

Request for Proposal

Town of Goffstown, New Hampshire



Fire Department Tower Ladder Fire Truck

PROPOSALS DUE DATE/TIME: APRIL 30, 2009 - NOT LATER THAN 2:00 PM
MANDATORY PRE-PROPOSAL MEETING: APRIL 9, 2009 AT 9:00 AM

April 2009

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PUBLIC / LEGAL NOTICE:



Town of Goffstown, New Hampshire

REQUEST FOR PROPOSALS

New Tower Ladder Fire Truck

The Town of Goffstown is currently seeking Proposals for (1) New Tower Ladder Fire Truck for the Fire Department. Vehicle specifications can be obtained from the Goffstown Fire Department, 18 Church Street, Goffstown, NH 03045, phone: (603) 497-3619 or from the Town's web site <http://www.goffstown.com>. All submissions are due by APRIL 30TH, 2009, 2p.m. at the Goffstown Town Hall, 16 Main Street (Town Selectmen's Office), Goffstown, NH 03045. There shall be a mandatory pre-proposal meeting on APRIL 9th, 2009 (9 am), at 18 Church Street, Goffstown, NH. The Town reserves the right to reject any or all proposals or any part thereof, to waive any formality, informality, information and/or errors in the proposal, to accept the proposal considered to be in the best interest of the Town.

GENERAL TERMS AND CONDITIONS

PREPARATION OF PROPOSALS:

Proposals shall be submitted on the forms provided and must be signed by the Proposer or the Proposer's authorized representative. The person signing the proposal shall initial any corrections to entries made on the proposal forms.

Proposers must quote on all items appearing on the proposal forms unless specific directions in the advertisement, on the proposal form or in the special provisions allowed for partial Proposals. Failure to quote on all items may disqualify the proposal. When proposals on all items are not required, Proposers shall insert the words "no proposal" where appropriate.

Alternative proposals will be considered, unless otherwise stated, only if the alternate is:

1. Described completely, including, but not limited to, sample(s), if requested, and specifications sufficient so that a comparison to the request can be made; and
2. Submitted as part of the base proposal response, i.e. it shall not be a separate document which could be construed as a second proposal.

Unless otherwise stated in the Request for Proposal (RFP), the Proposer agrees that the proposal shall be deemed open for acceptance for Sixty (60) calendar days subsequent to submittal to the Town of Goffstown.

Any questions or inquiries must be submitted in writing, and must be received by the Fire Chief (**Fax: 603-497-5704 or e-mail: robrien@goffstownnh.gov**) no later than seven (7) calendar days before the Request for Proposals due date to be considered. Any changes to the Request for Proposals will be provided to all Proposers of record.

The Proposer shall not divulge, discuss or compare this proposal with other Proposers and shall not collude with any other Proposer or parties to a proposal whatever. (Note: No premiums, rebates or gratuities permitted either with, prior to, or after any delivery materials is allowed. Any such violation will result in the cancellation and/or return of materials, as applicable, and the removal from Proposal List).

The name of manufacturer, trade name, or model number mentioned in this Request for Proposal is for the purpose of designating a minimum standard of quality and type. Such references are not intended to be restrictive, although specified color, type of material and specified measurements may be mandatory. Proposals will be considered for any brand which meets or exceeds the quality of the specifications listed. On all such proposals, the Proposer shall specify the product they are proposing and shall supply sufficient data to enable a comparison to be made with the particular brand or manufacturer specified. Failure to submit the above may be sufficient grounds for rejection of the proposal. When samples are required, they must be submitted free of cost and will be returned unless otherwise specified.

Vehicles shown for demonstration purposes shall be delivered and displayed free of charge and shall be removed by the vendor at no cost to the Town. Said demonstration units shall not be offered to the Town as new apparatus unless mutually agreed to.

The vendor may be required to supply proof of compliance with proposal specifications. When requested, the vendor must immediately supply the Town with certified test results or certificates of compliance. Where none are available, the Town may require independent laboratory testing.

All costs for such testing, certified test results or certificates of compliance shall be the responsibility of the vendor.

Unless otherwise stated, all prices are F.O.B.: Destination. No charge for packing or drayage will be allowed. C.O.Ds will not be accepted.

SUBMISSION OF PROPOSALS:

Proposals must be submitted as directed in the Request for Proposals, and on the forms provided unless otherwise specified. Proposals shall include a copy of RFP with all sections completed fully to include forms and written compliance (or non-compliance) with all sections of the specification. Proposals must be typewritten or printed in ink. Proposals must be mailed or delivered in person. Proposals that are faxed or e-mailed will not be accepted.

WITHDRAWAL OF PROPOSALS:

Proposals may be withdrawn prior to the opening date and time upon written, faxed, e-mailed or telegraphic request of the Proposer to the Purchasing Agent. Negligence on the part of the Proposer in preparing this proposal shall not constitute a right to withdraw a proposal subsequent to the proposal opening. Proposals may not be withdrawn for a period of sixty (60) days after the date of opening indicated herein or as modified by addenda.

RECEIPT AND OPENING OF PROPOSALS:

Proposals shall be submitted prior to the time fixed in the Request for Proposals. Proposals received after the time so indicated shall be returned unopened.

PROPOSAL RESULTS:

All proposals received shall be considered confidential and not available for public review until after a vendor has been selected. All proposals shall be subject to negotiations prior to the award of a contract.

NO TELEPHONE REQUESTS FOR RESULTS WILL BE ACCEPTED OR GIVEN.

TIE PROPOSALS:

When identical Proposals are received, with respect to price, delivery, financial resources, experience, ability to perform and quality, award may be made by a toss of coin.

LIMITATIONS:

This Request for Proposal (RFP) does not commit the Town to award a contract, to pay any costs incurred in the preparation of a response to this request, or to procure or contract for services or supplies. The Town reserves the right to accept or reject any or all proposals received as a result of this request, or to cancel in part or in its entirety this RFP, if it is in the best interest of the Town to do so.

TRADE IN:

The purchaser requires all bidders to offer a value for a 1988 110' Seagrave Ladder Truck. The purchaser urges bidders to inspect the vehicle during the mandatory pre-proposal meeting. The purchaser makes no representations as to the condition of the vehicle. Bidders will make their offer on an "as is" basis. The purchaser reserves the right to split the award, whereby the contract for the new apparatus purchase may go to one bidder while the sale of the used ladder truck may go to another bidder, or be rejected entirely. Therefore, bidders are required to offer two separate prices, one for the new vehicle, and one for the used vehicle (see ATTACHMENT C).

PROPOSAL EVALUATION:

The Fire Chief and/or his designee(s) will review and screen all proposals. Proposals will be evaluated with respect to the following:

- Vendor qualifications and experience constructing New Tower Ladder Fire Truck.
- Safety of Fire Department staff and public while operating in or around the proposed vehicle.
- Quality of materials and workmanship.
- The vendor's ability to meet the desired specification, as submitted.
- The vendor's ability to deliver the vehicle in a desired period of time.
- Completeness, technical competence and clarity of the proposal.
- References related to similar projects.
- The stated Proposal matches to the quality, thoroughness of the work product proposed.
- The vendor's ability to provide prompt quality repair services.

It will be the responsibility of the Fire Chief and/or his designee(s) to rank the candidates in order of qualification on the basis of the evaluation of the written responses to the Request for Proposal. Following the initial ranking based on qualifications, the price proposals of all vendors will be considered. The Fire Chief and/or his designee(s) will then perform a final ranking to recommend the top Proposal to the Town's Board of Selectmen for award. Price is not the determining factor in the selection process, but it may impact final ranking.

AWARD OF CONTRACT:

Any contract entered into by the Town shall be in response to the proposal and subsequent discussions. It is the policy of the Town that contracts be awarded, among other considerations, only to responsive and responsible Proposers. In order to qualify as

responsive and responsible, a prospective vendor must meet the following standards as they relate to this request:

- Have adequate financial resources for performance or have the ability to obtain such resources as required during performance;
- Have the necessary experience, organization, technical and professional qualifications, skills and facilities;
- Be able to comply with the proposed or required time of completion or performance schedule;
- Have a demonstrated satisfactory record of performance.
- Adhere to the specifications of this proposal and provide all documentation required of this proposal. The contract will be awarded to a responsive and responsible Proposer based on the qualifications and experience of the Proposer, the quality of the equipment/product/service to be provided, the Proposer's ability to provide ongoing technical support, the Proposer's timeframe for providing the equipment/product/service and the Proposer's fee/price proposal.

The Proposer selected will be the most qualified and not necessarily the Proposer with the lowest price. The Town of Goffstown reserves the right to waive any formality, informality, information and/or errors in the proposals submitted and the right to reject any or all proposals at its discretion and to accept the proposal which will be in the best interest of the Town; or to purchase on the open market if it is considered in the best interest of the Town to do so. In case of error in the extension of prices, the unit prices proposed shall govern and the unit prices in writing shall take precedence over the unit prices in figures. Also, in the event of a discrepancy between the total of the items and the lump sum total stated, the total of the items shall govern.

MODIFICATIONS AFTER AWARD:

The Town reserves the right to incorporate minor modifications, which may be required by it. The Vendor will incorporate these changes at no additional cost, but may protest such action and not be bound by any such request of it can prove that the timing or extent of the modifications implies a major effort on its part.

PERFORMANCE BOND

A 100% Performance Bond shall be supplied within thirty (30) days of bid award. The signatures of both Town and bidder on the contract shall construe awarding of the bid. The prime apparatus builder shall provide the performance bond. Any bonds supplied by the dealer or representative shall not be acceptable.

PENALTY CLAUSE

There will be a \$100.00 per day late fee assessed for each calendar day the completed unit is not in the customer's Fire Station, after the determined award date to a manufacturer. It is the customer's requirement to have the unit within 300 calendar days of contract signing. **NO EXCEPTION**

CANCELLATION OF AWARD:

The Town reserves the right to cancel the award without liability to the Proposer at any time before a contract has been fully executed by all parties and is approved by the Town.

CONTRACT:

Any Contract between the Town and the Vendor shall consist of (1) the Request for Proposal (RFP) and any amendments thereto and (2) the Vendor's proposal in response to the RFP. In the event of a conflict in language between documents (1) and (2) referenced above, the provisions and requirements set forth and referenced in the RFP shall govern. However, the Town reserves the right to clarify any contractual relationship in writing with the concurrence of the Vendor, and such written clarification shall govern in case of conflict with the applicable requirements contained in the RFP and the Vendor's proposal. In all other matters, not affected by written clarification, if any, the RFP shall govern. The submitter is cautioned that this proposal shall be subject to acceptance without further clarification.

EXECUTION OF AGREEMENT:

The successful Proposer shall sign (execute) the necessary agreements for entering into the contract and return such signed agreements to the Town, along with the fully executed surety bonds, within ten (10) calendar days from the date mailed or otherwise delivered to the successful proposer.

APPROVAL OF AGREEMENT:

Upon receipt of the agreement that has been fully executed by the successful Proposer, the owner shall complete the execution of the agreement in accordance with local laws or ordinances and return the fully executed agreement to the Vendor. Delivery of the fully executed agreement, along with a Notice to Proceed and a Town purchase order, to the Vendor shall constitute the Town's approval to be bound by the successful Proposer's proposal and the terms and conditions of the agreement.

FAILURE TO EXECUTE AGREEMENT:

Failure of the successful Proposer to execute the agreement within ten (10) calendar days from the date mailed or otherwise delivered to the successful Proposer shall be just cause for cancellation of the award.

DISQUALIFICATION:

Awards will not be made to any person, firm or company in default of a contract with the Town, the State of New Hampshire or the Federal Government.

INSURANCE:

The successful proposer shall procure and maintain insurance, in the amounts and coverage detailed by the proposal documents, acceptable to the Town, at the proposer's sole expense, with reputable and financially responsible insurance companies, insuring against any and all public liability, including injuries or death to persons and damage to property, arising out of or related to the goods or proposer's performance hereunder and shall furnish to the Town certificates of such insurance and renewals thereof signed by

the issuing company or agent upon the Town's request. Such certificates shall name the Town of Goffstown as an additional insured. Such policies shall provide for cancellation only subsequent to 30 days prior written notice to the Town. The Town's examination of, or failure to request or demand, any evidence of insurance hereunder, shall not constitute a waiver of any requirement and the existence of any insurance shall not limit the proposer's obligation under any provision hereof. Except to the extent of comparable insurance acceptable to or express waiver by the Town, the proposer shall, or shall cause any carrier engaged by the proposer, to insure all shipments of goods for full value.

If the agreement with the proposer involves the performance of work by the proposer's employees at property owned or leased by the Town, the proposer shall furnish such additional insurance as the Town may request in respect thereof, but in any event and without such request, workers' compensation insurance and unemployment compensation insurance as required by laws of the State of New Hampshire and public and automotive liability and property damage insurance. In no event shall such employees of the proposer be deemed to be the employees of, or under the direction or control of the Town for any purpose whatsoever.

WORKER'S COMPENSATION:

All proposers and subvendors at every tier under the proposer will conform with the requirements of NH RSA 281 Title XXIII, Section 281-A:2 with close attention to sections VI(a), VI(c) and VII(a) as well as Section 281-A:4.

DISAGREEMENTS AND DISPUTES:

All disagreements and disputes, if any, arising under the terms of any agreement, either by law, in equity, or by arbitration, shall be resolved pursuant to the laws and procedures of the State of New Hampshire, in which state any agreement shall be deemed to have been executed. No action at law, or equity, or by arbitration shall be commenced to resolve any disagreements or disputes under the terms of any agreement, in any jurisdiction whatsoever other than the State of New Hampshire and Hillsborough County.

TERMINATION OF CONTRACT FOR CAUSE:

If, through any cause, the Vendor shall fail to furnish in a timely and proper manner its obligations under any Contract, or if the Vendor shall violate any of the covenants, agreements or stipulations of any Contract, the Town shall thereupon have the right to terminate any Contract by giving written notice to the Vendor of such termination. In such event, all finished or unfinished work, services, plans, data programs and reports prepared by the Vendor under this Contract shall become the Town's property and the Vendor shall be entitled to receive just and equitable compensation for any satisfactory work completed.

Notwithstanding the above, the Vendor shall not be relieved of liability to the Town for damages sustained by the Town by virtue of any breach of any contract, and the Town may withhold any payments until such time as the exact amount of damages due the Town is determined.

TERMINATION FOR THE CONVENIENCE OF THE TOWN:

The Town may terminate any contract at any time by giving written notice to the Vendor of such termination and specifying the effective date thereof, at least fifteen (15) days before the effective date of such termination. In that event, all finished or unfinished work, services, documents and materials shall become the Town's property. If any Contract is terminated by the Town as provided herein, the Vendor will be paid an amount which bears the same ratio to the total compensation as the services covered by any contract, less payments of compensation previously made.

OWNERSHIP OF REPORTS:

All data, materials, plans, reports and documentation prepared pursuant to any contract between the Town of Goffstown and the successful proposer shall belong exclusively to the Town.

ASSIGNMENT PROVISION:

The successful proposer hereby agrees that it will assign to the Town of Goffstown all cause of action that it may acquire under the anti-trust laws of New Hampshire and the United States as the result of conspiracies, combination of contracts in restraint of trade which affect the price of goods or services obtained by the Town under this contract if so requested by the Town of Goffstown.

DELIVERY:

Deliveries are to be made only to the location indicated on the order and in accordance with accepted commercial practices, without extra charge for packing or containers. Deliveries, which do not conform to the specifications or are not in good condition upon receipt, shall be replaced promptly. Deliveries shall be accepted weekdays between the hours of 8:30 AM and 3:30 PM unless otherwise stated. Delivery arrangements must be made with the Fire Chief prior to delivery.

PAYMENT:

Unless otherwise stated, payment will be made within thirty (30) days of the completion of delivery of all items or service, in acceptable condition, to the Town and receipt of invoice, whichever is later.

TAX EXEMPTION:

The Town is exempt from all sales and Federal excise taxes. Our exemption number is 02-6000326. Please invoice less these taxes.

FUNDING OUT:

The Town of Goffstown's obligations to pay any amount due under a contract are contingent upon availability and continuation of funds for the purpose. The Town may terminate the contract, for non-appropriation of funds, and all payment obligations of the Town cease on the date of termination.

ASSIGNMENT OR SUB-CONTRACTING:

None of the work or services covered by the contract shall be assigned in full or in part, or subcontracted without the prior approval of the Town.

EXCLUSIVITY:

This contract will be for the goods/services described above; however, this agreement should not be considered exclusive. As deemed necessary, the Town reserves the right to obtain these goods/services from any other vendor.

PRICING:

Unless otherwise specified all prices listed are firm for the term of the contract. All prices should include all labor, material and transportation costs, and any discounts offered. No fuel surcharges shall be allowed at any time.

AUDIT:

For a period of at least three (3) years after completion of any contract, it is the responsibility of the vendor to make available at the vendor's place of business, upon demand, all price lists, documents, financial records and other records pertaining to purchases made and /or work performed under contract for the purposes of audit by the Town of Goffstown.

INSPECTION & EVALUATION:

The Town of Goffstown reserves the right to inspect the vendor's facilities during operating hours to determine that the level of inventory is adequate for the Town's needs. The conditions and operations of the facility may be taken into consideration in making the award of this contract.

GUARANTEES & WARRANTY:

All parts and labor related to agreements must be guaranteed and include a warranty. If any work is unable to be guaranteed, the vendor must inform the Town, in writing, prior to the delivery of an item or any work being performed. Non-guaranteed work must be offered at a discount rate from the proposal prices. **Inspection, testing and final determination of non-warranty work shall be performed at no cost to the Town.**

FORCE MAJEURE:

Neither party shall be liable for any inability to perform its' obligations under any subsequent agreement due to war, riot, insurrection, civil commotion, fire, flood, earthquake, storm or other act of God.

NOTIFICATION:

Notification of the parties shall be considered to have been constructively received when it is mailed via the United State Postal Service or delivered in hand to the parties as stated in the contract.

SEVERABILITY:

If any of the GENERAL TERMS AND CONDITIONS is held to be invalid or unenforceable, it will be construed to have the broadest interpretation which would make it valid and enforceable under such holding. Invalidity or the inability to enforce a term or condition will not affect any of the other GENERAL TERMS AND CONDITIONS.

NON-RECRUITMENT OF PERSONNEL

During the term of the Agreement and for twenty-four (24) months thereafter, the Town and the successful vendor party agree not to solicit or hire current or former employees without the other's prior written consent.

DISADVANTAGED BUSINESS ENTERPRISES

The Town hereby notifies all Vendors that it will affirmatively insure that in any contract entered into pursuant to this Request for Proposals, disadvantaged business enterprises will be afforded full opportunity to submit proposals in response to this request and will not be discriminated against on the grounds of race, color, national origin, religion, sex, age or disability in consideration for an award.

NON-DISCRIMINATION

Contracts for work resulting from this Request for Proposals shall obligate the Vendor not to discriminate in employment practices on the grounds of race, color, national origin, religion, sex, age or disability. Statements as to nondiscriminatory practices may be requested from the successful Vendor(s).

DEFINITIONS:

Proposal shall also mean quotation, bid, offer, qualification/experience statement, and services. Proposers shall also mean vendors, offerors, proposers, contractors or any person or firm responding to a Request for Proposals.

GOVERNING LAW:

The Laws of the State of New Hampshire shall govern all contracts entered into by the Town of Goffstown. Any disputes shall be resolved within the venue of the State of New Hampshire and Hillsborough County.

FAILURE TO ACKNOWLEDGE THIS PROPOSAL MAY RESULT IN WITHDRAWAL FROM THE PROPOSAL LIST FOR THIS COMMODITY OR SERVICE.

FAILURE TO COMPLY WITH THESE REQUIREMENTS COULD RESULT IN THE CANCELLATION OF AN ORDER OR CONTRACT.

FIRE DEPARTMENT TOWER LADDER SPECIFICATION

INTENT OF SPECIFICATIONS

It is the intent of these specifications to cover the furnishing and delivery to the purchaser of a complete Mid-Mount Tower Ladder vehicle equipped as hereinafter specified. With a view to obtaining the best results and the most acceptable apparatus, these specifications cover minimum requirements as to the type of construction, finish, and tests to which the apparatus must conform, together with certain details as to equipment and appliances to be furnished. Minor details of construction and materials, where not otherwise specified, are left to the discretion of the contractor, who shall be solely responsible for the design and construction. **The apparatus shall conform to the requirements of NFPA 1901 (2009) edition - Standard for Automotive Fire Apparatus.**

DELIVERY

The apparatus shall be delivered under its own power to assure adequate break-in while under warranty. It shall first be transported to the local service facility, where final inspection and preparation will be performed, including mounting of related equipment. The apparatus will then be delivered to the identified location.

PRE & MID CONSTRUCTION INSPECTION OF AERIAL APPARATUS

The factory authorized Distributor shall be required, during manufacturing, to have pre and mid-construction inspection conferences at the site of the aerial manufacturing facility with two (2) individuals from the Goffstown Fire Department to inspect the aerial device after completion.

The factory's authorized distributor shall, at his expense, provide transportation, lodging, and meals. Any distance greater than 400 miles shall be by commercial air travel.

FINAL INSPECTION CONFERENCE

The factory authorized Distributor shall be required, during manufacturing, to have a final completion inspection conference at the site of the vendor's (authorized distributor) facility with two (2) individuals from the Goffstown Fire Department to inspect the apparatus after construction.

The factory's authorized distributor shall, at his expense, provide transportation, lodging, and meals. Any distance greater than 400 miles shall be by commercial air travel.

POST-DELIVERY TRAINING

On a mutually agreeable date(s) after delivery, a qualified delivery engineer shall familiarize those persons designated by the Fire Chief with the basic operation of the apparatus and its components. Training must be delivered by a qualified instructor familiar with all components of the vehicle. A pumps and aerial operations course shall be taught by a certified instructor. Limited programs or "drop-off" type deliveries are unacceptable.

TRAINING

A qualified training engineer shall be provided by the bidder. The training engineer shall instruct the Goffstown Fire Department personnel in the operation and maintenance of the chassis, pump and aerial operation for a period of not less than four (4) days. The training shall incorporate modern training techniques. An “as built” Power Point® presentation shall be included as part of the instruction. A copy shall be left with the fire department to use for future instruction.

SAFETY VIDEO

Documentation provided at the time of delivery shall also include an apparatus safety video, in DVD format. This video shall address key safety considerations for personnel to follow when they are driving, operating, and maintaining the apparatus. Safety procedures for the following shall be included: vehicle pre-trip inspections, chassis operation, pump operation, aerial operation, and maintenance.

CONSTRUCTION TIME

The proposer shall indicate, as part of his/her proposal, the number of calendar days required to build and deliver the apparatus to the Town of Goffstown after contract signing and receipt of order.

WARRANTY

Each proposer shall submit a copy of their standard Warranty in compliance with State and Federal regulations. It shall provide coverage for a minimum of a one (1) year period. Warranty forms must be submitted with the proposal package. Altered forms will not be accepted. **All warranties shall commence upon inspection and acceptance by the Town.**

EXCEPTIONS

Substitutions, deviations, clarifications, or exceptions to the technical specifications must be listed on the **SPECIFICATIONS EXCEPTION FORM** (additional pages may be added as needed), and must be accompanied by adequate supportive data to allow the Fire Chief to determine acceptability. Proposals that are found to have deviations without listing them will be rejected. Components identified by brand names are available to all prospective proposers and exceptions shall not be allowed on these items.

PUMP CERTIFICATION

The apparatus will be tested and certified by a third party testing company as detailed in the NFPA Standard for Pumper Fire Apparatus.

AERIAL CERTIFICATION

The apparatus will be tested and certified by a third party testing company as detailed in the NFPA Standard for Aerial Fire Apparatus.

GENERATOR TEST

The generator shall be tested, approved, and certified by Underwriters Laboratories at the manufacturer's expense. The test results shall be provided to the Fire Department at the time of delivery.

BREATHING AIR TEST

If the unit has breathing air within the breathing air system upon delivery, Underwriters Laboratories shall draw an air sample from the air system and certify that the air quality meets the requirements of NFPA 1989, *Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection*.

QUALITY AND WORKMANSHIP

The design of the apparatus shall embody the latest approved automotive engineering practices. The workmanship shall be of the highest quality in its respective field. Special consideration shall be given to the following points: Accessibility of the various units that require periodic maintenance; ease of operation (including both pumping and driving); and symmetrical proportions. Construction shall be rugged and ample safety factors shall be provided to carry the loads specified and to meet both on and off road requirements and speed conditions as set forth under "Performance Tests and Requirements". Welding shall not be employed in the assembly of the apparatus in a manner that shall prevent the ready removal of 2000 requirements for structural welding of sheet metal. Flux core arc welding to use alloy rods, type 7000, American Welding Society standards A5.20-E70T1. Employees classified as welders are tested and certified to meet American Welding Society codes upon hire and every three (3) years thereafter. All steel welding shall follow American Welding Society D1.1-2004 recommendations for structural steel welding. All aluminum welding shall follow American Welding Society and ANSI D1.2-2003 requirements for structural welding of aluminum. All sheet metal welding shall follow American Welding Society B2.1-2000 requirements for structural welding of sheet metal. Employees classified as welders are tested and certified to meet American Welding Society codes upon hire and every three (3) years thereafter.

REQUIRED DRAWINGS

COMPLY: <input type="checkbox"/> YES <input type="checkbox"/> NO

Vendors submitting proposals shall also include the following detailed drawings:

- Vehicle Exterior
- Compartment Detail and Dimensions
- Cab Detail (Interior / Exterior)
- Vehicle Dimensions (to include approach / departure angles)
- Hose Bed Detail
- Ladder Compartment Detail
- Platform Detail

1. CHASSIS

CHASSIS FRAME

COMPLY: YES NO

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

The frame rails shall be powder coated in order to insure superior paint adhesion. Frame cutouts for the engine shall be made with a plasma torch in order to minimize the heat-affected zone caused by the cut.

All frame-mounted components shall be secured with grade eight bolts with hardened washers and distorted thread locknuts. Flanged head bolts with nylon locking nuts, or huck bolts shall not be acceptable.

The apparatus manufacturer shall provide a lifetime warranty (stated in years) to the original purchaser against cracking of the frame rails.

FRAME

COMPLY: YES NO

The chassis frame shall be built with at least two (2) steel channels bolted to a minimum of five (5) cross members or more, depending on other options of the apparatus. The pump housing shall not count or be used as a cross member.

CHASSIS FRAME PAINT

COMPLY: YES NO

The frame and running gear shall be painted job color (RED). The running gear shall consist of the axles, drivelines, air tanks, steering gear, frame mounted brackets, drag link, and fuel tank.

The air system piping and electrical harnesses shall not be installed in the frame until after the frame has been painted. This shall insure complete coverage of paint behind those areas; as well as to insure the air piping and wiring harnesses are not painted.

FRONT BUMPER EXENTION

COMPLY: YES NO

Front frame, extension rails, shall be bolted to the main frame through reinforcement plates that are backed by the front engine mounting cross member. The finished apparatus must be able to be lifted at the front bumper without structural damage to the extension rails for towing the vehicle.

The front bumper shall have a structural steel backing plate reinforcement channel. This channel follows the contour of the bumper and wraps around from the front to side of the bumper. The bumper shall be bolted to the channel and in turn, the channel shall be bolted to the frame extension rails.

The front bumper shall extend sixteen (16") inches ahead of the front face of the cab.

FRONT BUMPER

COMPLY: YES NO

A 12" inch high, 10-gauge polished stainless steel, two-rib bumper shall be provided. The bumper shall be the full width of the cab and wrap around with an 8-inch radius.

AIR HORNS

COMPLY: YES NO

There shall be two-(2) Grover stutter air horns made from spun brass material and chrome plated. The air horns shall be mounted, one-(1) each side, outboard the frame rails. The sounding unit shall be die cast and easily separated for service. The horns shall be mounted behind the cutouts in the front bumper. The bumper must be extended to permit air horn clearance from chassis obstructions.

ELECTRONIC SIREN

COMPLY: YES NO

One (1) Whelen # 295SLSA1 electronic siren shall be provided featuring: bottom mount control head in cab, "Si-Test" self diagnostic feature, six (2) function siren, radio repeat and public address.

The electronic siren and speaker shall meet the NFPA required SAE certification to ensure compatibility between the siren and speaker.

Two (2) Whelen, model # SA122FMP polished aluminum siren speakers shall be provided, recessed in the front bumper and wired to the electronic siren.

FEDERAL Q2B SIREN

COMPLY: YES NO

Shall be mounted on the top left side of the front bumper, and will be mounted so as to not cause damage should the cab be tilted.

Two (2) Linemaster #632 floor mounted foot switches shall be provided, one (1) for the officer and one (1) for the driver to control the Federal Q2B.

A siren brake switch to be installed in a location easily accessible to both the driver and the officer.

TOW HOOKS

COMPLY: YES NO

Two-(2) chrome tow hooks capable of supporting the weight of towing the apparatus shall be mounted to the front bumper, connecting to the frame extension with grade 8 bolts. The Tow hooks shall be mounted in such a way that if they are used to tow the apparatus, damaged will not be caused to the vehicle.

TURNING RADIUS REPORT

COMPLY: YES NO

Supplied with the bid, shall be a turning radius analysis of the vehicle being proposed. This analysis shall provide the inside turning radius, the outside turning radius, the curb

to curb turning radius and the wall to wall turning radius.

FRONT NON DRIVE AXLE

COMPLY: YES NO

The front axle shall be of the independent suspension design and rated to accommodate the weight of the vehicle. Camber at load shall be zero degrees for optimum tire life. The kingpin bearing shall be of low friction design and be sealed for life. Toe links that are adjustable for alignment of the wheel to the center of the chassis shall be provided. The wheel ends must have little to no bump steer when the chassis encounters a hole or obstacle. The steering linkage shall provide proper steering angles for the inside and outside wheel, based on the vehicle wheelbase.

The axle shall have a third party certified turning angle of 45 degrees. Aluminum wheels shall not infringe on this cramp angle.

SHOCK ABSORBERS

COMPLY: YES NO

Heavy-duty telescoping shock absorbers shall be provided on the front suspension.

FRONT SUSPENSION

COMPLY: YES NO

The independent suspension system shall be designed to provide maximum ride comfort. The design shall allow the vehicle to travel at highway speeds over improved road surfaces and at moderate speeds over rough terrain with minimal transfer of road shock and vibration to the vehicle's crew compartment. Each front wheel end shall also have energy absorbing jounce bumpers to prevent bottoming of the suspension. The suspension design shall be such that there is at least 10.00" of total wheel travel and a minimum of 3.75" before suspension bottoms. The torsion bar anchor lock system allows for simple lean adjustments, without the use of shims. One can adjust for a lean within 15 minutes per side. Anchor adjustment design is such that it allows for ride height adjustment on each side.

BRAKES

COMPLY: YES NO

The service brake system shall be full air type. The front brakes shall be Knorr/Bendix disc type with a 17.00" ventilated rotor for improved stopping distance. The brake system shall be certified, third party inspected, for improved stopping distance. The rear brakes shall be the largest cam operated with automatic slack adjusters available for the wheel used.

BRAKE SYSTEM

COMPLY: YES NO

The brake system shall include:

- Two (2) air pressure gauges with a red warning light and an audible alarm, that activates when air pressure falls below 60 psi.
- Include a Bendix AD-9 air dryer with integral 12-volt heated moisture ejector. The air dryer shall have a desiccant cartridge and incorporate an integral turbo

cutoff valve. The turbo cutoff allows the air dryer to purge water and contaminants without any loss of turbo boost or engine horsepower.

- MGM spring set parking brake system.
- Parking brake operated by a Bendix-Westinghouse PP-1 control valve.
- A parking "brake on" indicator light on the instrument panel.
- Bendix-Westinghouse SR-1 valve, in conjunction with a double check valve system, including an automatic spring brake application at 60 psi.

BRAKE LINES

COMPLY: YES NO

Wire braided reinforced rubber brake lines shall be provided for the chassis air brake system, up to the aluminum manifold/junction block, located in the chassis frame just to the rear of transmission mount. The manifold/junction block shall be the separation point for all airlines going to the front of chassis and into the cab. The only wire braided lines forward of the manifold/junction are the front brake lines that run from the QR1 valve to the front air chambers. The airlines going into the cab shall be nylon, wrapped in loom. The area where the nylon airlines run shall be well protected inside the frame rails.

The brake lines shall not be painted.

REAR TANDEM AXLE

COMPLY: YES NO

The rear axle shall meet or exceed a Meritor (Rockwell) RT-58-185 in a tandem axle assembly with single reduction gearing and have a rated capacity of 58,000 lbs GAWR. The rear axles shall be equipped with "Oil Bath" wheel end seals.

REAR SUSPENSION TANDEM AXLE

COMPLY: YES NO

The rear tandem suspension shall be a Raydan AirLink or equivalent.

Dual height control valves, one-(1) each side, maintain even balanced loads.

The walking beams combined with air springs result in high roll stability.

VEHICLE TOP SPEED

COMPLY: YES NO

The vehicle shall be programmed for a top speed of 55 MPH at governed engine speed.

AIR BRAKE SYSTEM ALL WHEEL LOCK-UP

COMPLY: YES NO

The front axle's service brake shall have a switch to apply the front brakes. This front brake lockup can only be used when the engine is running.

There shall be a visual & audible alarm to warn when the front brakes are locked and the rear park brake is released.

12 VOLT ACCESSORY CIRCUIT

COMPLY: YES NO

A dedicated 12 volt power and ground circuit shall be provided in the cab dash or console as required. The circuit shall be for future installation of radios or accessories.

ELECTRONIC STABILITY CONTROL

COMPLY: YES NO

A vehicle control system shall be provided as an integral part of the ABS brake system. The system shall monitor and update the lateral acceleration of the vehicle and compare it to a critical threshold where a side roll event may occur. If the critical threshold is met, the vehicle control system shall automatically reduce engine RPM, engage the engine retarder (if equipped), and selectively apply brakes to the individual wheel ends of the front and rear axles to reduce the possibility of a side roll event.

The system shall monitor directional stability through a lateral accelerometer, steer angle sensor and yaw rate sensor. If spinout or drift out is detected, the vehicle control system shall selectively apply brakes to the individual wheel ends of the front and rear axles to bring the vehicle back to its intended direction.

ANTI-LOCK BRAKE SYSTEM

COMPLY: YES NO

The vehicle shall be equipped with an anti-lock braking system. The ABS shall provide a six (6) channel anti-lock braking control on both the front and rear wheels. A digitally controlled system that utilizes microprocessor technology shall control the anti-lock braking system. Each wheel shall be monitored by the system. When any wheel begins to lock up, a signal shall be sent to the control unit. This control unit shall then reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.

AUTOMATIC TRACTION CONTROL

COMPLY: YES NO

An anti-slip feature shall be included with the ABS. The Automatic Traction Control shall be used for traction in poor road and weather conditions. The Automatic Traction Control shall act as an electronic differential lock that shall not allow a driving wheel to spin, thereby supplying traction at all times. The ABS electronic control unit (ECU) shall work with the engine ECU, sharing information concerning wheel slip. Engine ECU shall use information to control engine speed, allowing only as much throttle application as required for the available traction, regardless of how much the driver is asking for. A "mud/snow" switch shall be provided on the instrument panel. Activation of the switch shall allow additional tire slip to let the truck climb out and get on top of deep snow or mud.

ELECTRONIC STABILITY CONTROL SYSTEM, ANTI-LOCK BRAKE SYSTEM & AUTOMATIC TRACTION CONTROL WARRANTY

COMPLY: YES NO

The system shall come with a **three (3) year or 300,000 mile parts and labor** warranty provided by the manufacturer.

TIRES

COMPLY: YES NO

Front tires shall be Michelin radials 425/65R22.50, 20 ply "all position" XZY-3 tread. The tires shall be mounted on Alcoa Polished Aluminum rim for 425 tires with a rating of 22,000#. With a ten (10) stud, 11.25" bolt circle.

Rear tires shall be eight (8) Michelin radials 315/80R22.50, 20 ply "all position" XDN-2 tread. The tires shall be mounted on 10-bolt, hub-piloted type Alcoa Polished aluminum, 9.00" X 22.5". The outside wheels shall be polished on the outside surface.

TIRE PRESSURE MANAGEMENT

COMPLY: YES NO

There shall be a tire alert pressure management system provided that shall monitor each tire's pressure. A chrome plated brass sensor shall be provided on the valve stem of each tire for a total of ten (10) tires. The sensor shall calibrate to the tire pressure when installed on the valve stem for pressures between 20 and 120 psi. The sensor shall activate an integral battery operated LED when the pressure of that tire drops 8 psi. Removing the cap from the sensor shall indicate the functionality of the sensor and battery. If the sensor and battery are in working condition, the LED shall immediately start blinking.

WHEEL CHOCKS

COMPLY: YES NO

There shall be two (2) set(s) of folding Ziamatic SAC-44-E, aluminum alloy, Quick-Choc wheel blocks with easy-grip handle provided.

WHEEL CHOCK BRACKETS

COMPLY: YES NO

There shall be two (2) set(s) of Ziamatic SQCH-44-H horizontal mounting wheel chock brackets provided for the SAC-44-E folding wheel chocks. Location to be determined at pre-construction conference.

AUTOMATIC TIRE CHAINS

COMPLY: YES NO

One (1) pair of "On Spot" automatic tire chains shall be provided at the rear (located to operate on the front wheels of the rear tandem). System shall be electric over air operated with switch on cab instrument panel, system to be operable at speeds up to 30 mph.

WHEEL WELL LINERS

COMPLY: YES NO

The front cab wheel wells shall be equipped with fully removable, bolt-in, aluminum inner wheel well liners. The liners shall extend full depth into the truck frame. The

completely washable wheel well liners shall be designed to protect the cab substructure, inner panels, and other miscellaneous installed components from road salts, debris, dirt accumulation and corrosion. Fender liners which are fixed partially removable or one piece liner/fenderette shall not be considered.

FENDERETTES

COMPLY: YES NO

All wheel well openings shall be trimmed with replaceable, bolt-in, polished stainless steel fenderettes. The fenderettes shall be secured to the cab with stainless steel threaded fasteners along the internal perimeter of the wheel well. Rubber welting shall be installed between the fenderettes and the cab side panel.

MUD FLAPS

COMPLY: YES NO

Mud flaps shall be installed behind the front and rear wheels of the apparatus.

SPARE TIRE

COMPLY: YES NO

A 425/65R22.50, 18 ply spare tire to match the vehicle's front tires shall be provided, mounted on a painted (RED) steel disc wheel.

SPARE TIRE

COMPLY: YES NO

A 315/80R22.50, 18 ply spare tire to match the vehicle's rear tires shall be provided, mounted on a painted (RED) steel disc wheel.

ENGINE COOLING SYSTEM

COMPLY: YES NO

The engine cooling system shall have the capacity to cool the engine according to the engine manufacturer requirements.

COOLANT LINES

COMPLY: YES NO

Silicone hoses shall be used for all engine/heater coolant lines installed by the chassis manufacturer.

Hose clamps shall be stainless steel "constant torque type" to prevent coolant leakage. They shall react to temperature changes in the cooling system and expand or contract accordingly while maintaining a constant clamping pressure on the hose.

RADIATOR

COMPLY: YES NO

The engine radiator shall be of a bolted design and have a minimum core area of 1400 square inches. Radiator and the complete cooling system shall meet or exceed NFPA cooling system standards. Cooling system capacity shall exceed all cooling requirements specified by the engine manufacturer under all truck operating conditions.

The top tank shall include an integral deaeration tank, which removes air from the engine water. The top tank shall include a sight glass for coolant level inspection with removing the radiator cap. A low coolant warning shall be incorporated to alert the driver.

The cooling system shall be designed to maintain pressure at nine (9) psi for maximum dissipation. A drain valve shall be located at the lowest point of the cooling system and at other points to permit complete flushing of the coolant from the system. Cooling air shall be drawn in by a heavy-duty fan, shrouded by recirculation shields that permit only fresh cool air through the radiator.

Radiator shall be mounted in a manner to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven ground. Radiator core shall be compatible with commercial antifreeze solutions. Cooling system shall exhibit rapid warm-up without use of radiator shutters.

The bottom tank of the radiator shall incorporate oil to water plate-type cooler for the transmission. The cooler is designed to cause a turbulent flow of the transmission oil through the core to force heat transfer. The cooler shall be sufficient to cool Allison Transmission without output retarders.

PLATE

COMPLY: YES NO

The chassis shall be designed with a removable heavy-duty radiator skid plate to protect the radiator from debris or obstructions under the chassis. The skid plate shall be constructed from steel, which shall enclose the lower section of the radiator and cooling system components mounted on the lower section of the radiator. The skid plate shall be designed so the angle of approach is not affected.

COOLING SYSTEM FAN

COMPLY: YES NO

The engine cooling system shall incorporate a thermostatically controlled, 2-speed fan clutch. When the fan clutch is disengaged, the fan blade rotates-contact free and non-wearing at low RPM'S, driven by a permanent magnet system facilitating improved vehicle performance, cab heating in cold climates, and fuel economy, while eliminating the potential dangers associated with a fan going from non-rotating to rotating as found with other style fan clutches.

The fan shall automatically lock up when the vehicle is placed in pumping mode.

A fan and shroud shall be installed on the engine. Recirculation shields shall be installed to ensure that air, which has passed through the radiator, is not draw through it again.

CHARGE AIR COOLER

COMPLY: YES NO

The charge air cooler shall be constructed of aluminum with cast, aluminum side tanks. The cooler shall have a frontal core area of not less than 888 square inches.

The exterior fins shall be louvered serpentine design constructed of aluminum and have a density no greater than seven-(7) fins per inch. The internal fins shall be designed to create air turbulence in order to increase heat transfer efficiency.

The charge air cooler shall be mounted directly ahead of the radiator and to the radiator headers. Rubber isolators shall be used at the mounting points to reduce transmission of vibrations.

The piping between the charge air cooler and engine shall use four-(4) ply silicone woven Nomex hoses with stainless steel bands. The bands are used to maintain the shape of the hose during changing turbo boost pressures. The hoses shall be attached with stainless steel constant tension hose clamps.

AIR INTAKE/OUTLET

COMPLY: YES NO

There shall be a front air intake with a minimum of 945 square inches of open area for maximum air flow to the charge air cooler and the radiator.

Two (2) air inlets/outlets with a minimum of 43.5 square inches per inlet shall be provided horizontally above the wheel well opening, one on each side of the cab. The design shall permit proper ducting of air through the engine compartment and cooling system. The left side inlet, used for the air intake to the air cleaner, shall be equipped with an ember separator for separating water and burning embers from the air intake system. This system shall be such that particles larger than .039 inches (1 mm) in diameter can not reach the air filter element.

The air intake and outlets shall be covered with polished stainless steel louvers, secured with polished cast aluminum housings.

FUEL TANK

COMPLY: YES NO

A 65-gallon fuel tank shall be provided and mounted at rear of chassis. The tank shall be constructed of 12-gauge, hot rolled steel. It shall be equipped with swash partitions and a vent.

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

A .50" diameter vent shall be provided running from top of tank to just below fuel fill inlet.

The tank shall meet all FHWA 393.67 requirements including a fill capacity of 95% of tank volume.

All fuel lines shall be of the wire braided type and not painted.

FUEL COOLING SYSTEM

COMPLY: YES NO

A fuel cooling system shall be provided. The heat exchanger shall be a tube and fin type and shall be a separate unit. The cooler shall be mounted forward of the radiator and plumbed to the fuel return line.

SECONDARY ELECTRIC FUEL PUMP

COMPLY: YES NO

In addition to the primary fuel pump, a secondary electric fuel pump for re-priming shall be furnished in the main fuel line. A labeled control switch shall be provided on the main dash panel.

FUEL POCKET

COMPLY: YES NO

A fuel fill shall be provided in the left side rear wheel well area. A heavy duty stainless steel spring loaded hinged fill door shall be provided.

A label indicating "DIESEL FUEL ONLY" shall be provided adjacent to the fuel fill.

FUEL SHUT-OFF

COMPLY: YES NO

A shutoff valve shall be installed in the fuel line, on both sides of the fuel filters.

FUEL/WATER SEPERATOR WITH LIGHT & ALARM

COMPLY: YES NO

A Racor B32002 filter shall be installed in place of the standard filter. The filter will have a instrument panel light and alarm that indicates when water is present in the fuel-water separator filter

CUMMINS ISM ENGINE

COMPLY: YES NO

The vehicle shall be equipped with a Cummins ISM 500 turbocharged diesel engine. Standard features include an electronic governor, electronically controlled unit injectors, Farr air cleaner, a 12-volt 42 MT Delco starter and a Cummins 18.7 CFM compressor. The oil filter shall be a full flow and bypass design.

ENGINE SPECIFICATIONS:

- Model: ISM - 500
- Number of Cylinders: Six (6)
- Bore and Stroke: 4.92" X 5.79"
- Displacement: of 661 cubic inches
- Rated Horsepower: 500 @ 2000 RPM
- Peak Torque: 1550 @ 1200 RPM
- Governed RPM: 2100 RPM

ENGINE WARRANTY

COMPLY: YES NO

There shall be a (minimum) five-(5) year warranty provided by the engine manufacturer.

ENGINE BRAKE

COMPLY: YES NO

A Jacobs Engine C-Brake is to be installed with the controls located on the instrument panel within easy reach of the driver. The driver shall be able to turn the engine brake system on/off and have a high and low setting. The engine brake shall be installed in such

a manner that when the engine brake is slowing the vehicle the brake lights are activated. The ABS system shall automatically disengage the auxiliary braking device, when required.

A pump shift, interlock circuit shall be provided to prevent the engine brake from activating during pumping operation. The engine brake shall interface with the WABCO ABS brake controller to prevent engine brake operation during adverse braking conditions.

AIR COMPRESSOR, BRAKE SYSTEM

COMPLY: YES NO

The air compressor shall be a Cummins/Wabco with 18.7 cubic feet per minute output.

ENGINE COOLANT FILTER

COMPLY: YES NO

A pre-charged spin-on water filter, with corrosion inhibitors shall be installed in the cooling system. Shut off valves before and after the filter shall also be installed.

AUXILIARY ENGINE COOLER

COMPLY: YES NO

The cooling system shall have a tube and bundle engine cooler mounted in the upper radiator water pipe. Water from the fire pump shall be circulated through 1/2" tubing to the cooler. A valve on the pump panel shall control the cooling circuit.

TRANSMISSION

COMPLY: YES NO

An Allison World Transmission, Model 4000 EVS electronically controlled, automatic transmission shall be provided. Transmission specifications shall be as follows:

- Max. Gross Input Power 600 HP
- Max. Gross Input Torque 1850 lb. ft.
- Input Speed (Range) 1700- 2300 RPM
- Shift Calibrations 5 Speed (6th not avail. for fire appl.)
- Direct Gear (Pumping) 4th (Lock-up)
- Direct Gear Ratio 1.00:1
- Overdrive Ratio 0.74:1

Transmission installation shall be in accordance with the transmission manufacturer's specification. The transmission shall be readily and easily removable for repairs or replacement.

An illuminated, touch-pad type shift control shall be mounted in the cab, convenient to the driver. Shift control shall be approved by the transmission manufacturer.

TRANSMISSION MODE

COMPLY: YES NO

The transmission, upon startup, shall select four (4) speed operation. By pressing the "mode" switch on the shift pad (mode on) provides five (5) speed overdrive.

TRANSMISSION OIL LEVEL SENSOR

COMPLY: YES NO

The transmission shall be equipped with the oil level sensor (OLS); this sensor shall allow the operator to obtain an indication of the fluid level from the shift selector. The sensor display shall provide the following checks, correct fluid level, low fluid level and high fluid level.

PARK TO NEUTRAL

COMPLY: YES NO

The transmission, upon application of the parking brake, shall automatically shift into neutral.

TRANSMISSION COOLER

COMPLY: YES NO

A transmission oil cooler shall be provided in the lower tank of the radiator.

TRANSMISSION FLUID

COMPLY: YES NO

The transmission shall be provided with TranSynd, or TES 295 (generic synthetic fluid) equivalent heavy duty synthetic transmission fluid.

DRIVE LINES

COMPLY: YES NO

Drive lines shall be Dana (Spicer) 1810 heavy duty series or equal, with "glide coat" splines on all slip shafts. The chassis manufacturer shall utilize an electronic type balancing machine to statically and dynamically balance all drive shafts. The chassis manufacturer shall be able to provide proof of compliance with all drive shaft manufacturer's standards and specifications.

The drive lines shall be equipped with two (2) guard loop(s) to prevent the drive shaft(s) from dropping in the event of a universal joint failure.

EXHAUST SYSTEM

COMPLY: YES NO

The exhaust system shall be installed in accordance with the engine manufacturer's requirements and meet all Cummins Non - DPF system requirements and State noise level requirements. Exhaust system components shall be securely mounted and easily removable.

The muffler shall be sized to be compatible with the engine exhaust discharge.

Exhaust tubing shall be a minimum of 16 gauge material. Any flexible exhaust tubing shall be HDT stainless steel type. To minimize heat build-up, exhaust tubing within the engine compartment shall be wrapped with an insulating material. Exhaust shall be wrapped from the turbocharger to the entrance of the muffler. Material shall be held in place with worm gear type clamps.

The exhaust tailpipe extending from the muffler (DPF) to the side of the vehicle shall be constructed from 16-gauge aluminized steel tubing. The exhaust discharge shall be on

the right side of the apparatus forward of the rear axle and be long enough to be compatible with fire station exhaust removal systems.

ALTERNATOR

COMPLY: YES NO

The alternator shall be a minimum of 380 amps at normal RPMs, engine driven via a poly groove power belt and tensioned by a threaded rod. The alternator shall meet all current applicable NFPA 1901 Edition requirements for performance.

MULTIPLEX ELECTRICAL SYSTEM WITH COLOR DISPLAY(S)

COMPLY: YES NO

A Multiplex System shall be provided. The system shall provide an on-board diagnostics and status, increase reliability and durability, minimize downtime, supply reverse polarity protection and dramatically simplify troubleshooting and repairs for the vehicle. It shall provide short and open circuit detection and notification, on board service information and reduce splices by 80-90%. Each node shall enable discrete load shedding, sequencing, diagnostics and PWM control. All hardware shall be rated for -40° to +85° C.

A series of Multiplexing Input/Output Modules shall be installed. The Input/Output modules shall permit the multiplexing system to reduce the amount of wiring and components used as compared to non-multiplexed apparatus. These modules shall vary in I/O configuration, be waterproof allowing installation outside of enclosed areas and shall possess individual output internal circuit protection. The modules shall also have three status indicators visible from a service persons vantage point that shall indicate the status of the module. In the event a load requires more than 7.5 AMPS of operating current, the module shall activate a simple relay circuit integral to any of the 3 pillbox assemblies installed in the cab.

The screen for the system shall be mounted in the front of the cab in such a way as to not interfere with views of the driver.

Integration shall be available for:

- System Voltage Meter
- Ammeter
- Emergency Flasher
- Headlamp Flasher
- Load Management
- Load Sequencer
- Back-Up Monitor
- Relays
- Circuit Breakers
- Door “Open” System
- Interlock Modules
- Engine Monitor Devices
- Separate Interlock Control

- Special Waterproof Enclosures

The display node shall include the following features:

- Outside temperature display.
- A real time clock with display.
- Three (3) programmable video inputs.
- A useable temperature range from -40 degrees to 185 degrees F.
- Unlimited virtual switches.
- Selectable font sizes, types and colors for optimum user efficiency.
- Selectable color buttons and screen backgrounds.

All wiring to be appropriate gauge cross link with 311 degree F. insulation. All wires in the chassis shall be circuit numbered and function coded, in addition the SAE wiring shall be color coded. The wiring shall be protected by 275 degree F. minimum high temperature flame retardant loom as required.

DIAGNOSTICS

COMPLY: YES NO

Diagnostic ports shall be accessible while standing on the ground and located inside the driver's side door left of the steering column. The diagnostic panel shall allow diagnostic tools such as computers to connect to various vehicle systems for improved troubleshooting providing a lower cost of ownership. Diagnostic switches shall allow engine and ABS systems to provide blink codes should a problem exist.

The diagnostic system shall include the following:

- Engine diagnostic port
- Transmission and ABS diagnostic port
- Roll sensor diagnostic port (if applicable)

Additional diagnostic locations under the officers side of the dash.

- Engine diagnostic switch (blink codes)
- ABS diagnostic switch (blink codes)

ADVANCED DIAGNOSTICS

COMPLY: YES NO

An advanced, diagnostic software program shall be provided. The software shall provide troubleshooting tools to service technicians equipped with a computer.

The service and maintenance software shall be easy to understand and use, have the ability to view system input/output (I/O) information, and include a connection from a computer to the vehicle.

VOLTAGE MONTORING SYSTEM

COMPLY: YES NO

A voltage monitoring system shall be provided to indicate the status of the battery system connected to the vehicle's electrical load. The system shall provide visual and audible warning when the system voltage is below or above optimum levels.

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

INDICATOR AND LIGHT ALARM PROVE OUT SYSTEM

COMPLY: YES NO

A system shall be provided which automatically tests basic indicator lights and alarms located on the cab instrument panel.

SEAT BELT MONITORING SYSTEM

COMPLY: YES NO

A seat belt monitoring system (SBMS) shall be provided. The SBMS shall be capable of monitoring up to ten (10) sensors indicating the status of each seating position in the cab with green and red LED indicators as follows:

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

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

SEQUENCER

COMPLY: YES NO

A sequencer shall be provided that automatically activates and deactivates vehicle loads in a preset sequence thereby protecting the alternator from power surges. This sequencer operation shall allow a gradual increase or decrease in alternator output, rather than loading or dumping the entire 12 volt load to prolong the life of the alternator.

Emergency light sequencing shall operate in conjunction with the emergency master light switch. When the emergency master switch is activated, the emergency lights shall be activated one by one at half second intervals. Sequenced emergency light switch indicators shall flash while waiting for activation.

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

Cab climate control system shall be included on the load manager system.

HOSE AND HARNESS ROUTING

COMPLY: YES NO

Any wiring harness or hydraulic /air hoses that must pass to the outside of the frame shall not run over or under the frame flanges. Hydraulic and airlines shall pass through the frame using bulkhead fittings. All battery cables shall also utilize bulkhead fittings. Wiring harnesses shall pass through the frame within a protective rubber boot. For ease of maintenance, the hydraulic air hoses and electrical wiring harness shall be ran

separately down each side of the frame rails. The hydraulic and air hoses run down the right side of the frame rails, and the electrical harnesses run down the left side of the frame rails.

ELECTRICAL HARNESS REQUIREMENT

COMPLY: YES NO

To ensure dependability, all 12-volt wiring harnesses installed by the apparatus manufacturer shall conform to the following specifications:

- SAE J 1128 - Low tension primary cable
- SAE J 1292 - Automobile, truck, truck-tractor, trailer and motor coach wiring
- SAE J 163 - Low tension wiring and cable terminals and splice clips
- SAE J 2202 - Heavy duty wiring systems for on-highway trucks
- NFPA 1901 - Standard for automotive fire apparatus
- FMVSS 302 - Flammability of interior materials for passenger cars, multipurpose passenger vehicles, trucks and buses
- SAE J 1939 - Serial communications protocol
- SAE J 2030 - Heavy-duty electrical connector performance standard
- SAE J 2223 - Connections for on board vehicle electrical wiring harnesses
- NEC - National Electrical Code
- SAE J 561 - Electrical terminals - Eyelet and spade type
- SAE J 928 - Electrical terminals - Pin and receptacle type A

For increased reliability and harness integrity, harnesses shall be routed throughout the cab and chassis in a manner which allows the harnessing to be laid into it's mounting location. Routing of harnessing which requires pulling of wires through tubes shall not be allowed.

Wiring shall be run in loom or conduit where exposed, and have grommets or other edge protection where wires pass through metal. Wire colors shall be integral to each wire insulator and run the entire length of each wire. Harnessing containing multiple wires and uses a single wire color for all wires shall not be allowed. Function and number codes shall be continuously imprinted on all wiring harness conductors at 3.00" intervals. All wiring installed between the cab and into doors shall be protected by a wire conduit to protect the wiring. Exterior exposed wire connectors shall be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids. Electrical wiring and equipment shall be installed utilizing the following guidelines:

- All holes made in the roof shall be caulked with silicon (no exception). Large fender washers, liberally caulked, shall be used when fastening equipment to the underside of the cab roof.
- Any electrical component that is installed in an exposed area shall be mounted in a manner that shall not allow moisture to accumulate in it. Exposed area shall be defined as any location outside of the cab or body.
- For low cost of ownership, electrical components designed to be removed for maintenance shall be quickly accessible. For ease of use, a coil of wire shall be

provided behind the appliance to allow them to be pulled away from the mounting area for inspection and service work.

- Corrosion preventative compound shall be applied to non-waterproof electrical connectors located outside of the cab or body. All non-waterproof connections shall re-quire this compound in the plug to prevent corrosion and for easy separation of the plug.
- Any lights containing non-waterproof sockets in a weather-exposed area shall have corrosion preventative compound added to the socket terminal area.
- All electrical terminals in exposed areas shall have protective coating applied completely over the metal portion of the terminal.
- Rubber coated metal clamps shall be used to support wire harnessing and battery cables routed along the chassis frame rails.
- Heat shields shall be used to protect harnessing in areas where high temperatures exist. Harnessing passing near the engine exhaust shall be protected by a heat shield.
- Cab and crew cab harnessing shall not be routed through enclosed metal tubing. Dedicated wire routing channels shall be used to protect harnessing therefore improving the overall integrity of the vehicle electrical system. The design of the cab shall allow for easy routing of additional wiring and easy access to existing wiring.
- All standard wiring entering or exiting the cab shall be routed through sealed bulkhead connectors to protect against water intrusion into the cab.

BATTERY CABLE INSTALLATION

COMPLY: **YES** **NO**

All 12-volt battery cables and battery cable harnessing installed by the apparatus manufacturer shall conform to the following requirements:

- SAE J 1127 - Battery Cable
- SAE J 561 - Electrical terminals, eyelets and spade type
- SAE J 562 - Nonmetallic loom
- SAE J 836 A - Automotive metallurgical joining
- SAE J 1292 - Automotive truck, truck-tractor, trailer and motor coach wiring
- NFPA 1901 - Standard for automotive fire apparatus

Battery cables and battery cable harnessing shall be installed utilizing the following guidelines:

- Splices shall not be allowed on battery cables or battery cable harnesses.
- For ease of identification and simplified use, battery cables shall be color coded. All positive battery cables shall be marked red in color. All negative battery cables shall be black in color.
- For ease of identification, all positive battery cable isolated studs throughout the cab and chassis shall be red in color.
- For increased reliability and reduced maintenance, all electrical buss bars located on the exterior of the apparatus shall be coated to prevent corrosion.

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

BATTERY SYSTEM

COMPLY: YES NO

Six (6) Group 31 maintenance free batteries shall be provided. Each battery shall be rated at 925 CCA at 0° F. Reserve capacity shall be 180 minutes. Wiring for the batteries shall be 4/0 welding type dual path starting cables for SAEJ541.

BATTERY STORAGE

COMPLY: YES NO

Batteries shall be securely mounted in fixed stainless steel trays located on each side of the chassis frame. Complete access shall be provided when the cab is fully tilted. Batteries shall be mounted on non-corrosive matting material. Each tray will have 2 drain holes in them. Plastic covers will be attached to the trays to cover and insulate the top of the batteries.

BATTERY DISCONNECT SWITCH

COMPLY: YES NO

The chassis batteries shall be wired in parallel to a single 12 volt electrical system, controlled through a heavy duty, Cole Hearse brand rotary type, master disconnect switch. The master disconnect switch shall be located within easy access of the driver upon entering or exiting the cab. All electrical circuits shall be disconnected when the switch is in the "OFF" position.

BATTERY JUMPER STUDS

COMPLY: YES NO

A set of Cole Hersee battery jumper studs, model #46210-02 (red) and #46210-03 (black) shall be provided to allow the battery system to be jump started or charged from an external source. The studs shall be located on the driver's side of the chassis and shall be equipped with rubber protector caps.

120 VOLT SHORELINE CONNECTION – AUTO EJECT

COMPLY: YES NO

One (1) Kussmaul "Super" Auto Eject model 091-55-20-120, automatic, 120 volt, 20 amp shoreline disconnect shall be provided for the on board, 110 volt battery charging systems.

The disconnect shall be equipped with a NEMA 5-20 P male receptacle, which shall automatically eject the shoreline when the vehicle starter is energized. A label shall be provided indicating voltage and amperage ratings. A LED bar graph display shall be located near the shoreline connection to monitor the battery status. The shoreline receptacle shall be located in the area directly adjacent to the driver's side cab door, above the side air grille.

ELECTRICAL WIRING DIAGRAMS

COMPLY: YES NO

Two (2) electrical wiring diagrams, prepared for the model of chassis and body, shall be provided. An electronic version shall also be provided.

AIR COMPRESSOR SYSTEM

COMPLY: YES NO

A Kussmaul 091-9HP air compressor shall maintain the air pressure in the chassis air brake system while the vehicle is not in use. The air compressor shall have a rated input at 120 volts AC @ 3.5 amps and an output of 1.4 CFM with a 125 psi max output.

APPARATUS CAB

COMPLY: YES NO

The cab shall be an engine forward extended four-door - tilt cab constructed entirely of aluminum. The cab shall be an "Open Interior" roll cage design requiring no inner walls or vertical interior supports.

The cab roof shall be raised 8 inches for additional headroom in order that all crew members derive the benefit of additional headroom. The raised portion shall start midway over the driver and officer seats. The cab shall be capable of seating six firefighters. The raised roof shall not impede the desired operation of the mid-mounted aerial device.

All storage areas inside the cab shall fully comply with NFPA 1901 restraint requirements.

The crew cab shall be of the totally enclosed design, with access doors constructed in the same manner as the driver and passenger doors.

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

The cab shall have rubber mounting and shall be tilted by a hydraulic pump connected to two (2) cab lift cylinders. The cab shall then be locked down by a two (2)-point automatic locking mechanism that actuates after the cab has been lowered. The crew cab entrance shall be a one (1) step design to the cab floor, for easy access. A minimum 20.00", slip resistant, handrail shall be provided adjacent to all door openings to assist entrance into the cab.

A chrome handrail shall be provided on the inside each front cab door, for ease of entry. All cab and crew cab entry doors shall contain a conventional roll down window.

Chrome plated pull-handle type door handle (Eberhard 21100 Series assembly) shall be provided on the exterior of the cab doors.

All interior cab door handles shall also have flush paddle handles (Eberhard assembly).

The door hinge shall be a stainless steel piano type with a .25" pin.

There shall be double automotive type rubber seals around the perimeter of the door framing and door edges to ensure a weather tight fit.

Full height polished stainless steel scuff plates shall be installed on the inside of all cab doors.

Cab door panels shall be removable without disconnecting door and window mechanisms.

Bright aluminum tread plate shall be overlaid on the outside rear wall of the crew cab except for areas that are not typically visible when the cab is lowered.

All cab glass shall be tinted.

Economical windshield replacement glass shall be readily available from local auto glass suppliers.

CAB LIFT

COMPLY: YES NO

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

The hydraulic pump shall have a manual override for backup in the event of electrical failure. Lift controls shall be on a panel located on the pump panel or front area of the body in a convenient location.

In addition to the panel controls, a 15' remote control shall be provided for raising and lowering the cab. The remote control shall be stored in the cab. The receptacle for the remote control shall be located next to the master controls on the panel.

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

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

A redundant mechanical stay arm shall automatically be engaged once the cab has been fully raised. Before lowering the cab, this device must be disengaged using the stay arm control located near the cab raise/lower switch.

INTERLOCK, CAB LIFT TO PARKING BRAKE

COMPLY: YES NO

The cab lift system shall be interlocked to the parking brake. The cab tilt mechanism shall be active only when the parking brake is set and the ignition switch is in the "on" position, if the parking brake is released the cab tilt mechanism shall be disabled.

CRASH TEST

COMPLY: YES NO

The fire apparatus manufacturer shall provide a cab crash test certification with this proposal.

The certification states that the cab must meet or exceed the requirements below:

- European Occupant Protection Standard ECE Regulation No.29
- SAE J2422 Cab Roof Strength Evaluation - Quasi-Static Loading Heavy Trucks
- SAE J2420 COE Frontal Strength Evaluation - Dynamic Loading Heavy Trucks

ROLLOVER PROTECTION SIDE AIRBAGS

COMPLY: YES NO

Vehicle shall be equipped with side airbags for all 4 side seat positions.

FRONT IMPACT AIRBAG

COMPLY: YES NO

The driver’s position is the only position needing the front impact airbag.

CAB MATERIALS

COMPLY: YES NO

The cab shall be constructed entirely of aluminum alloy extrusions and aluminum sheets. The corner posts, door slam posts, roof rails and doorframes shall be made of custom extrusions designed specifically for this cab with slots for inserting the skin. The rear wall and roof shall be reinforced with a grid of rectangular extrusions, which are welded to the overall cab extrusion framework. The front corner caps shall consist of castings designed specifically for this cab with relief areas cast in place for attachment of roof skin and intersecting structural extrusions. Overlapping formed corner caps are not acceptable.

Cab Dimensions:

- Overall width skin to skin: 96 inches - minimum
- Overall vehicle width: 120 inches - maximum (w/West Coast style mirrors)
- Overall length: 136 inches - minimum

CAB MIRRORS HEATED / REMOTE

COMPLY: YES NO

Two side-mounted rear view mirrors shall be installed with a 14.5" X 7" mirror head and a separate 6"x 8" parabolic mirror. The mirrors shall be heated and remotely adjustable by the driver. The mirrors shall be aerodynamically designed to reduce wind buffeting and resultant vibration. The housings shall be polished stainless steel or chrome.

The mirrors support tubes shall be 7/8" stainless steel, and includes breakaway mounting brackets.

DRIVER’S SEAT

COMPLY: YES NO

The driver's seat shall be a Bostrom Model Sierra high-back air suspension seat. The seat shall have 4-way adjustability by the driver in accordance with SAE J1517. The seat shall

be equipped with an integrated 3-point seat belt with an automatic retractor. The belt shall be RED in color to meet current NFPA requirements.

OFFICER'S SEAT

COMPLY: YES NO

The officer's seat shall be a Bostrom Tanker 450 SCBA non-suspension seat. Seat back shall include a spring-loaded flip-up headrest and Secure/All bracket. A removable padded cover shall be supplied over the SCBA cavity. The seat shall be equipped with an integrated 3-point shoulder harness with lap belt and an automatic retractor built into the seat assembly. The belt shall be RED in color to meet current NFPA requirements.

The bottle to be used is a Scott 30 Minute Carbon fiber bottle.

DRIVER'S SIDE REAR FACING CREW SEAT

COMPLY: YES NO

One-(1) SCBA outboard, rear facing, seat shall be installed behind the driver. The seat shall be Bostrom Tanker 450 SCBA non-suspension seat. The seat back shall include spring-loaded flip-up headrest and Secure/All bracket. Removable (padded) cover shall be supplied over the SCBA cavity. The seat shall be equipped with 3-point seat belt with automatic retractor. The belt shall be RED in color to meet current NFPA requirements.

The bottle to be used is a Scott 30 Minute Carbon fiber bottle.

OFFICER'S SIDE REAR FACING CREW SEAT

COMPLY: YES NO

One-(1) SCBA outboard, rear facing, seat shall be installed behind the officer. The seat shall be Bostrom Tanker 450 SCBA non-suspension seat. The seat back shall include spring-loaded flip-up headrest and Secure/All bracket. Removable (padded) cover shall be supplied over the SCBA cavity. The seat shall be equipped with 3-point seat belt with automatic retractor. The belt shall be RED in color to meet current NFPA requirements.

The bottle to be used is a Scott 30 Minute Carbon fiber bottle.

INBOARD FORWARD FACING CREW SEATS

COMPLY: YES NO

Two-(2) SCBA inboard forward facing seats shall be installed in the crew area. The seats shall be a FLIP UP Style Bostrom Tanker 450 non-suspension seats this will allow access to the compartment underneath the seat. Seat backs shall include spring-loaded flip-up headrest and Secure/All brackets. Removable (padded) covers shall be supplied over the SCBA cavities. The seat shall be equipped with a 3-point seat belt. The belts shall be RED in color to meet current NFPA requirements.

The bottle to be used is a Scott 30 Minute Carbon fiber bottle.

DOUBLE WALL CAB FACE

COMPLY: YES NO

The cab front shall be of double wall construction resulting in a sealed firewall, which provides for increased structural integrity, crew safety, and reduced road noise in the passenger area.

The outer wall is used for mounting forward lighting, grill and windshield wipers.

The inner portion shall be treated with a heavy black undercoating material for corrosion prevention.

SEALED ENGINE TUNNEL

COMPLY: YES NO

The engine tunnel shall be a structural part of the passenger cab, constructed from welded 3/16” aluminum plate and reinforced with aluminum extrusions.

The rear of the engine tunnel shall be no less than 57” inches from the rear wall of the cab, allowing maximum legroom for forward facing passenger.

After welding, the seams shall be completely sealed with silicone caulking.

The interior of the engine tunnel shall be insulated with 1” thick foil backed insulating foam, attached with stud and button method. A cross-section analysis of the insulation shall reveal a 1/8” thick barrier material for additional noise and heat insulation.

ACCESS PANEL FOR FLUID CHECKS

COMPLY: YES NO

A stainless steel access panel shall be provided in the engine tunnel to provide access to the engine fluids dipsticks; oil, transmission fluid & power steering. This panel shall also be sealed and shielded when properly in place.

CAB CORROSION PROTECTION

COMPLY: YES NO

A corrosion preventative material shall be applied during cab construction. A ten-(10) year warranty against corrosion perforation shall be provided for the cab.

WINDSHIELD

COMPLY: YES NO

It shall be a two (2) piece design with tinted automotive safety glass, with a wrap around design. A .030-inch thick vinyl layer shall separate the laminated glass. All other cab glass shall be tinted and tempered.

INTERMITTENT WINDSHIELD WIPERS

COMPLY: YES NO

Two electric "Pantograph" style windshield wipers shall be installed on the front face of the cab. The motors shall operate through a 72-degree sweep and include 24-inch blades to give superior wiper coverage. A washer reservoir of not less that 70 ounces shall be mounted a latched door recessed in the officer's step.

A switch located on the turn signal control arm shall operate the intermittent wipers.

EXTERIOR GRAB HANDLES

COMPLY: YES NO

Stainless steel handrails with a knurled, slip-resistant finish shall be positioned behind each cab door. Grab rails shall be minimum 24” in length. Molded rubber gasket shall be mounted between the grab handles and the cab in order to prevent corrosion due to dissimilar metals being in contact.

WINDSHIED DEFROSTER UNIT

COMPLY: YES NO

The defroster ventilation shall be built into the design of the cab dash instrument panel and shall be easily removable for maintenance. The defroster shall have a three (3) speed blower, and temperature controls accessible to the driver and officer. The defroster ducts shall be designed to provide maximum defrosting capabilities for the front cab windows.

CLIMATE CONTROL SYSTEM

COMPLY: YES NO

A climate-control system shall be provided for total cab environmental comfort. This system shall provide heat, cooling and defrost capabilities to various areas in the cab. The system shall consist of two (2) evaporator units, mounted in the center overhead of the cab. One (1) unit shall provide defrost, air conditioning and heat for the front of the cab and shall provide heating and cooling for the drivers and officers feet. One (1) unit shall provide heat and air conditioning for the back of the cab.

The ceiling mounted evaporator/heater unit for the front shall include the following:

- Dual high output blower.
- High efficiency coil that includes "rifled" tubing and oversized header tubes for maximum refrigerant distribution.
- Four (4) 3" diameter, adjustable louvers; two (2) each side of the cab overhead, facing the driver and officer seat positions.
- Four (4) 3" diameter, adjustable defroster louvers positioned above the windshield to provide optimum coverage.
- Four (4) 3" diameter adjustable louvers, one (1) below the driver and officer seat positions and one (1) under each outboard rear facing crew seat.
- Damper controls shall be pneumatically operated to provide air discharge to the windshield, front overhead air discharge louvers or floor position as required and shall be located above the driver seat position.
- An electric water valve to control the amount of heat.
- Fully insulated housing.
- BTU: 34,000 A/C minimum
- BTU: 50,000 Heat minimum
- CFM: 410 @ 13.8 volts

The ceiling mounted evaporator/heater unit for the crew area shall include the following:

- Dual high output blower

- High efficiency coil which includes, "rifled" tubing and oversized header tubes for maximum refrigerant distribution
- Eight (8) 3" diameter, adjustable louvers positioned to provide optimum coverage.
- Fully insulated housing.
- BTU: 36,400 A/C minimum
- BTU: 52,000 Heat minimum
- CFM: 440 @ 13.8 volts

ROOF MOUNT CONDENSER

COMPLY: YES NO

A 12-volt roof top condenser shall be strategically positioned on the cab roof so as not to interfere with any emergency lighting systems and shall include the following:

- High performance, long life fan assemblies. Fan motors are sealed around housing and shaft areas.
- Condenser and coil design includes rifled tubing for maximum efficiency. Coil is painted black.
- Condenser unit includes receiver drier with hi/lo pressure switch.
- Wire harness includes necessary wiring for clutch circuit as well as a separate power relay circuit.
- 14 gauge mounting brackets
- 16-gauge condenser frame and fan shroud
- 16 gauge aluminum cover, E-coated white

Mounting design will enable easy servicing of all components and unit replacement if necessary.

The ceiling mounted evaporator unit shall be covered with an ergonomically designed custom ABS panel to provide maximum headroom and a pleasing appearance.

BRUSH GUARD/COVER, AIR CONDITIONING CONDENSER

COMPLY: YES NO

A brush guard/cover shall be provided over the air conditioning condenser, on the cab roof. The brush guard shall protect the air conditioning condenser from tree limbs, etc. The guard shall also allow a fire fighter or maintenance personnel to step over the condenser without damaging the fiberglass housing.

The brush guard/cover shall be constructed of aluminum tread plate. The guard shall have several 1.00" x 2.00" knockouts to allow for adequate airflow around condenser.

CAB INTERIOR

COMPLY: YES NO

Cab floors shall be covered with a black pebble grain rubber matting with barrier type insulation. Edges of the insulation shall be trimmed with aluminum extruded angle for a pleasing appearance.

An insulated covering shall be fitted over the engine tunnel. Made from the same material as the cab floor insulation, this covering shall insulate the cab from engine heat and noise.

The back side of the engine cover, as well as a 2” to 3” return on the top side, shall be covered with stainless steel and be of sufficient strength to allow for 9G resistant mounting of any optional hand lights or portable radios and chargers specified by the customer.

The front door posts shall be trimmed with styled aluminum covers that conceal any wiring, as well as including a mounting area for rubberized grab handles. The center windshield post shall be a covered paint finish.

Prior to installing the headliner and rear wall padding, minimum R-10 insulation, shall be installed between the interlocking extrusions.

These covers serve to finish the interior, cover wiring harnesses and insulate the interior from sound and heat.

CAB INTERIOR LIGHTING

COMPLY: YES NO

Auxiliary lights shall be provided in the cab and consisting of:

- Two (2) Whelen LCD, red/clear dome light located, one (1) on the officer side and one (1) on the driver side, controlled by the following:
 - Clear forward light controlled by the door switch and the lens switch.
- Red rearward light controlled by the lens switch.
- Two (2) Adjustable Map Lights: With switches mounted on the cab ceiling.

CREW CAB INTERIOR LIGHTING

COMPLY: YES NO

Auxiliary lights shall be provided in the crew cab and consist of:

- Two (2) Whelen LCD, Red/Clear dome lights located one (1) each side, controlled by the following:
 - Clear forward light controlled by the door switch and the lens switch.
- Red rearward light controlled by the lens switch.

STEP LIGHTS

COMPLY: YES NO

4 Whelen LED, step lights shall be provided. The lights shall be installed at each cab and crew cab door, one (1) per step, in the driver side front doorstep, driver side crew cab doorstep, passenger side front doorstep and passenger side crew cab doorstep. The lights shall be activated when the adjacent door is opened.

SUN VISORS

COMPLY: YES NO

The cab shall be equipped with a minimum of three (3) sun visors. The visors shall be installed on the overhead panel and provide approximately 90 per cent coverage across

the width of the cab. The visors shall be approximately 30 inches wide and nine (9) inches tall.

GLOVE BOX

COMPLY: YES NO

The glove box shall be an integral part of the welded aluminum dashboard assembly and located on the officer side of the cab. The storage area of the glove box shall bolt in place for easy service access. The door shall be drop down style and constructed from brushed stainless steel with a recessed latch. The area above the glove box shall be flat for a work surface or optional MDT mounting.

STORAGE COMPARTMENTS

COMPLY: YES NO

There shall be a compartment provided under each front seat with a latched access door. The compartment shall minimum 14.50” deep X 14.50” across X 9.00” high. One of these compartments shall be able to be locked.

INNER DOOR PANELS

COMPLY: YES NO

The cab door interior panels shall be covered with a one piece, brushed stainless steel panel, full height. The panel shall be 16 gauge stainless steel with a brushed finish and shall be designed to allow easy access to the inner door.

DOOR WARNING-CHEVRON

COMPLY: YES NO

Four (4) Chevron reflective coverings shall be installed on the lowest portion of the inner door panels, one (1) on each door. These chevrons shall cover at least 96 in². The chevron striping shall be red/yellow to match the rear of the apparatus.

CAB STEPS

COMPLY: YES NO

All cab steps shall be of a stationary, fixed design that use no moving parts and requires no periodic maintenance other than cleaning.

There shall be an open-grip, bright finish step at each cab door opening. The area under the step shall be enclosed to prevent road dirt from entering the cab. There shall be provisions made at the front of the step for easily flushing out any dirt accumulation.

STEP HEIGHTS

COMPLY: YES NO

The distance from level ground to the first cab step shall be no more than 24” with Independent Front Suspension, without using swing-down style or under-cab “stirrup” auxiliary steps.

INSTRUMENTATION

COMPLY: YES NO

For easy viewing, gauges shall be black faced with white lettering and adjustable intensity, amber LED backlighting. In order to reduce replacement and maintenance costs, the gauges provided shall be separate from one another and not in a cluster or arrangement. The gauges shall meet SAE J-1939 protocol to eliminate redundant sending

units. Gauges must be fully sealed to 6 psi. Gauges shall have an operating temperature range of -40F to 185F. The gauge crystal shall be polycarbonate, anti-fog, and anti-scratch coated. The panels shall be divided into groups of instruments that make identification sensible and easy to view.

The following panels shall be included:

- Two driver side gauge panels
- One driver side warning light panel
- Driver side pump shift panel
- Driver side park brake panel
- Driver side diagnostic panel
- Driver side ignition panel
- Center mounted, minimum twenty (20) position switch and siren panel
- Officer side information panel

The following instruments shall be included:

- Dial Type speedometer with digital odometer and trip odometer that is active when pumping
- Dial Type tachometer with digital hour meter and trip hour meter along with a digital, four-line diagnostic display
- Dial Type engine oil pressure gauge with warning light and alarm
- Dial Type water temperature with warning light and alarm
- Dial Type transmission temperature with warning light and alarm
- Dial Type front air pressure gauges with warning light and alarm
- Dial Type rear air pressure gauge with warning light
- Dial Type voltmeter
- Dial Type fuel level gauge with low fuel indicator level
- Air cleaner restriction light
- High beam indicator
- Parking brake indicator
- Turn signal indicators
- Diagnostic indicators for airbag, engine, transmission, and ABS

The ignition panel shall include the ignition switch, engine start, instrument lamp dimmer switch, transmission pushbutton shift pad and front air conditioning and/or heating switches and remote heated mirror controls (if applicable).

An anti-lock braking system (ABS) test switch and park brake control valve shall be located to the right of the steering column.

SERVICE ACCESS

COMPLY: YES NO

The driver's instrumentation area shall be made of textured black non-glare panels affixed to the aluminum dash. There shall be two (2) gauge panels, secured with a bottom hinge and two (2) top-mounted quarter-turn fasteners. Access to the gauge clusters shall be accomplished simply by releasing the two latches and pulling the panel outward. Other gauge access designs are not acceptable.

The chassis electrical panel shall be located in the center of the aluminum dash, between the switch panel and the windshield. There shall be a lift up cover with two (2) recessed lift-and-turn latches for quick access to the panel. The underside of the panel shall have a pre-printed diagram that clearly depicts the function of each circuit breaker and relay. The vehicle load manager shall be located in this panel. The opening to the electrical shall measure approximately 19” wide near the switch panel and 37” wide toward the windshield.

Electronic diagnostic connections for the engine, transmission, and ABS brakes shall be located in the lower-left panel on the cab dash.

VEHICLE DATA RECORDER

COMPLY: YES NO

A vehicle data recorder (VDR) shall be provided. The VDR shall be capable of reading and storing vehicle information. The VDR shall be capable of operating in a voltage range from 8VDC to 16VDC. The VDR shall not interfere with, suspend, or delay any communications that may exist on the CAN data link during the power up, initialization, runtime, or power down sequence. The VDR shall continue operation upon termination of power or at voltages below 8VDC for a minimum of 10ms.

The vehicle data recorder shall be capable of recording the following data via hardwired and/or CAN inputs:

- Vehicle Speed - MPH
- Acceleration - MPH/sec
- Deceleration - MPH/sec
- Engine Speed - RPM
- Engine Throttle Position - % of Full Throttle
- ABS Event- On/Off
- Seat Occupied Status - Yes/No by Position (6 Seating Capacity-minimum)
- Seat Belt Buckled Status - Yes/No by Position (6 Seating Capacity-minimum)
- Master Optical Warning Device Switch - On/Off
- Time - 24 Hour Time
- Date - Year/Month/Day

HELMET HOLDERS

COMPLY: YES NO

There shall be six (6) Zico UHH-1 helmet holder bracket(s) provided in the cab. The brackets shall provide quick access and secure storage of the helmet(s). The bracket location(s) shall be determined at time of final inspection.

STEERING COLUMN

COMPLY: YES NO

The steering column shall be a Douglas Autotec (or similar) tilt and telescope. A lever mounted on the side of the column shall control the tilt and telescope features. A Signal-Stat (self-canceling) turn signal switch shall be mounted to the column. The steering shaft from the column to the meter box shall have a rubber boot to cover the shaft slip and a second rubber boot to seal the passage hole in the floor.

The steering wheel shall be 18 inches in diameter.

The Signal-Stat turn signal switch shall include the following functions:

- Left and right turn signals
- High beam dimmer control
- Hazard warning switch
- Two speed with intermittent windshield wiper control
- Windshield washer control

CAB ROOF OVERLAY

COMPLY: YES NO

A bright finish aluminum tread plate overlay shall be placed on the cab roof, starting at a point rearward of the light bar location and extending back to the end of the cab roof. This tread plate overlay shall be sealed with caulking around the edges to prevent moisture from entering the area between the cab roof and the overlay.

CAB ROOF DRIP RAIL

COMPLY: YES NO

For enhanced protection from inclement weather, a drip rail shall be furnished on the sides of the cab. The drip rail shall be constructed of bright polished extruded aluminum, and be fastened to the sides of the cab roof edge. The drip rail shall extend the full length of the cab roof.

TWO TONE CAB PAINT FINISH

COMPLY: YES NO

All cab exterior components including doors and glass, shall be removed. The complete cab exterior shall be thoroughly sanded, solvent cleaned and finished with high luster polyurethane paint before mounting of body to assure full coverage of paint to all surfaces.

The custom cab shall be a two-tone finish painted color. The paint color shall be furnished by the fire department. The break in the color shall be at the top of the chassis window drip rail, unless otherwise specified by the department.

- Top Color: WHITE - PPG (or equivalent), Code: 3225
- Bottom Color: RED - PPG (or equivalent), Code: 4006

ANTENNA INSTALLATION

COMPLY: YES NO

Three (3) antenna mounting base(s) with minimum 17' of coaxial cable shall be provided and installed on the lower cab roof, behind the light bar. The attached antenna wire(s) shall be run to the right side cab dash area. Mounting of the antennas will be behind the forward light bar and run right to left with at least 24" between them.

REAR CAMERA SYSTEM

COMPLY: YES NO

An ASA Voyager dual camera rear vision camera system shall be provided to allow the driver to visually see the rear of the apparatus while in the cab. The system shall include an ASA model #AOM7694 flat panel LCD color monitor mounted adjacent to the driver. The system shall include an ASA model #VCCS130 color camera that shall be mounted at the rear of the vehicle and a VCCSIDR camera mounted on the officer side of the cab. The rear & side vision cameras shall be wired to automatically activate when the chassis transmission is placed in reverse or the turn signal is activated.

The rear vision system shall be displayed on the same screens as the multiplex system if possible.

AUTOMATIC CHASSIS LUBRICATION

COMPLY: YES NO

An automatic lubrication system shall be provided. The lubrication shall be supplied while the vehicle ignition switch is active to allow a uniform application of grease to the locations listed. The electronic control unit that forms part of the system shall activate the pump after an adjustable interval time. The unit shall control and monitor pump operation and report any faults via an indicator light on the driver's dashboard of the cab. The lubrication system reservoir which requires a 15.00" wide x 14.50" high x 6.25" deep mounting area, shall be located in the right front compartment on the apparatus.

- Independent suspension control Arm Pivot Points
- Steering Miter Box
- Cab Hinge Pins
- Rear Axle Slack Adjusters
- Rear Axle Brake Cam Screws
- Rear Suspension Spring Pins
- Rear Suspension Shackle Pins
- Walking Beam Pins (Tandem axle, if applicable).

2. EXTERIOR LIGHTING

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

DOT CAB MARKER LIGHTS AND REFLECTORS

COMPLY: YES NO

Five (5) DOT approved Whelen (or equal) Light Emitting Diode (LED) cab marker lamps shall mounted on the top front edge of the cab roof.

Whelen amber LED marker lights/auxiliary turn signals with integral reflectors shall be provided on the side of the cab above the front wheel well, one (1) each side.

Whelen red LED marker lights with integral reflectors shall be provided at the lower side rear, one (1) each side.

Whelen LED side marker and turn lights shall be provided on the apparatus lower side, forward of rear axle, one (1) each side.

Whelen LED clearance lights shall be provided on the apparatus rear upper, one (1) each side at the outermost practical location.

Whelen LED identification light bar (3 lights) shall be mounted horizontally spaced between 6" and 12" apart facing forward, centered on the front of the platform. The lights shall be amber in color.

Truck-Lite #98034Y yellow reflectors (or similar) shall be provided on the apparatus body lower side, as far forward and low as practical, one (1) each side if the apparatus is 30' long or longer.

Truck-Lite #98034R red reflectors (or similar) shall be provided on the apparatus rear, one (1) each side at the outermost practical location.

RUBBER MOUNTED FLEXIBLE REAR BODY MARKER LIGHTS

COMPLY: YES NO

Two (2) rubber, angled LED marker lights shall be mounted on the rear most corner of the body, one (1) each side. The lights shall be mounted in a molded flexible rubber shaft that extends away from the body approximately 6". The lights shall be equipped with an amber lens facing forward and a red lens facing to the rear of the vehicle. The lights shall be wired to the parking light circuit.

TAIL, STOP, TURN AND BACK-UP LIGHTS **COMPLY:** YES NO

Two (2) Whelen 600 series, 4-1/8" x 6-1/2", LED red combination tail and stop lights, shall be mounted one each side at the rear of the body.

Two (2) Whelen 600 series, 4-1/8" x 6-1/2", LED amber arrow turn signal lights, shall be mounted one each side, on a vertical plane with the tail/stop lights.

Two (2) Whelen 600 series, 4-1/8" x 6-1/2", white LED back-up lights, shall be mounted one each side on a vertical plane with the turn/tail/stop signals. These lights shall activate when the transmission is placed in reverse gear.

Two (2) Whelen PLAST4V mounting flanges, installed one (1) on each side, shall be provided to mount the lights described above in one common mounting flange. The fourth opening shall be for the lower rear warning lights.

LED STEP AND BODY LIGHTS

COMPLY: YES NO

Whelen LED step and body lights will be provided and controlled with marker light actuation. Step lights will be located to properly illuminate all body and chassis access steps and walkway areas.

HOSEBED LIGHTS

COMPLY: YES NO

Two (2) lights shall be mounted one (1) each side of the hose bed. Each light shall illuminate the hosebed area.

Each light fixture shall have a polished chrome housing with overall dimensions of 8.25" long X 7.68" wide X 9.00" high. Each light fixture shall have a 35-watt Xenon HID (High Intensity Discharge) bulb (or similar) with integral 12 VDC ballast. Operating current shall be 7A, maximum inrush current 14A. Each fixture shall have a water resistant On-Off toggle switch located in an extruded housing that bolts directly to the main housing.

SCENE LIGHTS – ABOVE WINDSHIELD

COMPLY: YES NO

Two (2) Whelen Pioneer Super-LED series double brow-mount scene lights shall be provided, one on each side of the cab, directly above the windshield. The scene lights shall be controlled by a rocker switch in the master warning light switch console. All scene lights shall be wired through the load management system.

SCENE LIGHTS – BEHIND CAB DOORS

COMPLY: YES NO

Two (2) Whelen Pioneer Super-LED series semi-recessed angled scene lights shall be provided, one on each side of the cab, directly behind the front cab entrance door. The scene lights shall be controlled by a rocker switch in the master warning light switch console. All scene lights shall be wired through the load management system.

SCENE LIGHTS – REAR OF BODY

COMPLY: YES NO

Two (2) Whelen Pioneer Super-LED series semi-recessed angled scene lights shall be provided, one on each side of the rear body panel. The scene lights shall be controlled by a rocker switch in the master warning light switch console. All scene lights shall be wired through the load management system.

GROUND LIGHTS – CAB

COMPLY: YES NO

One (1) White Light LED ground flood light shall be provided under each side cab door entrance step, four (4) total. The ground lights shall turn on automatically with each respective door jamb switch and also by a master ground light switch in the warning light switch console.

Each light shall illuminate an area at a minimum 30" outward from the edge of the vehicle.

PUMP ENCLOSURE WORK LIGHTS-LED TYPE

COMPLY: YES NO

Work lights shall be provided on both sides inside the pump enclosure providing a minimum of 40 candlepower illumination.

ENGINE COMPARTMENT WORK LIGHTS – LED TYPE

COMPLY: YES NO

Work lights shall be provided on both sides inside the engine enclosure that will provide a minimum of 40 candlepower illumination.

3. WARNING LIGHTS & DEVICES

NFPA LIGHTING PACKAGE

COMPLY: YES NO

The following warning light package shall include all of the minimum warning light and actuation requirements for the current revision of the NFPA 1901 Fire Apparatus Standard. The lighting as specified shall meet the requirements for both "Clearing Right of Way" and "Blocking Right of Way" as noted.

LIGHT PACKAGE ACTUATION CONTROLS

COMPLY: YES NO

The entire warning light package shall be actuated with a single warning light switch located on the cab switch panel. The wiring for the warning light package shall engage all of the lights required for "Clearing Right of Way" mode when the vehicle parking brake is not engaged. An automatic control system shall be provided to switch the warning lights to the "Blocking Right of Way" mode when the vehicle parking brake is engaged.

WARNING LIGHTS

A Whelen Freedom model FN**QLED lightbar shall be mounted on the cab roof.

- The length of the lightbar shall be 82.00"
 - The lightbar shall include the following:
 - Six (6) red flashing forward facing LED modules.
 - Two (2) clear flashing forward facing LED modules.
 - Two (2) red flashing front corner LED modules.
 - One (1) red flashing driver side facing LED module.
 - One (1) red flashing officer side facing LED module.
 - One (1) Opticom™, traffic light controller with National standard. (Centered)
 - All lenses shall be clear
 - Two (2) switches located in the cab on the switch panel shall control this lightbar.
 - One (1) switch for the warning lights.
 - One (1) switch for the traffic light controller.

To meet NFPA requirements the clear warning lights and the traffic light controller shall be turned off when the parking brake is set.

WARNING LIGHTS (Cab Face)

One (1) pair of Whelen model 60*02F*R flashing Super LED lights (or similar) shall be provided on the front of the cab above the headlights.

The color of these lights shall be red Super LED/red lens and shall be provided with a matching flange kit.

There shall be headlight flashers installed to deactivate when the parking brake is set.

These lights are provided to meet or exceed NFPA required front zone lower optical light output and optical power output.

One (1) switch located on the instrument panel shall activate these lights.

SIDE ZONE LIGHTING

Four (4) Whelen M Series, flashing Super LED warning lights shall be located in the following positions:

- Two (2) lights, one (1) each side on the bumper extension.
- The color of these lights shall be red Super LED/red lens each side.
- Two (2) lights, one (1) each side above the rear wheels.
- Two (2) lights, one (1) each side above the front wheels.
- Four (4) lights, two (2) each side located in area of outriggers.
- Two (2) lights, one (1) each side on platform.
- The color of these lights shall be red Super LED/red lens each side.
- The above four (4) lights shall be required to meet or exceed the lower level optical warning and optical power requirements of NFPA.
- These lights shall be controlled by a lighted switch on the cab instrument panel.
- These lights shall be installed with a flange.

REAR ZONE LOWER LIGHTING

Two (2) Whelen model M Series flashing "Super" LED warning lights shall be located at the rear of the apparatus, required to meet or exceed the lower level optical warning and optical power requirements of NFPA.

- The color of these lights shall be red Super LED/red lens.
- One (1) switch in the cab on the switch panel shall control these lights.

WARNING LIGHTS (Rear of Hose Bed)

Two (2) Whelen B6LED (B6MM**P) LED warning beacons shall be provided at the rear of the truck, located one (1) each side. These lights shall be activated by a lighted switch on the instrument panel.

- The color of the lights shall be red LEDs with the driver's side dome being red, and the officer's side dome being amber.

- These lights shall be installed with a polished cast aluminum flange/base.

WARNING LIGHT SYSTEM CERTIFICATION

The warning light system(s) specified above shall not exceed a combined total amperage draw of 45 AMPS with all lights activated in either the "Clearing Right of Way" or the "Blocking Right of Way" mode.

The warning light system(s) shall be certified by the light system manufacturer(s), to meet all of the requirements in the current revision of the NFPA 1901 Fire Apparatus Standard as noted in the General Requirements section of these specifications. The NFPA required "Certificate of Compliance" shall be provided with the completed apparatus.

TRAFFIC ADVISOR WARNING LIGHT

One (1) Whelen LED Split "Traffic Advisor", model TA4437L, rear directional light be installed on the vertical rear surface of the body. Each split light module to be equipped with four (4) lamps. The directional light be activated by a control module. The control module is to be conveniently located near the driver's position. The rear directional light be wired through the load management system of the unit.

ELECTRIC HORN

A single electric horn activated by the steering wheel horn button shall be furnished. The air horn shall also be able activated on the steering wheel.

BACK-UP ALARM

An ECCO, Model SA917-PM2, solid-state electronic audible back-up alarm that actuates when the truck is shifted into reverse shall be provided. The device shall sound at a minimum 60 pulses per minute and automatically adjust its volume to maintain a minimum five (5) dBA above surrounding environmental noise levels.

4. FIRE PUMP / TANK & CONNECTIONS

FIRE PUMP

COMPLY: <input type="checkbox"/> YES <input type="checkbox"/> NO

The fire pump shall be a HALE Single Stage 1500 GPM Pump Q-Max Model # 8FG 1500 (mid-ship).

All valves shall be Akron swing out style valves.

- PUMP ASSEMBLY:
 - The pump shall be of a size and design to mount on the chassis rails of commercial and custom truck chassis, and have the capacity of 1,500 gallons per minute (U.S. GPM), NFPA-1901 rated performance.
 - The entire pump shall be assembled and tested at the pump manufacturer's factory.

- The pump shall be driven by a drive line from the truck transmission. The engine shall provide sufficient horsepower and RPM to enable pump to meet and exceed its rated performance.
 - The entire pump shall be hydrostatically tested to a pressure of 600 PSI. The pump shall be fully tested at the pump manufacturer's factory to the performance spots as outlined by the latest NFPA Pamphlet No. 1901. Pump shall be free from objectionable pulsation and vibration.
 - The pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI (2069 bar). All metal moving parts in contact with water shall be of high quality bronze or stainless steel. Pump utilizing castings made of lower tensile strength cast iron not acceptable.
 - Pump body shall be vertically split, on a single plane for easy removal of entire impeller assembly including clearance rings.
 - Pump shaft to be rigidly supported by two bearings for minimum deflection. The bearings shall be heavy-duty, deep groove ball bearings in the gearbox and they shall be splash lubricated.
 - The pump impeller shall be hard, fine grain bronze of the mixed flow design; accurately machined, hand-ground and individually balanced. The vanes of the impeller intake eye shall be hand ground and polished to a sharp edge, and be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.
 - Pump impeller shall be hard, fine grain bronze of the mixed flow design; accurately machined hand ground and individually balanced. The vanes of the impeller intake eyes shall be hand ground and polished to a sharp edge and be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.
 - Impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body.
 - The pump shaft shall be heat-treated, electric furnace, corrosion resistant stainless steel. Pump shaft must be sealed with double-lip oil seal to keep road dirt and water out of gearbox.
- GEARBOX:
 - Pump gearbox shall be of sufficient size to withstand up to 16,000 lbs. ft. of torque of the engine. The drive unit shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature..
 - The gearbox drive shafts shall be of heat-treated chrome nickel steel and at least 2-3/4 inches in diameter, on both the input and output drive shafts. They shall withstand the full torque of the engine.
 - All gears, both drive and pump, shall be of highest quality electric furnace chrome nickel steel. Bores shall be ground to size and teeth integrated and hardened, to give an extremely accurate gear for long life, smooth, quiet running, and higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrust. (No exceptions.)
 - The pump ratio shall be selected by the apparatus manufacturer to give maximum performance with the engine and transmission selected.

- If the gearbox is equipped with a power shift, the shifting mechanism shall be a heat treated, hard anodized aluminum power cylinder, with stainless steel shaft. An in-cab control for rapid shift shall be provided that locks in road or pump.
- For automatic transmissions, three green warning lights shall be provided to indicate to the operator(s) when the pump has completed the shift from Road to Pump position. Two green lights to be located in the truck driving compartment and one green light on pump operators panel adjacent to the throttle control. For manual transmissions, one green warning light will be provided for the driving compartment. All lights to have appropriate identification/instruction plates.
- **PRIMING PUMP:**
 - The priming pump shall be a positive displacement, oil-less rotary vane electric motor driven pump conforming to the requirements of NFPA 1901. The pump body shall be manufactured of heat treated anodized aluminum for wear and corrosion resistance.
 - The pump shall be capable of producing a minimum 24 Hg vacuum at 2000 feet above sea level.
 - The electric motor shall be a 12 VDC (or 24 VDC) totally enclosed unit.
 - The priming pump shall not require lubrication.
 - The priming pump shall be operated by a single push-pull control valve mounted on the pump operator panel. The control valve shall be of all bronze construction.
- **PUMP MOUNTS:**
 - Extra heavy duty pump mounting brackets shall be furnished. These shall be bolted to the frame rails in such a position to perfectly align the pump so that the angular velocity of the drive line joints shall be the same on each end of the drive shaft. This shall assure full capacity performance with a minimum of vibration. Mounting hardware shall utilize Grade 8 bolts.
- **PUMP OPERATOR'S PANEL:**

Particular attention is to be given to functional arrangement of all controls. The pump operator's panel shall accommodate the following:

 - Hinged gauge panel
 - Water tank fill valve
 - Auxiliary suction valve control
 - All discharge valve controls
 - Auxiliary engine cooler controls
 - Water tank suction control valve
 - Pump primer valve
 - Engine throttle control
 - Master compound vacuum gauge
 - Master pressure gauge

- Individual discharge gauges
- Pump shift engaged indicator light
- Water tank water level indicator
- Engine tachometer
- Engine oil pressure gauge with audible alarm
- Engine water temperature gauge with audible alarm
- Low voltage light and audible alarm
- Pump panel light switch
- Speed counter (Underwriters)
- Pump performance plate (Underwriters)
- Pump serial No. plate
- Master pump drain valve
- Individual drains
- Voltmeter
- Air inlet/outlet at lower left hand panel
- Fuel Gauge

Proposers shall indicate proposed style gauges and indicators.

DISCHARGE CAPS

COMPLY: <input type="checkbox"/> YES <input type="checkbox"/> NO

Chrome plated brass, rocker lug; caps with chains shall be furnished for all side discharge outlets.

The caps shall be the VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected.

PRECONNECTED CROSS-LAYS

COMPLY: <input type="checkbox"/> YES <input type="checkbox"/> NO

The pump module design shall include an area for three cross lays with appropriate dividers. Two (2) shall have a capacity of 200' double stack loads of 1.75" double jacket hose, with 1 1/2" Iron Pipe thread. The third shall have a capacity of 200' of 2.5" double jacket hose double stack load, with 2 1/2 "National Standard Thread. This will be done with the ability to allow loading of the hose with the aerial devise bedded. All cross-lays to be plumbed with 90 degree brass swiveling elbows and the area used for the hose loads will be covered by a raised plastic type material to allow for air movement under the hose loads. A vinyl cover shall be provided. It shall be securely fastened at the front with snaps and Velcro at the rear, with straps to secure each end flap.

HOSE BED

COMPLY: <input type="checkbox"/> YES <input type="checkbox"/> NO

A hose bed will be provided to be able to deploy a minimum of 800' of 4" / 5" supply line from the rear of the apparatus. This is to be placed right side in such away as to allow for maximum compartment space on the apparatus. The area used for the hose bed will be covered by a raised plastic type material to allow for air movement under the hose load. A vinyl cover shall be provided. It shall be securely fastened at the front with snaps and Velcro at the rear, with straps to secure each end flap.

MASTER INTAKE VALVES

COMPLY: YES NO

The pump shall have two (2) Hale Master Intake Valves installed within the pump assembly on both sides of the vehicle on main suction intake of the fire pump as specified below:

- The inlet valve shall be a full flow butterfly type valve designed to mount on the fire pump between the suction tube extension and suction tube behind the pump compartment panel. The valve shall not interfere with other suction or discharge openings on the fire pump or with pump operating controls when properly mounted.
- The entire valve shall be manufactured and tested at the pump manufacturer's factory.
- When the two valves are installed on the fire pump, the pump shall be capable of achieving an NFPA/UL test rating of 1500 GPM (minimum) using dual 6 inch NST suction hoses.
- The valve body and related components that are in contact with water shall be manufactured of fine grained corrosion resistant bronze.
- The butterfly disc shall be manufactured from 80,000 PSI minimum yield strength heat treated cast steel then coated with a durable nitrile rubber to provide a positive seal when the valve is closed.
- Testing and rating of the valve shall be accomplished at the valve manufacturer's factory. The valve, less relief valve, shall be hydrostatically tested to 600 PSIG. The valve shall then be vacuum tested to 26 inches Hg.
- A pressure relief valve shall be provided that is factory set to 125 PSI and field adjustable from 75 to 250 PSI. The pressure relief valve shall provide overpressure protection for the suction hose even when the intake valve is closed. An integral relief valve mounting pad shall be provided on the valve body. This mounting pad shall provide a Hale type 115 4-3/8 inch bolt circle flange for normal installation. The mounting pad shall have 2-1/2 inch female NPT threads to permit remote mounting of the relief valve without special adapters. The outlet of the pressure relief valve shall have 2-1/2 inch NPT threads to allow directing the discharge flow away from the pump operator position.
- The inlet valve(s) shall be operated by a 12 VDC electric motor with remote capabilities or by a manual handwheel located next to the suction tube.
- Each valve shall be provided with panel placards indicating control operation. The placards shall have status lights to indicate whether the valve is open, closed or traversing from one position to another.
- Each valve shall be provided with a gear actuator that will cycle the valve from OPEN to CLOSED position in no less than 3 seconds. The gear actuators shall be sealed units designed to provide reliable service in the harsh pump compartment environment. The ratio of the gear actuator shall be such that the handwheel will close the valve in no more than 10 complete turns.
- The 12 VDC motor on the electric operated valve shall be provided with an automatic resetting, thermally compensated, overcurrent protection circuit breaker to protect the 12 VDC motor and apparatus electrical system.

- The electrical wiring for the valve shall be minimum 14 AWG, type SXL or GXL (SAE J1128) and shall be protected using 257 F minimum flame retardant, moisture resistant loom or braid. All electrical connections shall use sealed Packard Weather Pack connectors to provide extra protection from the harsh pump compartment environment to ensure long life and reliable operation.
- The valve body shall have a 3/4 inch female NPT threaded port on the top to allow installation of an NFPA compliant large diameter hose air bleeder valve. The air bleeder valve shall be mounted on the operator panel and be controllable by the pump operator. Air bleeder valve connections shall have a restriction no larger than 3/4 inch to prevent water hammer when filling hose.
- The valve body shall have a 1/4 inch female NPT threaded port on the bottom to permit connection of an individual water drain valve.
- A suction tube extension 7-1/4 inches wide shall be used to allow for the additional length of the inlet valve. The shorter suction tube extension, along with a 4, 6 or 9 inch suction tube, will keep the suction tube threads within the apparatus running boards while maintaining clearance for adapters.
- A panel mounted manual override shall be provided to permit operation of the electric remote control valve in the event of abnormal operating conditions. The manual override shall be designed to permit operation of the valve without the use of special tools or disassembly of the pump compartment panel or valve.
- The valve shall be equipped with o-ring seals for the mounting flanges. The o-ring seal groove shall be sized for proper squeeze of the o-ring for pressures in excess of 600 PSIG.

WATER TANK

COMPLY: YES NO

The water tank shall have a minimum capacity of 300 gallons, constructed from UPF PolyIIE. The UPF PolyIIE water tank shall be furnished with a lifetime warranty (expressed in years) upon delivery.

WATER TANK CONSTRUCTION

COMPLY: YES NO

The UPF PolyIIE water tank shall be constructed from 1/2" thick PT2E polypropylene sheet stock. This material shall be a non corrosive stress relieved thermo-plastic, natural in color, and U.V. stabilized for maximum protection.

The water tank shall be of a specific configuration and are also designed to be completely independent of the body and compartments. All joints and seams shall be nitrogen welded and tested for maximum strength and integrity. The top of the booster tank is fitted with removable lifting eyes designed with a 3 to 1 safety factor to facilitate easy removability. The transverse swash partitions shall be manufactured of 3/8" PT2E polypropylene (natural in color) and extend from approximately 4" off the floor to just under the cover. The longitudinal swash partitions shall be constructed of 3/8" PT2E polypropylene (natural in color) and extend from the floor of the tank through the cover to allow for positive welding and maximum integrity. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow. All swash partitions

interlock with one another and are welded to each other as well as to the walls of the tank.

TANK LID

COMPLY: YES NO

The tank cover (lid) shall be constructed of 1/2" thick PT2E polypropylene, natural in color, and U.V. stabilized, to incorporate a multi three-piece design which allows for individual removal and inspection if necessary. The tank cover shall be recessed 3/8" from the top of the tank and shall be welded to both sides and longitudinal partitions for maximum integrity. Each one of the covers shall have hold downs consisting of 2" polypropylene dowels spaced a maximum of 30" apart. These dowels shall extend through the covers and become welded to the transverse partitions. This shall assist in keeping the cover rigid under fast filling conditions. A minimum of two lifting dowels shall be drilled and tapped 1/2" of 13" to accommodate the lifting eyes.

TANK FILL TOWER

COMPLY: YES NO

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of 1/2" PT2 polypropylene and shall be a minimum dimension of 8" x 8" outer perimeter. The tower shall be located in the left front corner of the tank unless otherwise specified by the purchaser in Special Provisions. The tower shall have a 1/4" thick removable polypropylene screen and a PT2 polypropylene hinged type cover.

OVERFLOW AND VENT PIPE

COMPLY: YES NO

The fill tower shall be fitted with an integral 4" I.D. schedule 40 P.V.C. combination overflow/vent pipe running from the fill tower through the tank to a 4" coupling flush mounted into the bottom of the tank to allow water to overflow below the aerial body.

TANK SUMP AND CONNECTIONS

COMPLY: YES NO

There shall be one (1) sump standard per tank. The sump is a minimum of 8" wide, 8" long and 7" deep with a 3/4" bottom and is located in the center front bottom of the tank, unless specified otherwise in special provisions. The sump shall have a minimum of 3" threaded plug located at the bottom for a tank drain. An anti-swirl plate shall be mounted inside the sump approximately 1" off the floor of the sump.

TANK OUTLETS

COMPLY: YES NO

There shall be two (2) standard tank outlets; one for tank-to-pump suction line which shall be a minimum of a 3" coupling and one for a tank fill line which shall be a minimum of a 2" N.P.T. coupling. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank.

5. BODY CONSTRUCTION

APPARATUS BODY CONSTRUCTION

COMPLY: YES NO

The apparatus body and subframe shall be constructed entirely of marine grade aluminum plate and extrusions.

The complete apparatus body structure shall be all welded construction and free of nuts, bolts, and other fasteners. Upon completion of the weldments, the body shall be completely sanded and deburred for the purpose of remove of all sharp edges to prevent injury.

COMPARTMENTS

COMPLY: YES NO

Shall be configured to allow for maximum size. All compartments are to be sprayed with Line-X (or similar), color to be determined. Interior lighting shall be LED located on the left and right side of the door opening facing into the compartment from the door opening.

COMPARTMENT FLOORS

COMPLY: YES NO

The compartment floors shall be flush with door opening to provide a sweep-out design, also to provide an unobstructed door opening and permit easy cleaning of each compartment.

Compartments designed to set on running boards or with a lip at bottom of door opening, shall not be acceptable.

LOUVERS

COMPLY: YES NO

All body compartments shall have a minimum of one (1) set of louvers stamped into a wall to provide the proper airflow inside the compartment and to prevent water from dripping into the compartment. These louvers shall be formed into the metal and not added to the compartment as a separate plate, they will also be at the upper most section of the compartment as to keep road debris from entering the compartment.

COMPARTMENT DOORS

COMPLY: YES NO

Doors to be roll up style doors. On compartments where the roll up door will take up most of the usable space, a standard style door shall be used. Drip protection shall be provided over all door openings by means of a bright aluminum extrusion or formed bright aluminum treadplate. The side compartment tops shall be covered with bright aluminum treadplate, with a 1.00" rolled over edge on the front, rear and outward sides. The covers shall be fabricated in one (1) piece with the corners "TIG" welded. A bright aluminum treadplate cover shall be provided on the front wall of each side of the compartment, wherever standard doors are used. All screws and bolts which protrude into the compartment shall have acorn nuts at the ends to prevent injury.

ADJUSTABLE SHELVES

COMPLY: YES NO

There shall be allowances for four (4) shelves, with a minimum capacity of 200 pounds provided. The shelf construction shall consist of .125" pan-shaped aluminum with 2.00" sides. Each shelf shall be infinitely adjustable by means of a threaded fastener, which slides in a track. Location of shelves to be determined at pre-construction meeting.

TWO (2)-WAY UTILITY TRAY

COMPLY: YES NO

There shall be allowances for two (2) slide-out trays provided. The capacity rating shall be 500 pounds minimum in the extended position. Interior tray dimensions shall be as wide as possible for the compartment. The tray shall slide out full depth of its length. The construction shall consist of .188" thick aluminum for the tray bottom, and special aluminum extrusions for the tray sides, end, and tracks. Corners shall be welded to form a rigid unit. Tray shall be supported with a minimum of six (6) ball bearing rollers; each rated for a minimum 500 pound load. Automatic locks shall be provided for both the in and out tray positions.

AIR BOTTLE STORAGE COMPARTMENTS

COMPLY: YES NO

A total of seven (7) SCBA air bottle storage compartments (8" high x 8" wide x 24" deep) shall be inserted into the body fender area on a 5 degree pitch. The compartments shall be located with three (3) on the left side and four (4) on the right side of the rear body fender panels. The lower portion of the compartments shall be lined with Line-X (or similar) to absorb shock and help secure the bottle. Each storage compartment shall be equipped with a polished stainless steel door.

RUB RAIL

COMPLY: YES NO

The bottom edge of the side compartments shall be trimmed with a bright stainless steel rub rail. The rub rail shall be 2.00" high and extend 1.00" away from the body, with slanted ends to provide a pleasing appearance.

These rub rails shall not be an integral part of the body construction, which allows replacement in the event of damage.

6. GENERATOR

HYDRAULIC DRIVEN GENERATOR

COMPLY: YES NO

The generator system shall be an Onan model CMHG 10000 GenSet, PTO/Hydraulic, rated at 10,000 watts, 83/42 amps @120/240 VAC, single phase generator. The generator shall maintain a 60 Hz frequency between 850 and 3000 rpm.

The generator shall consist of hydraulic motor, alternator, cooling fan and a heat exchanger in a stainless steel housing. The reservoir shall be a 3-gallon hydraulic tank with an integral filter, gauge, temperature switch, breather, fill port and a site glass to be installed for fluid level. The generator shall be accessible for ease of service.

The Onan limited warranty covers virtually everything except routine maintenance for the first five (5) years or the first 1000 hours of operation.

The generator output conductors shall be 8 gauge and the output conductors shall be routed through non-metallic conduit 3/4" in diameter.

The digital Onan display shall be by FRC and shall display Hz, voltage, amperage, oil temperature and hours. The meter shall be installed near the breaker panel.

GENERATOR PTO

COMPLY: YES NO

A hot shift PTO shall be provided on the transmission for the Onan generator. The PTO shall be controlled from the cab. The control shall include a PTO engagement switch and a PTO engaged indicator light.

The generator shall be mounted in a place as to allow for easy maintenance.

Locating the generator greater than 144" from the main breaker panel may require the installation of an additional power disconnecting means.

LOAD CENTER

COMPLY: YES NO

The generator output line conductors shall be wired from the generator output connections to a Square D, model #QO112L125G breaker panel. The breaker panel shall be equipped with a properly sized main breaker using two (2) of the twelve (12) spaces which leaves a total of ten (10) available spaces. The generator output conductors shall be sized to 115% of the main breaker rating and shall be installed as indicated in the wiring section. Eight (8) appropriately sized, 120 volt, circuit breakers shall be provided. The breaker panel shall be located in the 1st high side compartment on the driver side of the body closest to the pump panel.

WIRING METHODS

COMPLY: YES NO

Wiring/conduit shall not be attached to any chassis suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components or low voltage wiring. All wiring shall be installed at a minimum of 12 inches away from any exhaust piping and a minimum of 6 inches from any fuel lines. All wiring shall be securely clamped within 6 inches of any junction box and at a minimum of every 24 inches of run. All supports shall be of nonmetallic material or corrosion protected metal. All supports shall not cut or abrade conduit or cable and shall be mechanically fastened to the vehicle. All power supply assembly conductors, including neutral and grounding conductors, shall have an equivalent amperage rating and shall be sized to carry not less than 115% of the main breaker rating. All Type SO or Type SEO cable not installed in a compartment shall be installed in wire loom. Where Type SO or Type SEO cable penetrates a metal surface, a rubber or plastic grommet or bushing shall be provided. The installation of all 120/240 wiring shall meet the current NFPA-1901 Standards.

WIRING IDENTIFICATION

COMPLY: YES NO

All line voltage conductors located inside the main breaker panel box shall be individually and permanently identified. When prewiring for future power wiring installations, the non-terminated ends shall be labeled showing functions and wire size.

CIRCUIT BREAKER/RECEPTACLE INSTALLATION

COMPLY: YES NO

The system shall be installed by highly qualified electrical technicians to assure the required level of safety and protection to the fire apparatus operators. When multiple circuits are required, the circuits shall be wired to the breaker panel in a staggered configuration to minimize electrical loads on each breaker or generator (leg) circuit. The wiring, electrical fixtures and components shall be to the highest industry quality standards available on the domestic market. The equipment shall be the type as designed for mobile type installations subject to vibration, moisture and severe continuous usage.

RECEPTACLE INSTALLATIONS

COMPLY: YES NO

Any receptacle installed in a wet location must be a minimum of 24 inches above the ground and provided with an approved wet location cover. Wet receptacles may not be mounted at more than 45 degrees from vertical, nor can they be mounted in a face-up position.

Two (2) 110 volt, NEMA L5-20, 20 amp, Single twist-lock receptacle with a grey thermoplastic, corrosion resistant, weatherproof cover shall be installed on at each side of the of the rear wheel well panels and one close to the cab on each side. (Total of Four (4))

All receptacles shall require one (1) 20 amp, 110 volt circuit breaker to be installed in the load center.

One (1) 110 volt, NEMA L5-20, 20 amp, Single twist-lock receptacle with a grey thermoplastic, corrosion resistant, weatherproof cover shall be installed on right rear of the apparatus.

One (1) 110 volt, NEMA L5-20, 20 amp, Single twist-lock receptacle with a grey thermoplastic, corrosion resistant, weatherproof cover shall be installed in the Platform.

The receptacle shall require one (1) 30 amp, 220 volt circuit breaker to be installed in the load center.

GROUNDING

COMPLY: YES NO

The neutral conductor of the power source shall be bonded to the vehicle fame only at the power source.

The grounded current carrying conductor (neutral) shall be insulated from the equipment grounding conductors and from the equipment enclosures and other grounded parts. The neutral conductor shall be colored white or gray.

In addition to the bonding required for the lower voltage return current, each body and driving/crew compartment enclosure shall be bonded to the vehicle frame by a copper conductor. The conductor shall have a minimum amperage rating of 115 percent of the name plate current rating of the power source specification label.

ELECTRIC CABLE REELS

COMPLY: YES NO

Two (2) Hannay Model #ECR-1616-17-18, 120 volt, electric rewind cord reels shall be provided and wired to the breaker panel. The reels shall be securely mounted and equipped with a rewind controls adjacent to each reel.

The cord reels shall be mounted as directed by the fire department.

The circuit breaker used to protect any device attached to the cord reel shall be sized to the smallest electrical connection used.

ELECTRIC CABLE

COMPLY: YES NO

Two hundred (200) feet of Type SO black 12/3 heavy duty electric cable shall be provided on each of the reels.

JUNCTION BOX (ES)

COMPLY: YES NO

Two (2) Circle-D Model #PF51G-5, four (4) outlet junction box(es) with four (4) NEMA L5-20R twist-lock receptacles direct wired on the end of the cable shall be provided.

CABLE ROLLER ASSEMBLY

Two (2) four (4) roller assembly(s) shall be provided adjacent to each cord reel to provide un-obstructed deployment and rewinding of the cable.

Two (2) cable ball stop(s) shall be installed on the cable to keep the cable end from passing through the roller assembly.

One (1) holder(s) constructed from 1/8" aluminum tread plate shall be provided for each cord reel(s) junction box. The location of the holder shall be adjacent to the cord reel roller assembly or as directed by the fire department.

7. 95'-100' MID-MOUNTED AERIAL LADDER/PLATFORM

GENERAL INFORMATION

The 95'-100' aerial ladder/platform assembly shall be a five (5) section telescoping ladder constructed from a minimum of 70,000 PSI yield high strength steel alloy, steel platform, pre-piped waterway, steel turntable, torque box and outriggers.

INTENT OF AERIAL SPECIFICATIONS

The intent of these specifications is to describe a telescoping elevating ladder. It shall consist of the true steel truss ladder type. It shall consist of an 1000 pound capacity platform, five (5) steel ladder sections, a steel turntable, torque box and (4) four H-style outriggers. The height of the unit shall be 95'- 100' and the horizontal reach shall be at least 90' at 0 degrees.

It is the intent that the device must meet all the requirements of the National Fire Protection Association's (NFPA) 1901 standard, 2009 edition. It is also the intent of the purchaser to secure a fire service proven piece of apparatus that shall be manufactured in the U.S.A.

It is not the intent to deviate from this requirement; therefore, ladders attached to booms, whether solid or lattice, or articulating arms shall not be considered as meeting these specifications or the intent of these specifications.

AERIAL DESIGN STANDARDS

The ladder shall be constructed to meet all of the requirements as described in the current Edition of NFPA 1901 (2009).

These capabilities shall be established in an unsupported configuration. All structural load supporting elements of the aerial device that are made of a ductile material shall have a design stress of not more than 50% of the minimum yield strength of the material based on the combination of the live load and the dead load. This 2:1 structural safety factor meets the current NFPA 1901 standard. All structural load supporting elements of the aerial device that are made of non-ductile material shall have a design stress of not more than 20% of the minimum ultimate strength of the material, based on the combination of the rated capacity and the dead load. This 5:1 safety factor meets the current 1901 NFPA standard. The aerial device shall be capable of sustaining a static load one and one-half times its rated tip load capacity (live load) in every position in which the aerial device can be placed when the vehicle is on a firm level surface.

The aerial device shall be capable of sustaining a static load one and one-third times its rated tip load capacity (live load) in every position the aerial device can be placed when the vehicle is on a slope of five degrees downward in the direction most likely to cause overturning.

With the aerial device out of the cradle in the in the fully extended position at zero degrees elevation, a test load shall be applied in a horizontal direction normal to the centerline of the ladder. The turntable shall not rotate and the ladder shall not deflect beyond what the product specification allows.

All welding shall be in compliance with the American Welding Society standards. All welding personnel shall be certified, as qualified under AWS welding codes. All material and welds shall have a fatigue life structural safety factor of 2:1. This shall be derived from taking into account structure weight, payload, wind load, ice load, nozzle reactions, and dynamics.

The aerial device shall be capable of operating with the maximum rated tip load in both of the two (2) following conditions:

- Conditions of high wind up to 50 mph
- Conditions of icing, up to a coating of .25" over the entire aerial structure

All of the design criteria must be supported by the following test data:

- Strain gage testing of the complete aerial device
- Analysis of deflection data taken while the aerial device was under test load

The following standards for materials are to be used in the design of the aerial device:

- Materials are to be certified by the mill that manufactured the material
- Materials that are certified or recertified by vendors other than the mill shall not be acceptable
- Material testing that is performed after the mill test shall be for verification only and not with the intent of changing the classification.

AERIAL MOUNTING

COMPLY: YES NO

The elevating platform turntable shall be mid-ship mounted to keep the travel height to a maximum of ten foot six inches (10' 6"). **NO EXCEPTIONS!**

The elevating platform turntable shall be mid-mounted thus providing the following vehicle benefits:

- Improved mobility from lower travel height.
- Capability of vehicle fitting into Goffstown FD fire stations.

APPARATUS BODY DAMAGE CONTROL INTERLOCK SYSTEM

COMPLY: YES NO

A safety feature shall be included in the aerial operational system that minimizes the possibility of damage to the apparatus body at all angles for all standard (non-override) operational modes.

The system shall automatically stop the downward movement of the aerial at a preset angle of elevation unless the aerial has been rotated at least 80-degrees, left, or right from

the center of the ladder support. Once this rotation point is reached, full range downward movement (to minus 12 degrees) shall be allowed.

The aerial manufacturer shall determine and set the angle of elevation where downward aerial movement is stopped. The highest point of an apparatus, in relation to the distance from the turntable, shall be used to determine the preset elevation angle stopping point.

The system shall also minimize the possibility of accidental damage to the apparatus body from aerial rotation whenever the aerial elevation is below the preset elevation angle stopping point.

Aerial rotation shall be automatically stopped before the aerial contacts the body of the apparatus and the rotational speed shall be reduced by approximately 50% when the aerial is rotated to within a minimum of 10 degrees of a body avoidance stopping point.

The bodies, damage interlock system shall have no effect on aerial operation when the aerial is raised above the preset downward movement stopping point.

The bodies, damage interlock system shall not eliminate the possibility of damage to components such as telescopic lights that are in a raised position.

ROTATION INTERLOCK SYSTEM

COMPLY: <input type="checkbox"/> YES <input type="checkbox"/> NO

The aerial device shall be equipped with a rotation interlock system to prevent the ladder from being rotated to any side where the stabilizers are not sufficiently extended to provide for the full tip load rating.

The system shall monitor the stabilizers for extension. When a stabilizer is not sufficiently extended (short-jacked) to provide full tip load rating, the system shall prevent the aerial from being rotated more than 15 degrees past the front or rear centerline into the short-jacked side of the apparatus.

Once activated, the system shall prevent the aerial from being rotated past the front or rear corner of the apparatus where a stabilizer is not properly deployed.

A slowdown feature shall be built into the rotation interlock system. When the aerial is operating in a short-jacked mode, the rotational speed shall be automatically reduced, by approximately 50%, when the aerial is rotated to within approximately 10 degrees of the front or rear centerline of the apparatus. The rotational speed shall remain reduced until the interlock takes over at the 15 degrees mark over the front or rear of the apparatus, regardless of the direction of the rotation movement.

The rotation function shall automatically stop when the aerial arrives at 15 degrees toward the short-jacked side of the apparatus.

The rotation interlock system shall allow for normal operation on the side of the apparatus where the stabilizers are sufficiently extended for full tip load rating.

CAB COLLISION INTERLOCK

COMPLY: YES NO

The apparatus shall be equipped as a standard with a cab collision, protection interlock. This interlock shall be enabled while rotating the aerial device at elevations as low as, or lower than the cab of the apparatus.

Should the operator accidentally rotate the aerial device toward the cab at an elevation low enough to cause a collision with the cab, the interlock shall automatically stop rotation of the aerial at a point that is within a few degrees of the cab.

A manual override shall be provided that shall override the interlock system.

HEIGHT AND REACH

COMPLY: YES NO

The bidder shall supply the Height and Reach of the proposed platform in accordance of NFPA-1901 - 2009 edition section 19.23 standards.

TURNTABLE CONTROL CONSOLE

COMPLY: YES NO

The turntable control console shall be located on the left hand side of the turntable, on the driver's side of the apparatus. The console shall be illuminated (LED) for night time operation and shall have a hinged weather cover. Pressurized gas filled cylinder shall be furnished on cover to hold it in the open position. The gas filled cylinder shall assist in closing the cover automatically when it is positioned over center.

The console surface shall be angled toward the operator so controls may be viewed and operated ergonomically. Rubber bumpers shall be provided so that when the control console lid is closed, the lid and the control panel will be protected from each other (no metal to metal contact).

Three (3) handles for the ladder hydraulic functions (elevation, rotation, and extension) shall be installed at the control console. The controls shall be manual for safety and durability reasons - **NO EXCEPTIONS**. A cast alloy plate with openings cast into it for the ladder hydraulic function levers to extend through, shall be provided to encircle the aerial ladder hydraulic function levers. The function of each control lever shall be cast into the plate under the appropriate lever.

The controls shall be capable of being operated independently or simultaneously with a gloved hand. The speed of movement caused by moving any control shall be minimally affected when multiple controls are moved.

A push/pull systems engagement control shall be installed at the control pedestal. The control shall energize the hydraulic system for ladder function and provide flow of hydraulic fluid to the master valve bank. An automatic throttle switch shall be attached to the systems engagement control that advances the engine speed to a preset RPM.

Each item provided on the console not labeled from the manufacturer, shall be provided with a permanent cast alloy label. The information on the label shall be stamped or professionally engraved for lasting durability.

A hinged door shall be provided on the front of the control console. This door shall be provided with a lift and turn latch. Opening of this door shall allow access to the inner components for inspection purposes. A recessed work light shall be provided in the access door.

All turntable controls shall override the controls in the platform.

The following items shall be furnished at the console, clearly identified and located for ease of operation and viewing:

- Elevation, Extension and Rotation Controls
- Lighted Push/Pull Button to Deactivate Hydraulic & Electrical System
- Fast Idle Button
- Panel Light Mounted in Cover
- Rung Alignment Light
- Ladder Light Switches
- Ladder Overload Warning Horn
- System Pressure Gauge
- Nozzle Position Indicator
- LoadMinder
- Emergency Pump Unit Switch and Light
- Monitor Function Controls
- Platform Master Switch
- Intercom with Controls
- Operators Load Chart
- Warning Signs

CENTRALIZED LUBRICATION SYSTEM, AERIAL

COMPLY: YES NO

A centralized lubrication system for the aerial device shall be provided on this unit. It shall consist of a grease transfer system. The system shall assist in lubricating the aerial and turntable at the following locations:

- Lift Cylinders
- Rotation Bearing

HOURLY METER

COMPLY: YES NO

There shall be an hour meter installed at the turntable control station, connected to the system engagement control for the aerial. The meter shall register the total hours of aerial use for scheduling periodic maintenance.

STABILIZERS**COMPLY:** YES NO

The stabilizer system, "H" type, shall consist of four (4) independently operated double box beam "out and down" stabilizers. The forward stabilizers, located behind the chassis cab, shall have a lateral spread of 18 feet. The rear stabilizers, located behind the rear wheels, shall have a lateral spread of 16 feet minimum. The stabilizers shall form an integral part of the substructure. Also, this arrangement shall ensure that the under truck clearance and angle of departure are not reduced. The system shall be equipped with an audible alarm that activates during the operation of the stabilizers. Each stabilizer vertical cylinder shall be equipped with both an integral holding valve to maintain the stabilizer in the stored position and a piloted check valve to hold the stabilizer in the working position should a charged line fail at any point within the hydraulic system. The stabilizers shall be constructed of high strength .50" thick steel on the top and bottom. All cylinders shall be fully enclosed within telescopic boxes to protect the cylinder rods against damages which may occur while in contact with the ground. A stabilizer interlock system shall be provided to prevent rising of the aerial device prior to all stabilizers being extended and in firm contact with the ground.

The ground contact area for each stabilizer shall be such that a unit pressure not greater than 75 psi (500 kPa) shall be exerted over the ground contact area when the apparatus is loaded to its maximum in-service weight and the aerial device is carrying its rated capacity in every position permitted by the manufacturer.

Four (4) composite ground pads 24.00" x 24.00" with mounting brackets shall be provided. Each jack shoe shall be capable of swiveling on longitudinal and transversal axis of the apparatus.

AERIAL BREATHING AIR SYSTEM**COMPLY:** YES NO

Breathing air shall be supplied to the aerial platform. The air system shall incorporate two (2) 444 cubic foot (minimum), 6,000-psi cylinder. To allow the turntable operator an unobstructed view of the platform the cylinders shall be mounted on the passenger side of the aerial base section. A pressure regulator located at the air cylinders. A shutoff valve with guard shall be provided on the cylinders. The air shall be routed to the basket using hose especially designed for use in breathing air systems. At the basket, the breathing air shall be piped to two (2) air mask quick disconnects. The two (2) disconnects shall be located one (1) at the front and one (1) at the rear of the aerial basket. A weather resistant storage compartment for the air masks shall also be provided in the basket. A 50' recharge hose shall be provided for refilling the air cylinder without having to remove the tank from its mounting. A visual & audible alarm shall activate at both control stations when the air systems has less than 20% remaining.

ELECTRIC SWIVEL**COMPLY:** YES NO

The ladder shall be equipped with an electric swivel to allow 360 degrees rotation of the aerial while connecting all electrical circuits through the rotation point. A minimum of 32 collector rings shall be provided that are capable of supplying 20 amp continuous service.

All collector rings shall be enclosed and protected with desiccant plugs against condensation and corrosion. No oil or silicone shall be used.

PLATFORM FRAMEWORK

COMPLY: YES NO

The aerial platform framework shall be constructed of steel.

PLATFORM HANDRAIL ASSEMBLY

COMPLY: YES NO

A continuous, unbroken handrail shall be provided on all four sides of the platform. The handrail shall enclose an area of the platform. The handrails on the front corners shall be mounted at the same angle as the platform floor for a uniform front and side step area.

A 4" kick plate shall be provided around the floor and perimeter of the handrail assembly.

PLATFORM ACCESS GATES

COMPLY: YES NO

Two (2) self-closing access gates shall be provided for entry into the platform. They shall be provided at the front corners of the platform and shall not interrupt the top safety rail. Both gates shall swing out to the rear of the platform. Each gate shall include automotive type safety latches. Each gate shall be designed to incorporate an integral handrail in the top section of the door. The integral handrail shall be constructed from round aluminum tubing that shall be covered with a "glow-in-the-dark" anti-slip material. The gate hinges shall be a two-point type hinge to eliminate binding associated with a piano type hinge.

PLATFORM ACCESS LADDER AND HANDRAILS

COMPLY: YES NO

Continuous ladder contact between the platform and the ladder fly section shall be maintained by attaching a sliding auxiliary ladder section to the platform that shall follow the platform as it moves away from the ladder during elevation.

Handrails shall be provided between the ladder fly section and the platform that automatically position themselves for maximum protection for transfer to or from the platform no matter what the ladder's angle of elevation.

The main entrance between the ladder and platform shall be located at the rear. The rear gate shall be round tubing, mounted to a two position spring loaded hinged, which shall give the gate the capabilities of being lifted up 90° or up and in 90° into the platform. When the rear gate is in the closed position it shall rest in a socket type receptacle located on the rear main handrail structure of the platform. The rear gate shall be equipped with a mechanical pin to secure the gate in a fixed position.

PLATFORM DECK SURFACE

COMPLY: YES NO

The floor of the platform shall be aluminum grating with an aggressive serrated surface. This decking shall provide excellent footing in all environments and working conditions.

Simple bar type grating or tread plate shall not be acceptable due to the fact that they become slippery under many conditions or do not sufficiently shed liquids.

This aggressive decking shall extend outside of the enclosed portion of the platform a minimum of 4" on the sides and 10" on the front. The front and side leading edges of the platform shall be protected by a heavy duty, "D" type extruded rubber bumper.

The decking shall be of a design that shall allow debris to fall through it to the anodized aluminum heat shield under it. This design shall prevent debris from interfering with operator footing, yet prevent the debris from falling on persons below the platform.

DECK WORK LIGHTING

COMPLY: <input type="checkbox"/> YES <input type="checkbox"/> NO

There shall be adequate lighting installed within the platform to illuminate the entire floor area during night operations. The lights shall be hooded to direct all light downward and shall automatically energize anytime the aerial system is activated. These lights shall be installed inside the platform in such a manner that they shall not become damaged during operation by moving personnel or shifting equipment in the platform.

HOSE BOX AT PLATFORM

COMPLY: <input type="checkbox"/> YES <input type="checkbox"/> NO

A hose storage box with a hinged cover shall be provided on the left side rear at the platform, located on the exterior of the platform. The box shall be constructed of smooth aluminum and shall be painted to match the aerial device. The box shall have a capacity of 100' of 1.75" hose and nozzle with pistol grip.

PLATFORM EQUIPMENT STORAGE BOX

COMPLY: <input type="checkbox"/> YES <input type="checkbox"/> NO

There shall be an equipment storage box provided on the right side rear of the platform. The storage box shall be constructed of smooth aluminum plate, and shall be painted to match the existing platform structure. The box shall be located on the rear/outside walls of the platform.

The box shall be constructed to be weather tight and come with a hinged lid and a lift and turn latch that is easily operated with a gloved hand. The box shall be suitable for storage of tools & air masks/equipment.

AERIAL WATERWAY DISCHARGE

COMPLY: <input type="checkbox"/> YES <input type="checkbox"/> NO

The 4" aerial waterway discharge shall be gated at the pump by a full flow ball valve.

The piping from the pump to the waterway swivel shall be 5" minimum piping. The piping shall be a minimum of heavy duty piping which shall incorporate a system of pipe clamps for easy removal.

A 4" Akron, #8800 series, full flow, ball valve shall be provided for the waterway discharge.

The waterway Akron ball valve shall be equipped with an Akron Brass Style 9315 Navigator Valve Controller. The electric controls must be of current limiting design, requiring no clutches in the motor. Unit must have booted switches with momentary open and close as well as an optional one touch full open feature to operate the actuator.

The unit must be capable of being connected to both a Flow and Pressure Sensor and shall provide an LCD display showing pressure and/or flow as well as valve position indication. The unit must be able to be programmed to GPM or LPM as well as PSI or kPa. There shall be a preset relief valve in the waterway between the valve and the monitor to protect the waterway when retracting.

AERIAL WATERWAY MONITOR & CONTROLS

COMPLY: YES NO

The following nozzle shall be supplied for the master stream device on the aerial: Akron Stream Master XT Model # 3598 12 Volt Nozzle Model # 5178 (fog) & Nozzle Model # 3499 (Stack Tips) Akron Logic Box, Aux. Battery Box, 2 Flush mount Controls and 2 Position Indicators, one for platform and one for the base.

2-1/2" DISCHARGE AT FRONT OF PLATFORM

COMPLY: YES NO

There shall be one (1) 2-1/2" discharge located at the front of the platform. The discharge shall be controlled at the platform by an AKRON model 2285 quarter-turn ball valve. The outlet shall have a chromed brass 2 1/2" NST male thread with a chromed brass 2 1/2" female to 1 1/2" male iron pipe reducer with a chromed brass 1 1/2" iron pipe cap and chain. The valve shall allow for easy access for the platform operator.

PLATFORM CONTROL STATION

COMPLY: YES NO

Controls for the platform functions shall be located front and center of the work area in a manner that is consistent with the pedestal at the base.

The console shall be constructed of smooth steel plate that shall be painted to match the existing construction. Controls shall be widely spaced to allow for easy operation with a gloved hand.

The extension, elevation, and rotation control levers shall be spring loaded joystick type controls or equivalent with an automatic lockout feature that prevents operation of the control if it is merely bumped or accidentally actuated. NO EXCEPTION shall be allowed to this design, as accidental movement of the platform shall be **unacceptable**.

A minimum of two (2) Control Panel Illumination lights (LED) shall be provided to illuminate the control console during night operation. The lights shall be mounted above the panel surface to cast maximum illumination on the panel's surface. The lights shall be hooded so that all light is directed toward the panel and not back at the operator.

All controls shall be labeled utilizing permanent labels constructed of aluminum alloy. The information on the labels shall be professionally engraved or permanently cast into the labels for lasting durability and quality.

All wiring and hoses shall be routed in such a manner (hidden) that there shall be NO possibility of getting snagged or damaged by the operator or occupants during operations.

Controls within the platform area shall include:

- Elevation, Extension & Retraction Controls
- Platform Safety Override Leveling Button & Light
- Water Curtain Control
- Load Minder Readout with Alarm
- Two Hooded Control Station Panel Illumination Lights (LED)
- Monitor Function Controls
- Intercom
- Warning Signs
- Nozzle position Indicator

PLATFORM REMOVABLE BRACKETS

COMPLY: YES NO

Removable brackets shall be provided for use at the front of the platform basket to increase the safety of firefighters during fireground and rescue operations. These brackets shall be capable of holding up to a 20 foot roof ladder securely in place. The ladder shall be secured through its beams and one (1) rung, by a bar capable of being latched in place and able to withstand a minimum of a 500 pound load. The complete system shall maintain and exceed these criteria as well. There shall also be a latching system to keep the ladder in a vertical position at all times and shall latch on a rung, at least two (2) rungs below the primary attachment point. Strain gauging and testing has been completed on the system, (ladder and complete holding device), proving the above criteria has been satisfied.

A minimum of one (1) removable rappelling arm shall be provided. The rappelling arm shall mount to the front of the platform basket with brackets, one (1) each side centered over the monitor/s and shall be held in place with hardened hitch pins. The rappelling arm shall be easily removable for storage. The rappelling arm shall have a capacity of 300lbs (minimum).

Rescue (Stokes) basket support brackets shall be provided. The removable brackets shall mount to the front of the platform basket, one (1) each side centered over the monitor/s and shall be held in place with hardened hitch pins. The brackets shall be easily removable for storage. Basket straps shall be used to secure the basket to the brackets.

REQUIRED MANUALS

COMPLY: YES NO

The aerial manufacturer shall provide two (2) operator maintenance manuals and two (2) wiring diagrams pertaining to the aerial device. The manuals shall be also in electronic format.

GROUND LADDERS

COMPLY: YES NO

The following approved fire service ladders shall be furnished and must meet or exceed the latest NFPA 1931 standards:

- Two (2) 35', two (2) section, aluminum, Series 1200-A
- One (1) 28', two (2) section, aluminum, Series 1200A
- One (1) 18', roof, aluminum. Series 875-A
- One (1) 16', roof, aluminum, Series 875-A
- One (1) 15', Combination Jackknife "A", Series 300-A or "Little Giant"
- One (1) 10', folding, aluminum, Series 585-A

The ground ladders shall be stored below the cargo floor and shall be removable from the rear.

The storage area shall be constructed to eliminate ladder exposure to rain, road salt and dirt.

They shall rest in full-length stainless steel slides and be arranged so they can be removed individually.

A satin aluminum roll-up door shall be provided at the rear to close the ladder compartment. The door shall have extruded aluminum construction. The latching mechanism shall consist of a full length lift bar lock with latches on the outer extrusion of the door frame.

A door guard shall be provided to prevent tools inside the torque box from damaging the roll-up door.

Mounting provisions for one (1) of the above 16' Duo Safety 875A roof ladders shall be mounted at the left base section of the aerial device, behind the aerial lettering panel.

TOOLS

COMPLY: YES NO

The following tools shall be provided for retorquing of all specified bolts as recommended by the manufacturer:

- All Required Extensions, Sockets and Adapters

PAINT

COMPLY: YES NO

The exterior custom cab and body painting procedure shall consist of a six (6) step finishing process as follows:

1. Manual Surface Preparation - All exposed metal surfaces on the custom cab and body shall be thoroughly cleaned and prepared for painting. Surfaces that shall not be painted include all chrome plated, polished stainless steel, anodized aluminum and bright aluminum treadplate. Each imperfection on the exterior metal surface shall be removed or filled and then sanded smooth for a smooth appearance. All seams shall be sealed before painting.
2. Chemical Cleaning and Treatment - The metal surfaces shall be properly cleaned using a high pressure and high temperature acid etching system. Surfaces are chemically cleaned to remove all dirt, oil, grease and metal oxides to ensure the subsequent coatings bond well. An ultra pure water final rinse shall be applied to all metal surfaces, excluding undercarriage components, at the conclusion of the metal treatment process.
3. Primer/Surfacers Coats - A two (2) component urethane primer/surface shall be hand applied to the chemically treated metal surfaces to provide a strong corrosion protective base coat and to smooth out the surface.
4. Hand Sanding - The primer/surface coat shall be lightly sanded to an ultra smooth finish.
5. Sealer Primer Coat - A two (2) component sealer primer coat shall be applied over the sanded primer.
6. Topcoat Paint - Two (2) coats of an automotive grade, two (2) component acrylic urethane paint, shall also be applied.

The exterior colors shall be: RED (PPG) or equivalent on the lower portion of the cab and WHITE (PPG) or equivalent on the upper portion of the cab and on the aerial device. Color code to be furnished by the department.

All removable items such as brackets, compartment doors, door hinges, trim, etc. shall be removed and painted separately to insure paint behind all mounted items. Body assemblies that can not be finish painted after assembly shall be finish painted before assembly.

The cab shall be two-tone, with the upper section (top of the windshield) painted white and lower section of the cab and body painted Paint Color red to match current Goffstown apparatus.

One pint of touch up paint is to be provided at time of delivery of completed apparatus for each color of finish paint (White and Red) used on the apparatus.

CLEARCOAT PAINT SEALER

COMPLY: YES NO

The exterior of the vehicle and doors shall be painted as standard and then sprayed with two (2) coats of clear sealer. The cab and body exterior paint finish shall be warranted for topcoat durability and appearance, which covers gloss, color retention and cracking at 100% for a period of no less than six (6) years.

PAINT, COMPARTMENT INTERIOR

COMPLY: YES NO

Interior of the compartments shall be sprayed with a Line-X type coating, color TBD.

AERIAL DEVICE PAINT

COMPLY: YES NO

All aerial device structural components above the rotation point that are not chrome plated or stainless steel shall be painted white.

All buy out components, such as monitor, nozzle, gauges, etc. shall be supplied as received from the vendor.

All areas to be painted shall be shot-blasted to remove any metal flakes and smooth any rough surfaces.

The aerial surfaces to be painted shall be phosphatized to remove metal impurities, aid paint adhesion and inhibit rust.

The components shall be prime painted with an epoxy primer and finished painted with a durable, high gloss polyurethane paint.

The turntable, aerial sections and the platform shall be painted high quality white paint (manufacturer's standard brand) and the support structure, rotation motor, components below the rotation point, and the stabilizers shall be painted high gloss black.

A red/yellow reflective chevron stripe shall be provided on the vertical and horizontal members of the stabilizers.

All the hydraulic hoses, wiring and non-ferrous metals shall be masked off before painting.

8. ADDITIONAL EQUIPMENT REQUIRED

PUMP RELATED EQUIPMENT

COMPLY: YES NO

Note: All 2 ½” and 3” fittings shall be National Standard Thread (NST). All 1 ½” fittings shall be Iron Pipe Thread. All fittings shall be Kochek pyrolite – color: RED.

- 1 – 2 ½” Female to 1 ½” Male reducer
- 1 – 2 ½” Double-male
- 1 – 2 ½” Double-female
- 1 – 1 ½” Double-male

- 1 – 1 ½” Double-female
- 2 – 2 ½” Female to 4” Stortz
- 2 – 2 ½” Male to 4” Stortz
- 1 – 4” to 5” swivel Stortz
- 1 – 2 in 1 Universal Stortz Adapter 3" Female NST X 4" Stortz & 2 ½”
- 2 – Sets of 4”/5” spanner wrenches
- 2 – Sets of 1 ½” – 2 ½” spanner wrenches
- 2 – hydrant wrenches
- 2 – Akron hydrant gate valves
- 1 – rubber mallet

NOZZLES

COMPLY: YES NO

- 2 – Akron Saber Jet – Double shutoff 1 ½” Ironpipe, 15/16” Pistol Grip & Bail (RED) – Model # 1523
- 1 – Akron Saber Jet - Double shutoff 1 ½” Ironpipe, 15/16” Pistol Grip & Bail (RED) – Model # 1522
- 2 – Akron Assault Nozzles – 2 ½” Model # 4830 at break apart 1 ½” Ironpipe thread
- 2 – Akron Plain Tip Solid Bore – 1 ½” Ironpipe Thread style # 1417, 1 ¼” Bore

TOOLS

COMPLY: YES NO

- 2 - Pick Head Axes (1 mounted in Platform)
- 2 – 10lbs. Sledgehammer w/ fiberglass handle
- 1 – Firehooks®, Mini Probar – 20”
- 2 – Firehooks®, 32” All Purpose Hook w/ D-Handle (fiberglass)
- 2 - Firehooks®, 6’ Roof Rake w/ D-Handle (fiberglass)
- 2 - Firehooks®, 6’ Drywall Hook w/ D-Handle (fiberglass)
- 2 - Firehooks®, 8’ Multipurpose Hook w/ D-Handle (fiberglass) (1 mounted on Ladder)
- 1 - Firehooks®, 10’ Multipurpose Hook (fiberglass)
- 1 - Firehooks®, 12’ Multipurpose Hook (fiberglass)

VENT FAN

COMPLY: YES NO

- 2 – Tempest, 16” 1.5HP TEFC – 11,804 CFM (18.5”X20”X20.5”)

PORTABLE LIGHTING

COMPLY: YES NO

- 6 - Responder Division II W/ 12 Volt Charger & spare battery at each seat location (installed)
- 2 – HID Litebox 35W Lantern W/ 12 Volt Charger and shoulder straps (installed in a location TBD)
- 2- Quartz Lighting Units – 500W minimum

RESCUE / VENTILATION SAW

COMPLY: YES NO

- 1 - Husqvarna 576 XT Ventmaster Chainsaw W/ Bullet Chain (18” BAR)

HOSE

COMPLY: **YES** **NO**

- 8 - 4" Niedner Supply line 100' Lengths Yellow W / Locking couplings
- 2 - 4" Niedner Supply line 25' Lengths Red W / Locking couplings

AED

COMPLY: **YES** **NO**

- 1 - Physio Control Lifepak 1000

MISC. EQUIPMENT

COMPLY: **YES** **NO**

- 5 – 28” Double Reflective Strip Traffic Cones
- 4 - Ladder Belts sizes; 1-small, 2-medium & 1-large (tethers)
- 1 - Stokes Basket-Pro-Series Stainless steel-CMC 1 piece tapered design Model # 726100 (shall be mounted at the right base section of the aerial device, behind the aerial lettering panel.)

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Town of Goffstown, New Hampshire

Request for Proposals

ATTACHMENT A

BIDDER'S QUALIFICATIONS AND REFERENCES FORM

All questions **must** be answered, and the data given must be clear and comprehensive. Please type or print legibly. If necessary, add additional sheet for starred items. This information will be utilized by the Town of Goffstown for purposes of determining bidder responsiveness and responsibility with regard to the requirements and specifications of the Contract.

1. FIRM NAME: _____
2. WHEN ORGANIZED: _____
3. INCORPORATED? YES NO. DATE AND STATE OF INCORPORATION: _____
4. LIST ALL CONTRACTS CURRENTLY ON HAND, SHOWING CONTRACT AMOUNT AND ANTICIPATED DATE OF COMPLETION:

5. HAVE YOU EVER FAILED TO COMPLETE A CONTRACT AWARDED TO YOU?
 YES NO
IF YES, WHERE AND WHY?

6. HAVE YOU EVER DEFAULTED ON A CONTRACT?
 YES NO
IF YES, PROVIDE DETAILS.

7. LIST YOUR VEHICLES/EQUIPMENT AVAILABLE FOR THIS CONTRACT:

8. In the spaces following, please provide information regarding contracts completed by your firm similar in nature to the project being bid. A minimum of four (4) contracts should be listed. Publically bid contracts are preferred, but not mandatory.

PROJECT NAME: _____
OWNER: _____
CITY/STATE: _____
DOLLAR AMOUNT: \$ _____ DATE COMPLETED: _____
PUBLICLY BID? YES NO
TYPE OF WORK?: _____
CONTACT PERSON: _____ TELEPHONE #: _____

PROJECT NAME: _____
OWNER: _____
CITY/STATE: _____
DOLLAR AMOUNT: \$ _____ DATE COMPLETED: _____
PUBLICLY BID? YES NO
TYPE OF WORK?: _____
CONTACT PERSON: _____ TELEPHONE #: _____

PROJECT NAME: _____
OWNER: _____
CITY/STATE: _____
DOLLAR AMOUNT: \$ _____ DATE COMPLETED: _____
PUBLICLY BID? YES NO
TYPE OF WORK?: _____
CONTACT PERSON: _____ TELEPHONE #: _____

PROJECT NAME: _____
OWNER: _____
CITY/STATE: _____
DOLLAR AMOUNT: \$ _____ DATE COMPLETED: _____
PUBLICLY BID? YES NO
TYPE OF WORK?: _____
CONTACT PERSON: _____ TELEPHONE #: _____

9. The undersigned certifies that the information contained herein is complete and accurate and hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the Town of Goffstown in verification of the recitals comprising this statement of Bidder's qualifications and experience.

DATE: _____

BIDDER/VENDOR: _____

SIGNATURE: _____

PRINTED NAME: _____

TITLE: _____



Town of Goffstown, New Hampshire

Request for Proposals

ATTACHMENT B

Town of Goffstown
New Tower Ladder Fire Truck

NON - COLLUSION CLAUSE:

PLEASE DETACH AND SUBMIT WITH PROPOSAL

The undersigned certifies under penalties of perjury that this bid is in all respects, bonafide and fair, and made without collusion or fraud with any other person. As used in this section, the word "person" means any natural person, joint venture, partnership, corporation or other business or legal entity.

(Signature of Person Responsible for Bid Submittal)

(Date)

(Company / Firm)



Town of Goffstown, New Hampshire

Request for Proposal

ATTACHMENT C

**Town of Goffstown
New Tower Ladder Fire Truck**

PLEASE DETACH AND SUBMIT WITH PROPOSAL.

In accordance with the specifications, the undersigned hereby submits the following bid:

Cost to Town (No trade in) \$ _____

Optional: Trade-In Value:1988 Ladder Truck* \$ _____

Submitted For (Vendor Name): _____ Submitted By: _____
Name: _____ Name: _____
Address: _____ Title: _____
_____ Phone: _____

Options: Not part of the base bid above.

- (1) Bullard T 4 Thermal Image Camera W/ 12 Volt Charger & 2 Extra Batteries
\$ _____
- (1) Mobile Computer, Mounting and Installation (see specification on ATTACHMENT F)
\$ _____
- Performance Advantage Co. (PAC) Tool Board System installed into 3 compartments (TBD by GFD)
\$ _____

- - Trade-in vehicle: “as-in condition”, vehicle only, no equipment.



Town of Goffstown, New Hampshire

Request for Proposals

ATTACHMENT D

PLEASE DETACH AND SUBMIT WITH PROPOSAL.
PROPOSAL SHEET

The undersigned hereby agrees to provide and deliver (1) **NEW TOWER LADDER FIRE TRUCK** and related services and equipment in accordance with the terms, conditions and specifications of the **RFP: NEW TOWER LADDER FIRE TRUCK**, for the below listed firm description and information:

Apparatus Manufacturer: _____

Apparatus Model # or Description: _____

Local Distributor: _____

Distributor's Fed. Tax ID #: _____

Local Service Center Location: _____

Equipment and maintenance service will be dispatched from: _____

Response time for service shall not exceed _____ hours.

Proposed Warranty Length:

Chassis Warranty: _____ year(s)

Chassis Frame Rail Warranty: _____ year(s)

Engine Warranty: _____ year(s)

Transmission Warranty: _____ year(s)

Braking System Warranty _____ year(s)

Fire Pump Warranty: _____ year(s)

Apparatus Body Warranty: _____ year(s)

Water Tank Warranty: _____ year(s)

Rust Warranty: _____ year(s)

Paint Warranty: _____ year(s)

Aerial Parts and Labor Warranty: _____ year(s)

Aerial Waterway and Seals Warranty: _____ year(s)

Aerial Structure Warranty: _____ year(s)

WARRANTIES SHALL NOT COMMENCE UNTIL AFTER DELIVERY, TESTING AND IN-SERVICE TRAINING IS COMPLETED.

Delivery date, in CALENDAR DAYS, after receipt of award: _____

DELIVERY LOCATION:

**Goffstown Fire Department
18 Church Street
Goffstown, New Hampshire 03045**



Town of Goffstown, New Hampshire

Request for Proposals

ATTACHMENT E

PLEASE DETACH AND SUBMIT WITH PROPOSAL

SPECIFICATIONS EXCEPTION FORM

In the interest of fairness and sound business practice, it is mandatory that you state any exceptions taken by you to our specifications. It should not be the responsibility of the Town of Goffstown to ferret out information concerning the materials which you intend to furnish.

If your bid/quotation does not meet all of our specifications you **must** so state in the space provided below (this attachment may be duplicated, as needed):

Proposals on equipment, vehicles, supplies, service and materials not meeting specifications may be considered by the Town, however, all deviations must be listed above. If your proposal does not meet our specifications, and your exceptions are not listed above, the Town of Goffstown may claim forfeiture on your proposal, if submitted.

Signed: _____

I DO meet specifications

Signed: _____

I DO NOT meet specifications as listed in this bid; exceptions are in the space provided.

Failure to submit this form with your RFP response may result in your Proposal being rejected as unresponsive.

Note: This attachment may be duplicated, as needed



Town of Goffstown, New Hampshire

Request for Proposals

ATTACHMENT F

Specification for on-board computer system (MDT):

- (1) Panasonic CF-30, Core2Duo L7500, 1.66GHz, 1GB, 80GB, 13.3" 1000 Nit XGA Touch, 56K/1Gb NIC, 802.11a/b/g, Emiss Backlit, WRLS Ready, BT, AC, VISTA D-GRADE TO XP SP2
- Ladder/Aerial Install with Computers, Mounts, Radio Modems, Antenna, Wiring Harnesses, Electrical Panel, Shut Down Timer, Fuse Blocks, DC Adapter
- Panasonic Manufactured Vehicle Dock Port Replicator for CF-30 -- USB Hub & Ethernet
- Tilt/Swivel with Slide Assembly
- Quick Adjust 12" Upper Tube Assembly
- DS Type Flat Floor Gusseted High Mount. 18.25" Pole.
- 6 Gang ATM Fuse Block
- 120W Auto Adapter for Panasonic Core Duo CF-19/30/51P/74
- Lind Shut Down Timer Vehicle Battery Protection Unit for Vehicles 12V DC, including Surge, Sag and Reverse Polarity
- Panasonic 3 Year Toughbook Protection Plus, Toughbook & Accidental Damage - Years 1-3

Further details available upon request to include installation vendor information.