emergency pump switch with protective cover
- Intercom system - allows communication between pedestal and end of aerial
- Three directional control handles for aerial functions

The three directional control valves shall control the elevation/lowering, clockwise/counter clockwise, and extension/retraction functions for the positioning of the aerial. The controls for the three aerial functions may be operated independently or simultaneously and shall be of the "deadman" type. A foot pedal locking feature shall be incorporated to insure the controls are non-operable unless the foot pedal is engaged when the function is being performed.

The display located in the pedestal shall include the following information:

- Low voltage (Red)
- Rung alignment (Green)
- Turntable aligned (Green)
- Aerial overload buzzer and light (Red)
- Rotation limit exceeded (Red)
- Cab avoidance (Red)
- Hydraulic system pressure
- Lower system pressure
- All warning information
- Aerial status
- Truck status
- Elevation indicator

Y__N__

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CAB AVOIDANCE

Cab avoidance shall be provided within the aerial electrical system that shall create an envelope around the cab to prevent the aerial from contacting the cab.

Y__N__

AERIAL OVERLOAD ALARM

An alarm horn and warning light shall be provided at the control pedestal and at the platform that shall sound to alert the operator should the load capacity of the aerial be exceeded. The alarm shall in no way restrict the further operation of the aerial. There shall be no exception to this safety requirement.

Y__N__

PUSH BUTTON SWITCH F/AIR HORNS ON AERIAL PEDESTAL

A push button switch for air horns shall be provided on the aerial pedestal.

Y__N__

PUSH BUTTON SWITCH FOR AIR HORNS IN AERIAL BASKET

A push button switch for air horns shall be provided in the aerial basket.

Y__N__

AERIAL DEVICE FOOT PEDAL

A foot pedal shall be mounted on the turntable floor at the base of the control pedestal. Depressing the foot pedal shall activate the aerial hydraulic control valve for operating the aerial device from the turntable pedestal. Depression of the foot pedal also allows the pedestal operator to override the platform control.

Y__N__

AERIAL ALIGNMENT LIGHT

There shall be a 4” round Truck-Lite model 4050A amber LED light recessed on the backside of the pedestal, viewable from the platform, to assist the operator’s alignment of the aerial device with the aerial cradle.

Y__N__

INCLINOMETERS IN CAB

Two (2) inclinometers shall be installed in the cab in view of the driver. Exact location shall be determined at the PreConstruction Meeting.

Y__N__

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Bidder Complies

AERIAL INTERCOM SYSTEM

The intercom shall be a Fire Research Model ICA-900 2 station with ACT clear voice sound system. The master shall be a push-to-talk station with 5-LED volume indicator lights and push button, arrow-up and arrow down, controls. The master unit shall be mounted on the turntable control pedestal. The hands free voice transmission slave unit shall be installed at the aerial tip or platform control console and always in transmit mode until interrupted by transmission from the master unit. The system stations shall be interconnected with shielded cable for static free operation in normal conditions.

Y__N__

BOOM CONSTRUCTION

The boom shall be constructed of steel on the main stage and aluminum on the telescoping first, second, and third stages. It shall be a totally enclosed box type welded construction design. It shall be able to withstand the stress of fully extended low angle positions combined with any positioning of full flow water stream capabilities

Teflon impregnated bearing pads shall provide a sliding surface for each section as it is extended or retracted. Wear pads shall have adjusting screws to set clearance without shims. The boom extension wear pads and boom pivot bushings shall not require grease.

Y__N__

PLATFORM CONSTRUCTION

The platform structure shall be completely constructed of welded aluminum. Any tubular aluminum shall have a minimum diameter of 1.5" and any square aluminum shall be a minimum of 1.5" x 1.5". It shall have a 42" high hand railing. The floor shall be non-skid extruded aluminum with a minimum area of 15 sq. feet. A 4" minimum kick plate shall surround the floor. An aluminum plate for mounting the platform air and intercom shall be mounted at the left rear wall. Aluminum mounting angles for the platform control box shall be mounted on the right side.

There shall be two (2) curved aluminum doors with aluminum heat shields located on the front corners of the platform. The doors shall have a self-latching lock and shall swing inward. A secondary latch shall allow the door to swing in or out.

There shall be four (4) individual tie-off rings incorporated into the platform to be used as mounting points for safety harnesses. Two (2) rings shall be on each side at the rear of the platform.

Two of the tie off rings shall be rated for one person rappelling (300 pounds). Total load shall not exceed the rated capacity of the aerial device.

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Bidder Complies

The platform shall be fastened to the third telescoping boom section by means of an “L” shaped aluminum welded assembly. The attachment point shall be at center point under the platform to provide for greatest ease in leveling the platform.

The platform shall be provided with a non-skid tread access ledge around the outside edge. The access ledge shall be a minimum width of 8”.

The construction of the platform being of aluminum and not painted steel shall reduce the maintenance cost of the platform.

Y__N__

SKID RESTS

A set of poly skid rests shall be located underneath the platform to protect mounted items from damage when the platform is set on the ground or a flat surface.

Y__N__

PLATFORM CONTROL STATION

A control station shall be located on the right side rear corner of the interior of the platform. The control station shall be constructed of aluminum.

Y__N__

CONTROL STATION LIGHTING

A TecNiq clear LED light shall be installed under the platform control joystick.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

PLATFORM CONTROLS

A single joystick control shall provide simultaneous operation of all three (3) boom movements. The control shall be a self-centering handle with an integral trigger type safety interlock switch. This switch shall work in conjunction with the safety interlock system at the main pedestal. The joystick control shall send a variable signal to the hydraulic valve at the main pedestal for the desired movements. It shall be mounted on the right rear corner of the platform so as to not interfere with any activities in the platform. It shall also allow constant observation of any obstacles due to directional hand movement without looking at the control.

The control shall be activated by turning on the platform control's switch at the main pedestal. It shall be deactivated by pushing the platform control switch "off" or by depressing the safety interlock foot pedal.

The platform joystick shall have 3 colored LED's with a speed control push-button. Pressing the button one time shall give a creep speed and the LED shall turn red. Pressing the button again, gives ½ normal speed and the LED turns yellow. Pressing the button again, gives normal speed and the LED changes to green. Pressing the button again returns the speed to creep with a LED color of red. Moving the joystick to center shall slowly reduce speed to zero. All speeds can be adjusted at final inspection to meet departmental requirements.

The control panel shall have the following switches:

- Basket Spot Lights (Boom & Stream Tracking)
- Basket Flood Lights (Optional)
- Basket Work Lights (Optional)
- Basket Warning Lights (Optional)

The control panel shall have the following indicator lights:

- Boom Overload Alarm
- Cab Avoidance Active
- Boom Aligned
- Must Use Manual Leveling
- Auto High Idle Active

Y__N__

City of Waltham Purchasing Department

PLATFORM LEVELING SYSTEM

The platform leveling system shall incorporate an electronic level sensing device that controls a proportional hydraulic valve. This system shall be capable of leveling the forward/rearward tilt of the platform regardless of the truck orientation. Leveling shall also be functional with the auxiliary back-up hydraulic system.

Hydraulic lines shall connect to a proportional control hydraulic valve. The output of an electronic level sensing device controls the proportional valve to position the leveling cylinders and maintain level of the platform. If the primary power is lost, the leveling electronics shall be powered with an auxiliary backup battery system that shall automatically engage. The auxiliary backup battery system shall have a gauge and test switch located on the control station.

The two (2) leveling cylinders shall be mounted at the rear of the platform. These cylinders shall incorporate dual pilot operated holding valves so as to hold them in place. An individual cylinder shall be capable of holding the weight of the platform, if necessary.

Y__N__

PLATFORM WATERWAY SYSTEM

A mounting flange for a deck gun shall be mounted in the front center of the platform structure. The waterway shall also be equipped with a manually operated 4” 150# flange “Slo-Close” worm gear shut-off valve mounted in the front center portion of the platform for a deck gun, 2000 GPM capacity and a 4” 150# flange base.

A water curtain assembly shall be mounted beneath the platform for protection. It shall be operated by a shut-off valve.

Y__N__

DISCHARGE

There shall be one (1) 2.5” coupling provided for one (1) 2.5” ball valve with cap in the waterline at the front center portion of the platform, under the discharge gun flange of the platform for an optional hand line set-up.

Y__N__

DISCHARGE REDUCER

2.5" FNST x 1.5" MNST chrome plated adapter shall be provided for the 2.5" discharge.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

AERIAL WATER SYSTEM

The aerial waterway shall be 5" schedule 40 aluminum pipe from the swivel to the telescopic waterway. A single aluminum telescopic waterway, which has been duranodic hard coat anodized inside and out (meeting MIL-A-8625), shall be provided and mounted to the side of the aerial boom. The telescopic waterway shall consist of a 4.75" I.D. base section tube, 4.25" I.D. second section tube and a 3.75" ID third section tube, and a 3.25" I.D. fly section tube. The waterway shall be 4" schedule 40 aluminum from the telescopic waterway to the platform waterway. The aerial waterway shall connect to the platform waterway with a 4" Victaulic coupling.

Y__N__

FORWARD BODY

A forward body module shall be provided between the back of the cab and the aerial superstructure. The forward body module shall house the outrigger controls and overrides, the waterway inlets/discharges, gauges and valves, as well as the turntable access steps.

A waterway inlet panel constructed of 14 gauge brushed 304 stainless steel shall be located just in front of the superstructure on both sides of the apparatus. All applicable waterway inlets/discharges, drains, gauges and controls shall be located on these panels.

On the left side of the forward body module, ahead of the waterway inlet panel, shall be a set of turntable access steps and handrails. Where applicable, Grip Strut® shall be used in the construction of the stepping surfaces. There shall be two (2) compartments stacked vertically just aft of the cab. The upper compartment shall be recessed back from the outside edge of the body and shall house the outrigger stabilizer controls. The lower compartment shall extend out to approximately the width of the cab and shall have a Grip Strut® stepping surface on top. The lower compartment shall be have a door frame to door frame measurement of 19.625" wide x 15.375" high, a clear door opening of 18" wide x 15.375" high and usable space of 21.875" wide x 17" high x 18.875" deep.

On the right side of the forward body module, ahead of the waterway inlet panel, there shall be an enclosed storage area with a vertically hinged door. This area shall measure 30.5" high x 20.25" wide x 17.75" deep. This shall be painted gray Zolatone with clear coat to match the other body side compartments. The door shall be double pan style with 'D' handle latch to match the other rear body hinged doors. The back corner shall be angled to give clearance for the exhaust. If right side outrigger controls or a right side discharge is selected for this location, the dimensions of this area shall be affected. There shall be no access to the turntable from this area.

The top of the forward body section shall be covered with 1/8" aluminum tread plate. Each compartment shall have a vertically hinged, lap type, double panel construction stainless steel door.

Y__N__

YELLOW PERIMETER MARKING

City of Waltham Purchasing Department

Bidder Complies

In accordance with NFPA 1901 chapter 15.7.1.6, the perimeter of the roof of the forward body shall be marked with a one-inch wide safety yellow line to delineate the designated standing or walking surface area.

Y__N__

WATERWAY INLETS

A 5" inlet shall be provided on the each side of the vehicle. All inlet piping below the swivel shall be stainless. Each inlet shall be trimmed with 14-gauge brushed stainless steel garnish rings. The inlets shall each have a 5" manually operated butterfly valve.

There shall be a 1-1/2" drain valve provided. The drain shall be recessed behind the street side panel with the control extending through the panel and located along the bottom. The drain control shall be properly labeled. The water discharged from the drain shall be routed so it drains below the chassis frame rails.

A 3/4" Auto Drain shall be provided as well to drain water after the system pressure is released. This drain shall remain open until the system is pressurized again.

A 2-1/2" intake relief valve shall be permanently installed in the inlet piping. 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 components and the operator.

Y__N__

LEFT SIDE WATERWAY INLET FITTINGS AND CAPS

WATERWAY ADAPTER

A 5" FNPT X 5" MNST straight chrome plated brass rocker lug adapter shall be provided for the waterway.

Y__N__

WATERWAY ELBOW ADAPTER

A 5" MNST X 4" Storz straight hard anodized aluminum 30 degree elbow shall be provided for the waterway.

Y__N__

WATERWAY CAP

A 4" Storz hard anodized aluminum cap shall be provided for the waterway.

Y__N__

RIGHT SIDE WATERWAY INLET FITTINGS AND CAPS

WATERWAY ADAPTER

City of Waltham Purchasing Department

Bidder Complies

A 5"FNPT X 5" MNST straight chrome plated brass rocker lug adapter shall be provided for the waterway.

Y__N__

WATERWAY ELBOW ADAPTER

A 5" MNST X 4" Storz straight hard anodized aluminum 30 degree elbow shall be provided for the waterway.

Y__N__

WATERWAY CAP

A 4" Storz hard anodized aluminum cap shall be provided for the waterway.

Y__N__

FLOW METER

A flow meter utilizing a paddlewheel sensor shall be installed at the aerial operators pedestal position and read from the pedestal display.

Y__N__

MONITOR

An Akron Apollo™ model 3426, stick controlled monitor shall be located in front of the fixed center portion of the bucket between the doors.

The entire water system shall be capable of delivering 1250 gallons per minute at any angle of elevation, up to full extension. The monitor can go 45 degrees above and below the horizontal.

Y__N__

NOZZLE

An Akron model 1745 MasterStream Turbomaster nozzle shall be provided. The nozzle shall be adjustable to four constant flow settings.

Y__N__

STACKED TIPS

One set of Akron model 2499 quad stacked deluge tips shall be provided.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

DISCHARGE PIPE

An Akron Brass model 3488 Pyrolite 2.5" F x 2.5" M discharge pipe shall be provided.

Y__N__

AERIAL TRACKING LIGHT(S)

One (1) Unity AG 6" LED spotlight(s) shall be installed on the base section of the aerial device near the turntable to illuminate the aerial device in any position of operation.

Aerial tracking light shall be mounted on the right side of the aerial device.

One (1) aerial light(s) shall be switched at the turntable pedestal.

Y__N__

PLATFORM LIGHTS

There shall be two (2) Fire Research Evolution II LED model FCA300-V20 floodlights installed under the platform facing the front. One light shall be on the left side of the front of the platform, the other on the right side.

They shall be installed using the Under Aerial model 300 mounting brackets which shall allow the lamps to be aimed forward or downward. The hinge style mounting brackets shall attach to the top of the lamp head and adjust 90 degrees. The light shall have a profile of less than 3 7/8" with the brackets set at 0 degrees and less than 6 7/8" with the brackets adjusted to 90 degrees. Wiring shall extend from the rear of the lamp head.

The lamp head shall have eight (8) ultra-bright white LEDs. It shall operate at 12/24 volts DC, draw 13/6.5 amps, and generate 20,000 lumens. The lamp head shall direct 50 percent of the light onto the action area while providing 50 percent to illuminate the working area. The lamp head shall incorporate heat-dissipating fins and be no more than 6 1/2" deep by 3 7/8" high by 11 1/2" wide. Lamp head and brackets shall be powder coated white. The lenses shall be constructed of clear hard-coated Lexan.

Y__N__

AERIAL LIGHT SWITCH(ES)

One (1) 12 volt aerial light(s) shall be switched at the turntable pedestal and the platform controls using momentary contact switches and a relay. This shall allow the lights to be turned on or off from either location as long as the light head on/off switch (if provided) is in the "on" position.

Y__N__

City of Waltham Purchasing Department

TELESCOPIC LIGHT ON REAR OF PLATFORM

One (1) Fire Research SPECTRA MAX-S LED model FCA542-B28 side mount pull up telescopic light shall be installed on the outside of the platform, at the rear. Bracket offset and outer pole dimension shall be determined by the factory and is dependent on other aerial options selected by the Fire Department.

The lamp head shall have 72 white LEDs. It shall operate at 120 volts AC, draw 2.8 amps, and generate 28,000 lumens of light. The lamp head shall have a unique lens that directs flood lighting onto the work area and focuses the spot light beam into the distance. It shall have the ability to select 36 LEDs to provide a spot light beam, 36 LEDs for flood lighting, or 72 LEDs for a flood/spot pattern. The lamp head angle of elevation shall be adjustable at a pivot in the mounting arm and the position locked with a round knurled locking knob. The lamp head shall be no more than 5 3/8" high by 14" wide by 3 3/4" deep and have a heat resistant handle. The lamp head and mounting arm shall be powder coated.

Telescopic light shall be mounted on the left side on the rear of the platform.

One (1) 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.

There shall be an on/off switch provided on the lamp head.

One (1) light(s) shall be activated with the light switch.

Y__N__

120 VOLT SYSTEM ON TOWER

120 volt wiring shall be provided to the platform. The wiring shall run from a junction box mounted below the turntable through the collector ring assembly.

Y__N__

PLATFORM OUTLETS

Two (2) L5-20R 20 amp outlets shall be installed in the lower left corner of the platform (standing in platform and looking out, away from the boom). Each outlet shall be covered, labeled, and weather resistant. Each outlet shall be separately powered by a 120 VAC non-GFCI breaker.

Y__N__

City of Waltham Purchasing Department

CAT TRACK

A Cat Track shall be provided that contains Synflex hydraulic hose for the hydraulic leveling system. There shall also be electric cables for the intercom, 12 volt DC power and 12 volt DC controls. The hoses and cables shall be continuous from the turntable to the platform with no reels. There shall be electrical connectors and hydraulic connections at the turntable and platform that allow for easy maintenance. The Cat Track shall include cable for 120 volt AC circuit(s).

Y__N__

BREATHING AIR SYSTEM

A breathing air system shall be provided. The system shall be composed of one (1) 509 cubic feet, 6000 PSI air cylinder and two (2) breathing air stations, one (1) 50 foot hose for refilling the air cylinder, and two (2) gauge panels.

The air cylinder shall be mounted to the base section of the aerial device, mounted the same side as the pedestal. The cylinder shall connect to a "T" that delivers high pressure to the gauge panel at the turntable and the panel at the platform. All hose shall meet NFPA requirements for breathing air.

The breathing air stations shall be located at the turntable pedestal and at the platform. The station on the turntable pedestal shall be equipped with a complete set of quick connect fittings for one (1) person. The station on the platform shall be equipped with a manifold and quick connect fittings for three (3) people.

There shall be two (2) gauge panels; one next to the air bottle and one on the platform. The gauge panels shall include the following: an air supply pressure gauge, a pressure regulator, a regulated pressure gauge, a low pressure alarm and indicator light when air is below 20%. The panel by the turntable pedestal shall have a system fill valve.

The air bottle shall be factory painted yellow as received from the manufacturer.

Breathing air couplings shall be manufacture shall be determined at the PreConstruction.

Y__N__

AIR QUALITY TESTING & CERTIFICATION

In accordance with NFPA 1901 current edition, an air sample shall be drawn from the breathing air system after installation has been completed. The air shall be tested and certified by a third party to meet air quality standards, as defined by NFPA.

Y__N__

City of Waltham Purchasing Department

BREATHING AIR LEVEL MONITORING SYSTEM

The apparatus shall be equipped with a Class 1 "Air Minder" system to give a visible indication of the air remaining in the breathing air system. The system shall also provide a visual and audible warning when the level becomes too low.

The Air Minder system shall include:

1. A weatherproof pressure transducer mounted in the air line between the air bottles and the high pressure regulator.
2. A remote display mounted on the turntable control pedestal. This display shall consist of a weatherproof housing with a black non-reflective bezel and a bright red LED readout (readable in sunlight), scaled 0 to 100, and labeled "% Air Remaining". The display shall incorporate a low pressure warning circuit, which causes the display to flash when 20% maximum air bottle capacity remains in the air system and sounds an audible alarm when the remaining air level drops to 10% of maximum air bottle capacity.
3. Appropriate wires and connectors to hook up the display to the pressure transducer and to the vehicle's 12 volt electrical system.
4. An audible horn mounted near the display.

An automatic low pressure switch mounted near the display will turn off the power to the Air Minder warning horn when the supply line pressure drops below 5 PSI.

Y__N__

LIFTING EYE

A lifting eye shall be mounted to the bottom of the main stage boom as close to the end as feasible. A plaque shall be installed on each side of the boom stating the lifting capacity of the eye. The lifting eye shall have a capacity of 5,000 pounds. This lifting eye shall only be used when the boom is fully retracted, the waterway completely void of any water and no personnel are in the platform.

Y__N__

LIFTING EYES

Two (2) lifting eyes made of 1" aluminum rod shall be welded to the bottom of the platform "L" bracket. These eyes shall each have a capacity of 500 lb and a combined capacity of 1000 lb. A plaque shall be installed stating the lifting capacity of these eyes. Both lifting eyes must be used when carrying an item so as to evenly distribute the weight on the platform and boom section. Any weight picked up by these lifting eyes must be calculated as part of the overall platform weight capacity.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

ESCAPE LADDER

As a means of providing emergency escape from the platform, a telescoping ladder with serrated rungs and folding hand rails shall be mounted on top of the boom. The erected hand rail height shall be 12". This ladder may be utilized for emergency transfer of manpower.

A ladder with 12" handrails shall be mounted in the rear center portion of the platform for access to the emergency escape ladder.

Y__N__

TOWER SIGNS

A painted sign shall be mounted to each side of the aerial device and adequately braced against vibration. Each sign shall be 15" tall and 144" long.

Color of sign shall be Job Color Red.

Y__N__

PLATFORM STOKES MOUNTING BRACKETS

The platform shall be equipped with the necessary brackets and hardware to hold a Stokes basket centered over the discharge gun. These brackets shall be removable and shall be normally stored in a compartment or on top of the truck. The brackets shall be used at the fire or emergency scene and shall not be used for carrying the Stokes basket while in transit.

Y__N__

PLATFORM HOSE BIN

A hose bin designed to hold approximately twenty feet (20') of 1-3/4" attack hose shall be installed on the walkway at the front of the platform centered underneath the monitor. The bin shall have a fold down door to allow for easy discharging of the hose.

Y__N__

PLATFORM TOOLBOX

One (1) toolbox shall be provided to the rear of the platform on the right side. The box shall be constructed of aluminum tread plate and have a cover. The interior dimensions shall be approximately 15.75" x 13.00" x 24.00" deep.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

MOUNTS FOR D-HANDLED PIKE POLE ON BOOM

Mounts for the following Firehooks Unlimited pike poles shall be provided atop the Cat Track assembly so that they are accessible from the basket:

- One (1) APH-8 with D-handle
- One (1) APH-12 with D-handle

Mounts shall consist of a 3/16 aluminum treadplate 'pocket' for the pike pole head and a Pac Tools #1004 HandleLok to secure the D-handle.

Y__N__

PLATFORM MOUNTED HAND TOOLS

The following Firehook Unlimited handtools shall be provided and mounted in the platform:

- FA-8 Flat Head Axe
- FAP-8 Pick Head Axe
- Pro-Bar 30

The following Pac Tools brackets shall be used for mounting:

- Flat Head Axe Kit #K5011
- Pick Head Axe Kit #K5012
- Two (2) #1004 HandleLoks for the Pro-Bar

Y__N__

City of Waltham Purchasing Department

HYDRAULIC GENERATOR

A Harrison 15.0 kW hydraulic generator system shall be provided and installed on the apparatus. There shall be a generator enable switch installed on the cab dash. The system shall be capable of producing the nominal output power of 15.0 kW, 120V/240V, single phase, 60 Hz. The generator shall be installed per the manufacturer recommendations and shall be capable of supplying full power during all engine speeds or operation modes.

The generator shall be placed in a tray frame assembly which affords protection to the components and provides a unitized mounting module containing the motor/generator, reservoir, oil cooler, filtration system, and a manifold containing a cross-port check valve plus system relief valve. The generator shall be a commercial type with a heavy-duty bearing and of brushless design to ensure low maintenance. The reservoir shall include an oil level gauge, oil temperature gauge, fill cap, fill strainer, and a boost unit to provide a positive pressure to the pump suction port. The reservoir shall be equipped with a remote drain and valve below the frame rails. The generator and hydraulic motor shall be close coupled and permanently aligned using a Morse taper with a through bolt to secure the motor to the generator.

The PTO driven hydraulic pump and motor shall be of axial piston design to provide low internal leakage and a high degree of frequency stability. The pump will match to the system with the proper orifice, pressure compensator and load sensing to provide a stable output over the rated speed range of the pump and with electrical loads from no load to full-load. The PTO ratio shall be selected to allow operation throughout the entire engine RPM range; idle to full throttle.

A display meter consisting of (4) numeric LED displays shall be used. The meter shall simultaneously display system voltage, frequency and amperage in each of the two 120V legs. The display meter shall be located in close proximity to the breaker box.

A high temperature visual indicator and audible alarm shall be provided and installed.

When properly installed, the system shall be warranted by the manufacturer for a period of not less than two years or two thousand hours, which ever should come first.

The hydraulic generator shall be located in the open bin on top of the body near the boom support.

Y__N__

GENERATOR/INVERTER TEST AND CERTIFICATION

The generator/inverter shall be third party tested at the manufacturer's facility and shall conform to NFPA requirements and standards. Copies of all tests shall be provided with the delivery documentation.

Y__N__

HARRISON HYDRAULIC GENERATOR WARRANTY

City of Waltham Purchasing Department

Bidder Complies

The Cummins Harrison hydraulic generator shall have a 6 year / 1000 hour limited warranty from the manufacturer.

Y__N__

BREAKER BOX

A twelve (12) place Square D brand, or approved equal, gray colored breaker box shall be provided and installed in the front upper left hand side compartment. Manual reset circuit breakers, matching the rated output of each specific outlet or device, shall be provided. All power supply assembly conductors, including neutral and grounding conductors from the line voltage power source to the circuit breaker box shall have an equivalent amperage rating and shall be sized to carry not less than 115 percent of the amperage of the nameplate current rating of the power source. Power supply conductors shall be run in nonmetallic liquid tight flexible conduit or type SO/SEO cord with a WA suffix. Conduit shall have a temperature range of -67°F (-55°C) to 221°F (105°C). Wiring conductors from the circuit breaker box to the individual outlets and devices shall be sized in accordance with NFPA 70, *National Electrical Code* requirements. Branch circuit wiring conductors shall be run in (1) metallic or nonmetallic liquid tight flexible conduit rated for use in a temperature range of -67°F (-55°C) to 221°F (105°C) with stranded copper wire rated for wet locations and temperatures not less than 194°F (90°C) or (2) Type SOW, SOOW, SEOW, or SEOOW flexible cord, rated at 600 volts and at temperatures not less than 194°F (90°C). A power source specification label shall be permanently attached to the apparatus near the operators control panel.

The door of the breaker box shall have a side hinge.

Y__N__

120 VOLT SHORELINE POWERED RECEPTACLE IN BODY COMPARTMENT(S)

A 120-volt, 20 amp, 3-wire receptacle shall be provided inside two (2) body compartment(s) in accordance with NFPA guidelines. A brushed stainless steel cover plate shall be provided to protect the receptacle. The receptacle shall be powered by the shorepower inlet and labeled accordingly.

The receptacle(s) shall be located: TBD @ PreConstruction

NEMA type (number) of each connection shall be 5-20R (20 Amp) Non-twist-lock duplex receptacle.

Y__N__

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120 VOLT SHORELINE POWERED RECEPTACLE(S) IN CAB INTERIOR

One (1) 120-volt, 20 amp, 3-wire receptacle(s) shall be provided in the cab interior in accordance with NFPA guidelines. A brushed stainless steel cover plate shall be provided to protect the receptacle. The receptacle shall be powered by the shorepower inlet and labeled accordingly.

The receptacle(s) shall be located: TBD @ PreConstruction.

NEMA type (number) of each connection shall be 5-20R (20 Amp) Non-twist-lock duplex receptacle.

Y__N__

AUTO TRANSFER RELAY

A Kussmaul 091-134 "Auto Interlock II" power transfer relay shall be provided to automatically transfer the 120 volt from the shoreline to the generator when the generator is started. When the generator is shut down, the load is automatically returned to the shoreline. The associated receptacles shall be labeled accordingly.

Y__N__

CORD REEL(S)

One (1) Hannay Model ECR1618-17-18 power rewind cord reel(s) for live electric cable shall be provided. The reel(s) shall be 12 volt electric rewind and be equipped with an electrical collector ring with a minimum #10 gauge, 3-conductor wiring. Capacity of each reel shall be a minimum of 200 feet 10/3 gauge or 250 feet of 12/3 gauge electric cable.

The AN250 motor shall take 60 seconds to rewind 100 feet.

The cord reels shall be equipped with a 'Comet Brake'.

The cord reels shall be located on top of the body beneath the boom just forward of the basket.

Y__N__

CORD REEL CABLE(S)

One (1) 200 foot length(s) of 10/3 type SO electric cable shall be provided and installed on the cord reel.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

CABLE STOP

A molded plastic spherical type stop shall be provided near the end of the cable. It shall prevent damage to the electrical plug or connection when the reel is rewound. Stop shall be drilled for the correct cable size. It shall be a two piece design that clamps over the cable by tightening two bolts. Bolts shall be recessed into the ball to keep them from damaging the roller assembly when it is fully retracted.

Y__N__

TWIST-LOCK FEMALE PLUG(S) ON CORD REEL CABLE

One (1) Hubbell model HBL2313SW 120V/20A heavy duty twist-lock female plug(s) with watertight safety-shroud and Insulgrip® connector body shall be provided. The plug(s) shall be installed on the working end of the cord reel cable(s).

Y__N__

ELECTRICAL JUNCTION BOX

An Akron Brass 4-receptacle junction box shall be provided for distribution of electrical power on the fire ground. The box shall be constructed of aluminum and shall be completely powder coated in high visibility yellow with gray hinged protective receptacle covers and the full length carry handle. Internally lighted faceplates shall provide sufficient light to make connections and alert the crew that the box is in "power-on" status. The junction box shall have dimensions of 9.25" long x 5.5" wide x 8.5" high. The box shall be equipped with a 12-inch pigtail with a wire mesh cord grip and a L5-20 connection.

A total of four (4) single receptacles shall be provided; two (2) NEMA L5-20R twist-lock and two (2) NEMA 5-20R household, straight blade. Each receptacle shall be rated for 20 amps at 125 Volts.

A mounting box, with brushed stainless finish, shall be provided for the junction box.

Y__N__

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CAB FRONT BROW MOUNT SCENE LIGHT(S)

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

The SPA807 mount shall be on the center of the cab front brow.

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

Y__N__

LIGHT HEAD AND BRACKETS FINISH

One (1) FRC light head(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__

CAB SIDE BROW LAMP MOUNTS

Two (2) FRC model SPA850 mounts shall be installed on the cab side brows, one on each side.

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

Y__N__

LIGHT HEAD AND BRACKETS FINISH

Two (2) FRC light head(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.

Y__N__

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Bidder Complies

CAB SURFACE MOUNT SCENE LIGHT(S)

Two (2) surface light mount(s) for Fire Research Spectra 900 lamp head(s) shall be installed on the cab.

Cab surface mount shall be located 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 light head(s) shall be provided. The lamp head shall have twenty-four (24) ultra-bright white LEDs. The lamp head shall be 6-3/4" high by 9" wide and have a profile of less than 1-3/4" beyond the mounting surface. The lamp head housing shall be aluminum with a chrome colored bezel.

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

Y__N__

PORTABLE SCENE LIGHT(S)

Four (4) FRC model 700 portable scene light(s) with ground base shall be provided. The portable scene light is equipped with a wire lamp guard as standard except with Spectra lamp heads, when it is unavailable.

Model 700 portable base mount(s) shall be located atop the high body compartments, two (2) each side.

Four (4) FRC "Spectra" SPA100-K20, 120 volt AC, 2 amp, 20,000 lumen LED light head(s) shall be provided. The lamp head shall have sixty (60) ultra-bright white LEDs, 48 for flood lighting and 12 to provide a spot light beam pattern. The lamp head angle of elevation shall be adjustable at a pivot in the mounting arm and the position locked with a round knurled locking knob. The lamp head shall be no more than 5-3/8" high by 14" wide by 3-3/4" deep and have a heat resistant handle.

Y__N__

LIGHT HEAD AND BRACKETS FINISH

Four (4) FRC light head(s) and light mounting bracket(s) shall have a white powder coat finish.

Two (2) 120 volt light(s) shall be switched at the cab dash.

Four (4) FRC quick release bracket(s), model 703, shall be provided to mount the portable base mount(s) to a flat surface on the apparatus.

Four (4) FRC mount(s) shall have a Nema L5-20, 3-prong twist-lock plug installed.

Y__N__

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Bidder Complies

LITTLE GIANT LADDER SYSTEM(S)

One (1) Little Giant Type 1A, model 17 aluminum ladder system(s) shall be provided.

Little Giant ladder shall be located atop the body just forward of the transverse compartment. Ladder shall be deployed from the Officer's side.

Y__N__

LADDER BRACKETS

The following equipment shall be provided and installed for mounting of a Little Giant ladder. A four-sided retaining box constructed of aluminum tread plate shall be installed to hold the top of the ladder. Two (2) aluminum tread plate locating angles shall be provided to capture and hold the ladder base. A retaining strap with push button buckle shall also be provided to lock down the ladder.

Ladder brackets shall be located just forward of the transverse compartment. Ladder shall be deployed from the Officer's side.

The model of Little Giant ladder is: Type 1A, Model 17.

Y__N__

LADDER BAYS

Two (2) additional ladders bays shall be provided, one on each side of the torque box. The bay on the right shall be capable of holding up to a 20 foot ladder, the bay on the left shall be capable of holding up to a 16 foot ladder. Ladders stored in the side ladder bays shall be accessed through the main ladder compartment doors.

Y__N__

LADDER COMPARTMENT DOORS

Smooth aluminum double doors shall be provided at the rear of the ground ladder compartment. The doors shall be of double panel construction and shall be held open with a door holder and shut with a "D" ring with 2-point rod locks. The primary door shall lap the secondary door and the compartment lights shall be activated when the primary door opens. The door switch shall be integrated with the door ajar hazard warning system.

Y__N__

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Bidder Complies

LADDER BAY LIGHTS

The ladder bay opening shall be illuminated by two (2) LED lights from Triton, model TLPC. Each weatherproof light shall have 15 LED bulbs and a lens that measures 1.125” in diameter. The lights shall be activated by opening the ladder bay doors. The door switch shall be integrated into the door ajar hazard warning system.

Y__N__

PIKE POLE(S)

Two (2) 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.

Y__N__

PIKE POLE(S)

Two (2) 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__

PIKE POLE(S)

Two (2) 12 ft. Fire Hooks Unlimited APH-12 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__

"D" HANDLE(S) FOR PIKE POLE(S)

Four (4) pike pole(s) shall be provided with a "D" ring handle.

The following pike poles shall be equipped with the 'D' handles:

- Two (2) APH-6
- One (1) APH-8
- One (1) APH-12

Y__N__

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Bidder Complies

PVC PIKE POLE MOUNT(S)

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

The mounting tube(s) shall be located in the ground ladder compartment.

Y__N__

WHEEL CHOCKS

Four (4) Worden HWG wheel chocks shall be furnished and shipped loose by the apparatus manufacturer.

Four (4) U815 holders shall be installed by the manufacturer, one in front of and one behind the rear wheel(s) on both sides of the body.

Y__N__

PAINT 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 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 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 to 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

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Bidder Complies

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 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 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__

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Bidder Complies

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

Y__N__

QUALITY STANDARDS

The finish quality and appearance shall be in accordance with the Manufacturer's Paint Quality Standards for dirt, gloss, reflectivity, clarity and depth of image. The standard is available to the customer at any time upon request.

Y__N__

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, from pump house to front swivel. (when furnished).

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Bidder Complies

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.

Y__N__

TWO TONE CAB PAINT

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.

Y__N__

BODY PAINT, SINGLE COLOR

City of Waltham Purchasing Department

Bidder Complies

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.

Y__N__

FORWARD BODY COMPARTMENT PAINT

The forward body compartment exterior shall be painted job color following the Top Coat application process for a single color. The interior of the compartments shall be painted gray Zolatone following the Zolatone Coat application process.

Y__N__

ACORN NUTS

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.

Y__N__

STABILIZER & SUPERSTRUCTURE PAINT

All six (6) stabilizers and the superstructure on the apparatus shall be painted job color. Single Coat application process shall be used to apply the color selected in this order using direct gloss paint on identified parts.

Y__N__

TURNTABLE & BOOM PAINT

The turntable and the boom shall be painted job color Metallic Silver. Single Coat application process shall be used to apply the color selected in this order using direct gloss paint on identified parts.

Y__N__

BOOM SUPPORT PAINT

The boom support shall be painted job color. Single Coat application process shall be used to apply the color selected in this order using direct gloss paint on identified parts.

Y__N__

TORQUE BOX PAINT

The interior and exterior of the torque box shall be painted gloss black following the Primer/Surface Coating Process for Single Coat Application.

Y__N__

HYDRAULIC TANK PAINT

City of Waltham Purchasing Department

Bidder Complies

The hydraulic tank shall be painted gloss black. Single Coat application process shall be used to apply the color selected in this order using direct gloss paint.

Y__N__

CHEVRON STRIPING

The entire rear face of the body, including the rear compartment hinged door, shall be covered with 6" wide 3M™ Diamond™ Grade reflective striping in an alternating chevron pattern with the stripes running at a 45 degree downward angle from the top center of the vehicle.

The chevron striping shall be alternating Scotchlite™ Red 983-72NL and Scotchlite™ Yellow 983-71NL.

Y__N__

REAR CORNER GUARDS

Brushed stainless steel 0.75" x 0.75" corner guards shall be installed after the Chevron is applied to protect the edges.

Corner guards shall be applied to the outside vertical edges where the body sides meets the body rear.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

ELECTRONIC OPERATOR'S & PARTS MANUAL

A binder shall be supplied that has CDs and paper documents as listed below.

The binder shall contain 2 duplicate CDs. Each CD shall have:

- Operations & maintenance instructions for items on the vehicle, not including the vendor literature
- Vendor Literature, as available, for purchased components.
- Electrical diagrams including charts illustrating the individual wire color, number code, and function.
- Parts manuals.
- Parts drawings and an overall vehicle layout.
- Certificates
- Warranties

Printed documents shall include:

- Operations & maintenance instructions for items on the vehicle, except the engine.
- Operations & maintenance instructions for engine.
- Certificates of independent test results.
- Warranty documents.
- Manufacturer's record of construction details and engine power curve.
- Vehicle final alignment report.

One (1) to two (2) CD manuals for the water pump shall be included, if there is a pump on the unit, and as provided by the pump manufacturer. Additional CDs and paper documents, as provided by other equipment suppliers, shall also be included.

Y__N__

LETTERING & STRIPING

The apparatus shall be lettered and striped as close as possible to existing *Waltham Fire Department* apparatus.

Y__N__

City of Waltham Purchasing Department

Bidder Complies

LOOSE EQUIPMENT

The following loose equipment from PAC Tools shall be supplied with the proposed apparatus:

<u>NOMENCLATURE</u>	<u>PART #</u>	<u>QUANTITY</u>
1) HOOKLOKS	1001	1
2) FLEXMOUNT	1002	2
3) FLEXMOUNT SHORT	1002-2	1
4) TOOLOK	1003	14
5) HANDLELOK	1004	33
6) STOW N LOK SHORT	1005 S	2
7) UNIVERSAL HANGER	1019	10
8) SPREADER BASE	1026	2
9) GM HOOK	1028	4
10) HEAVY RESCUE POCKET	1035	2
11) 4" STORZ LOK	1040-4	11
14) EXT. SUPER ADJUSTAMOUNT	1060	6
15) JUMBO LOK	1070	2
16) ADJUSTAMOUNT KIT	K5006 Y	1
17) EXTENDED ADJUSTAMOUNT KIT	K5008 Y	2
18) 8 LBS SLEDGE KIT	K5010	2
19) PHOENIX TOOL MOUNTING KITS	K5020-2PH Y	2
20) EXT. SUPER ADJUSTAMOUNT KIT	K5060 PT Y	2
21) UNISTRUT SHALLOW CHANNEL	2019	8 ft
22) TRACLOK INSERTS & SCREWS		4 PACKS
23) CHANNEL NUTS	2010	20

Y__N__

City of Waltham Purchasing Department

Bidder Complies

LOOSE EQUIPMENT

The following loose equipment from Ziamatic Corp. shall be supplied with the proposed apparatus:

<u>NOMENCLATURE</u>	<u>PART #</u>	<u>QUANTITY</u>
1) ROUND COOLER MOUNTING BRACKET	QM-RCMB	1
2) GAS CAN MOUNT	QM-OSC-1	2
3) BOLT CUTTERS	BCB	1
4) BOLT CUTTERS LARGE	BCB-L	1
5) SHOVEL HOLDER	QM-SH	1
6) ELECTRICAL CORD HOLDER	QM-ECH-1	5
7) PORTABLE GENERATOR MOUNT	QM-PG-1	2
8) CHAIN SAW MOUNTS	QM-CSM-L	2

Y__N__

City of Waltham Purchasing Department

Bidder Complies

LOOSE EQUIPMENT

The following loose equipment from South Park Corp. shall be supplied with the proposed apparatus:

<u>NOMENCLATURE</u>	<u>PART #</u>	<u>QUANTITY</u>
1) 1.5" RAISED MOUNTING PLATE	RMP 4904AC	2
2) 2.5" RAISED MOUNTING PLATE	RMP 4906AC	6
3) 3" RAISED MOUNTING PLATE	RMP 4908AC	2
4) 4.5" FEMALE MOUNTING PLATE	FMP 4712AC	7
5) 4.5" RAISED MOUNTING PLATE	RMP 4912AC	1
6) 6" RAISED MOUNTING PLATE	RMP 4916AC	10
5) 5" RAISED MOUNTING PLATE	RMP 4914AC	2
6) 2.5" FEMALE MOUNTING PLATE	FMP 4706AC	1
7) WRENCH HOLDER SET	WH76301A	1
8) 6" FEMALE MOUNTING PLATE	FMP 4716AC	2
9) 5" FEMALE x 6" MALE ADAPTER	LHA4084AC	2

Y__N__

City of Waltham Purchasing Department

Bidder Complies

MANUFACTURER'S LIMITED WARRANTY

A manufacturer's limited two (2) year warranty for parts and labor shall be provided.

Y__N__

CAB FIFTEEN YEAR STRUCTURAL LIMITED WARRANTY

A manufacturer's cab limited fifteen (15) year structural warranty shall be provided.

Y__N__

STAINLESS STEEL BODY FIFTEEN YEAR STRUCTURAL LIMITED WARRANTY

A manufacturer's limited stainless steel body fifteen (15) year structural warranty shall be provided.

Y__N__

AERIAL DEVICE TWENTY YEAR STRUCTURAL LIMITED WARRANTY

A manufacturer's limited aerial twenty (20) year structural warranty shall be provided.

Y__N__

CHASSIS FRAME RAIL & CROSS MEMBER STRUCTURAL LIMITED LIFETIME WARRANTY

A manufacturer's limited lifetime frame rail and cross members structural warranty shall be provided.

Y__N__

PAINT/CORROSION LIMITED WARRANTY

A manufacturer's limited pro-rated paint six (6) year warranty shall be provided.

Y__N__

Trade In 2002 E-ONE HP 95 Mid Mount Aerial

The Bidder will evaluate and offer a trade in price for the above vehicle which the Waltham

Y__N__

Fire Department will make available for inspection on or off premise.

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 seat, 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/Zip _____ 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 or 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, Arial Apparatus on a Custom Chassis with a Stainless Steel Cab and Body and the Name of your company**

PRICE SHEET

PLACE IN A SEPARATE SEALED ENVELOPE

My company proposes to deliver, as specified in the RFP, an **Arial Apparatus on a Custom Chassis with a Stainless Steel Cab and Body** for the not to exceed price of:

\$ _____

And in words:

My Company Acknowledges receipt of addenda #: _____, _____, _____, _____, _____, _____,

Company: _____

Authorized Signature: _____

Print Name: _____

Title: _____

Date: _____