



CITY OF TORRINGTON REQUEST FOR BID

BID #FRP-022-022310 RESCUE PUMPER

Date of bid opening: February 23, 2010 Time: 10:00AM Location: Temporary City Hall, 59 Field Street, Torrington

Bid Bond or Certified Check required with bid: 10%

Performance Bond required if awarded bid: 100 %

Submit one (1) original and three (3) copies.

The City of Torrington reserves the right to accept or reject any or all bids or any portion thereof, to waive technicalities, and to award the contract as will best serve the public interest.

Omit State and Federal Taxes.

All prices must be F.O.B.: Destination (Torrington) unless otherwise requested.

Dated in Torrington: 01/22/10

Pennie Zucco _____
Purchasing Agent

ITEM	BASE PRICE
<p>RESCUE PUMPER PER ATTACHED SPECIFICATIONS</p> <p>1) David Clark Series 3800 vehicle intercom system- 4 per. Engine w/pump panel</p> <p>2) Firecom 4 person, 5 position configuration 3010R Intercom system</p> <p>3) Travel expenses for factory preconstruction, mid-construction inspection & final inspection conference for 3 Reps. from the TPD</p>	<p>\$ _____</p> <p>Option 1 _____</p> <p>Option 2 _____</p> <p>Option 3 _____</p>

The Purchasing Agent is authorized to offer City based bidders that exceed the lowest bid by up to 6%, the opportunity to match the lowest bid. A City based bidder within the 6% differential who agrees to accept the amount of the lowest bid will be awarded the bid. When multiple City based bidders agree to accept the amount of the low bid then the City based bidders will be invited to submit a new bid, not to exceed the low bid. The bid will then be awarded to the lowest responsive, responsible bidder.

Bid Submitted By: _____

Name of Company _____
Address _____

Phone _____ Fax _____

Delivery Date _____

E-mail address _____

Comments: _____

Signature

Title

Date _____

Web Page _____

INSTRUCTIONS TO BIDDERS

Sealed bids will be received by the Purchasing Agent, Temporary City Hall, 59 Field Street, Torrington, CT until the time and date specified on the cover sheet and opened thereafter in the Purchasing Department. Bids received later than the time specified will not be accepted. Amendments to or withdrawal of any section of the submitted bid received later than the time & date set for the bid opening will not be considered. Bid proposals must remain in effect for a minimum of 90 days unless otherwise noted elsewhere in the bid specifications.

BID DOCUMENTS: are available over the Internet on the City's web page, under "open bids", www.torringtonct.org. Businesses without Internet Access may contact the Purchasing Department at 860-489-2224 for the bid documents.

BID BONDS: shall be in the amount of 10% of the total bid made out in favor of the City of Torrington and issued by a Surety company acceptable to the City of Torrington must accompany each bid. A certified check, cashier's check, Treasurer's check, or money order in the same amount may be submitted in lieu of the bid bond. Bids submitted without Certified Check or Bid Bond will not be accepted. On-line bid submission requires a bid bond be received at the Purchasing Office prior to the time of bid opening. The City of Torrington will not be held liable for the accrual of interest on any check held by the city in conjunction with this bid. All checks or bid bonds will be refunded to the unsuccessful bidders after award of the bid by the City Council. The deposit check or Bid Bond of the successful bidder will be held in escrow until such time as the city determines that the bidder has or will meet their obligations as stated by the bid. If the bidder fails or refuses within a reasonable time after due notice that the contract has been awarded to him, to execute the same, an amount representing a loss to the city by reason of such failure shall be retained and paid into the city treasury.

REPLIES: whether bid or no bid, must have the bid number clearly identified on the outside of the envelope. Bidders not marking the envelopes with the Bid number and date/time of opening on the envelope will have no recourse against the City of Torrington or its employees. Such bidders run the risk of the bid being opened prior to the scheduled Bid Opening time. Once opened such bids are public record.

Any alleged oral agreement made by a bidder or contractor with any agency or employee of the City of Torrington will be disregarded.

FREIGHT: Prices quoted shall be net delivery **F.O.B. Torrington, CT.** All bid prices must include prepaid delivery, assembly, and/or installation (ready for operation and/or use) of all equipment and/ or materials to the individual location(s) as designated by the Purchasing Agent. All bid prices are to be submitted on the sheets provided on this bid. Quantities and pricing are to be listed in accordance with these sheets.

QUESTIONS: Request for interpretation of any portion of the bid may be made by telephone to the Purchasing Agent at (860)489-2225. All replies will be given verbally and a copy of any such inquiry and advice (if deemed vital to the bid by the Purchasing Agent) will be made available to each prospective bidder. Bidders should check the web site for addendums/updates 48 hours prior to the bid opening.

In the event of receipt of identical bids as to offerings, delivery, service, content, price, etc., the bid will be awarded in accordance with the information contained in the bid document, based on first received as to date and time of receipt of the bid.

NON-COLLUSION STATEMENTS: In order for bids to be considered, a non-collusive statement must be submitted with the bid. A sample non-collusive bid statement is attached. Bidders may elect to submit their own notarized non-collusion statement.

CONDITIONAL, QUALIFIED OR NON-RESPONSIVE BIDS/PROPOSALS: All bids/proposals shall be submitted in the form and manner as indicated by the bid documents and bid forms. Any proposal which is not submitted in the form and manner indicated by the bid documents or which contains information, statements, conditions, or qualifications which place conditions or qualifications on the proposal submittal for purposes of making an award, or which alter any proposal terms, conditions, specifications, or forms, which has not been previously approved by written addendum from the Purchasing Agent, or which does not meet legal requirements, shall be declared as a qualified, conditional, or non-responsive proposal and shall be rejected without further consideration. Any proposal response that does not fully respond to and comply with all detailed specifications or requests for information including execution of proposal forms, may be declared "non-responsive" and recommended for rejection. The City of Torrington shall not be responsible for any errors or omissions of the Offeror.

TAXES: Omit all State and Federal taxes from the bid. The City of Torrington is exempt from the payment of taxes imposed by Federal government and/or the State of Connecticut.

OWNERSHIP OF DOCUMENTS: All documents, including drawings, plans, specifications, videotapes, or other documents or maps prepared by a contractor pursuant to any agreement arising from this bid shall become the property of the City of Torrington upon completion of the project or any termination of the project prior to the completion of the project.

LEGALITY: All bid offers for commodities, work, materials, or equipment hereunder shall comply in every respect with the laws, specifications and requirements of the State of Connecticut and the Federal government. Contractor will comply with the provisions of the Connecticut Fair Employment Practices Law.

LANGUAGE DISPUTES: Any disputes over the interpretation and/or meaning of any individual terms, conditions, and/or language within this Request for Bid/Proposal document shall be resolved by and at the sole discretion of the City Purchasing Agent in a manner that is in the best interest of, and best advantage to, the City of Torrington, provided any such interpretation shall be reasonable. In the event that an individual term, condition, and/or language/wording is determined at any time, including after award, by the City Purchasing Agent to be "not applicable at all" to his contract, then the term, condition, and/or language/wording may be disregarded, even though an addendum is not issued. However, if the Purchasing Agent determines that the term, condition, and/or language/wording "is applicable in part", then the term, condition, and/or language/wording will apply to the degree applicable, even though an addendum is not issued.

RESPONSIBILITY: The Contractor shall save the City of Torrington, its agents or employees, harmless from liability of any kind for all claims of labor payments and materials furnished for this work, and for use of any copyrighted or uncopyrighted composition, secret process patented or unpatented invention, article or application furnished or used in the performance of the contract of which the Contractor is not the patentee, assignee, or licensee. The successful bidder agrees to indemnify and hold harmless the City of Torrington, its agents and employees from any and all liability arising out of the successful bidders' operations, functions and/or supplied items.

The successful bidder, vendor, and/or contractor must protect all property of the City of Torrington (i.e. all floors, furniture, grass, land, etc.) from injury or other damage. Any damage so caused must be repaired by contractor/vendor at his/her own expense. At the completion of work, the vendor and/or contractor must remove from the premises all surplus materials and all debris created by same. The premises must be left in a broom-clean and finished condition acceptable to the owner or its agents. Successful bidder will furnish adequate protection from damage for

all work and to repair damage of any kind; for which he or his workers are responsible, to the premises or equipment to his own work or to the work of other contractors.

DEFAULT: It shall be understood that a bidder supplying equipment and/or supplies will be considered to be in default if/when they have not delivered the item(s) within the time constraints listed in this document or subsequent purchase orders and/or contract. Bidders providing a service and/or construction will be considered to be in default if/when they have failed to meet the completion date set forth in this document or its subsequent contract and/ or purchase orders and/ or they have ceased work on the project for a period of fifteen (15) working days, cumulative or consecutive.

TRADE NAME REFERENCES: Any and all references to trade names, types, styles, model numbers, stock numbers or catalogs are intended to be descriptive only and not restrictive. The intention is to indicate to bidders the type and quality of the articles and or materials that will be satisfactory. When reviewing the information, it is the responsibility of the prospective bidder to inform the City of Torrington of any discrepancy that is found (i.e. number listed does not fit item description) Bids received on other makes or models with reference to other catalogs will be considered. The bidder is to clearly state in his bid exactly what he intends to furnish and to furnish with his bid a cut or illustration or other descriptive matter that will clearly indicate and give specification as to the product he/she proposes to furnish. Where a bid is offered on an item other than the trade standard used in the specification the item should be identified on the bid form by entering the MAKE, TRADE NAME AND MODEL NUMBER. It is understood that any substitutes and/or alternates that might be offered are guaranteed by the bidder to be of equal or better quality than is reference in the bid. The item(s) must be equivalent as to function, basic design, type and quality of material, method of construction and any required dimensions. It shall be further understood that during original as well as subsequent shipments spot checks will be performed to insure that the items received are in fact the items offered in the bid. When received, should items/materials prove to be different from what was bid in any way, the bidder agrees to the return of the items and agrees to supply correct items (per bid specifications) at the bidders expense. In the event this return action is required, it is understood the bidder may be subject to removal from the city's approved bidder's list. Bidders are cautioned that surplus, seconds, factory rejects, floor samples, close outs or distressed items are not acceptable and shipments of substitutions, defective or shop-worn equipment will be returned for a full refund at the vendor's expense.

QUANTITY: The quantities and/or materials listed in the specifications/bid sheets may be increased or decreased by the City of Torrington or its designated representative based on actual need at the time the purchase orders are placed.

QUALITY: The City of Torrington reserves the right to reject any proposal in whole or in part offering equipment and/or materials and/or services that in its or its agents opinion does not meet the quality standards desired. Such decision is final and not subject to further recourse by the bidder.

SAMPLES: forwarded by the bidder will be returned to the bidder at his request and expense. Requests for return of samples must be submitted in writing at the time the sample is given to the City of Torrington or its representative. Samples not returned to the bidder will be disposed of at the discretion of the City of Torrington or its designated representative. Large pieces of equipment submitted for evaluation and inspection are to be picked up by the bidder within 30 days of the bid opening date. Items not picked up within 30 days will be disposed of by the City of Torrington or its designated agent.

AWARD: It is the intent to award this bid in its entirety to one bidder, however, the City reserves the right to award the bid line item by line item if it is deemed in its best interest to do so. In addition, bidders are advised that should budgetary constraints dictate, part, and/or all the items in this bid may be rejected. This decision shall be considered final and not subject to recourse by the bidder.

In determining the lowest or highest responsible bidder, the City reserves the right to consider, in addition to price, the compatibility, quality, cost of maintenance and availability of parts, experience and/or past performance of the bidder, sufficiency of the financial resources of the bidder as relates to the offerings as well as the ability of the bidder to provide future maintenance and service.

Documents previously submitted to the city of Torrington will not be considered as satisfying submission requirements for this bid.

No bidder can claim any contract rights by virtue of bidding alone. Awarding of the contract means actual written notice by letter and a properly executed purchase order to the bidder or bidders to whom the bid has been awarded.

BONDS:

Performance Bond: The Contractor, when awarded the Bid, must submit within 10 days of the bid award, and before beginning the work or signing a contract, a Performance Bond amounting to one hundred percent (100%) of the total amount of the bid. Said performance bond must be in favor of the City of Torrington and executed by a surety company authorized to do business in the State of Connecticut. The City of Torrington reserves the right to retain the Bid Bond or Certified Check on bids below \$25,000.00 as a Performance Bond. On bids of \$25,000.00 or more the Performance Bond may be furnished in the following manner: Performance Bond, Surety Bond, Certified Check, Bank Check, Savings Account in both the City & Vendor's name or Letter of Credit

Maintenance Bond: The contractor, upon signing a contract and before beginning the work, must submit to the Purchasing Agent a Maintenance Bond to guarantee that if defects in either labor or materials becomes evident within one year after completion and acceptance of work will be fixed at no cost to the City of Torrington. The maintenance bond may be included as a portion of the Performance bond or as a separate bond. If it is issued as a separate bond said maintenance bond must be in favor of the City of Torrington and issued by a surety company licensed and authorized to do business in the State of Connecticut.

Labor and Material Bonds: Per Section 49-41 of the Conn General Statutes, on Public Works project where the estimate is in excess of \$25,000.00, a labor (payment) and material bond must be furnished to the City. Said bonds must be filed with the Purchasing Agent prior to the commencement of work.

Bonds: Per Section 49-41 of the Conn General Statutes, on Public Works project where the estimate is in excess of \$25,000.00, a labor (payment) and material bond must be furnished to the City. Said bonds must be filed with the Purchasing Agent prior to the commencement of work.

Consent for Release of Final Payment: AIA Document G707 & G706, or equivalent, must be signed and returned by the Surety Company before final payment will be released to the contractor.

INSURANCE:

Certificate of Insurance: All insurers must have an AM Best rating of A-V11 or better and admitted to do business in the State of Connecticut. All insurance policies must include a Waiver of Subrogation whereby the insured waives its right to subrogated against the City,

its subsidiaries, employees, volunteers, directors and officers. Proof of proper insurance coverage, Workers Compensation Insurance, Liability and Property damage, and Vehicle Insurance shall be filed with the City of Torrington Purchasing Agent within 10 days after the award of the bid. The Certificate of Insurance must name the City of Torrington, 140 Main St., Torrington, CT, its subsidiaries, employees, volunteers, directors & officers as the additional insured and filed with the Purchasing Agent prior to commencement of work. Renewal Certificates of Insurance must be mailed to the Purchasing Agent 10 days prior to the expiration of the required coverage.

Workman's Compensation Insurance: The Contractor shall take out and maintain during the life of the contract adequate Workman's compensation Insurance for all the employees employed on said work. In case any class of employees or subcontractors is engaged in hazardous work under the contract at the site of the work is not protected under the Workman's Compensation statute, the contractor shall provide Workman's Compensation Insurance for the protection of employees not otherwise protected.

Liability Insurance: The Contractor shall take out and maintain for the life of the contract, adequate public liability insurance insuring against liability to persons not employed by him in an amount of not less than \$1,000,000.00 for injuries, wrongful death to any one person and subject to the limit for each person in an amount of not less than \$2,000,000.00 on account of one accident and property damage insurance in an amount of not less than \$1,000,000.00.

Vehicle Insurance: The Contractor shall take out and maintain for the life of the contract, adequate automotive/truck or other vehicle insurance with minimum coverages of \$1,000,000.00 each for both liability and under insured and uninsured motorist as well as any other coverages required by the State of Connecticut or requested by an official of the City of Torrington as relates to the contract.

Additional Security: The City of Torrington reserves the right to require successful bidders to enter into and such security arrangements as are deemed necessary to protect the City of Torrington, its property and goods.

PERMITS: The successful bidder agrees to obtain all work/building permits as might be required. The cost of obtaining such permits is the responsibility of the bidder. The City of Torrington reserves the right to waive local permit fees. In addition, it shall be understood that where property lines are to be considered, bidders are to verify said lines and measurements with proper City Officials prior to commencement of work.

It is to be understood that any/all specifications and/or plans or drawings contained in or developed as a result of the bid process are and shall be presented subject to the approval of the City of Torrington planning, zoning and building officials and that awards made prior to said approval are subject to cancellation.

PREVAILING WAGE: When the State of Connecticut Prevailing Wage Rate is applicable to the bid, the successful bidder must submit a Certified Payroll Record prior to any request and/or invoice for payment.

SAFETY:

Machine and/or Equipment Hazard Assessment and Safety Training: Upon delivery of machines and/or equipment, suppliers are required to provide to the end-user employees, at no additional charge, a training session which will emphasize hazard awareness and assessment and the safe use of such machinery/equipment.

Occupational Safety and Health Act of 1970: Seller shall warrant that the machinery, equipment or other materials covered hereby shall upon delivery to the City of Torrington, be in compliance with the standards required by said Act and any updates as pertain to or reference said Act as well as the standards required by comparable State and local laws, if any, for such machinery, equipment or other materials in effect at the time of delivery.

Machines and/or Equipment Lockout/Tagout: In an effort to comply with OSHA's final rule on the control of hazardous energy sources, vendors must warrant that any and all machines and/or equipment as is covered under this bid will be supplied and/or installed equipped with lockout/tagout devices as prescribed by OSHA.

Toxic Substance Control Act (PL94-469): Seller warrants that each and every chemical substance constituting or contained in the products sold or otherwise transferred to the City of Torrington under this bid and subsequent purchase orders is not on the list of prohibited chemical substances compiled and published by the Administrator of the Environmental Protection Agency pursuant to Act PL94-469 and are otherwise in compliance with said Act.

Hazardous Materials: Any materials required by this bid and subsequent purchase orders that are hazardous under federal, state, or local statute, ordinance, regulation, or agency order will be packaged, labeled, marked and shipped by the seller to comply with all federal, state and local regulations then in effect including but limited to the provisions of the Hazardous Materials Transportation Act and Regulations promulgated thereunder and will further comply with any special requirements and any policies and procedures of the City of Torrington relating to the purchase of hazardous materials as might be noted on subsequent purchase orders or otherwise communicated to seller in writing.

Material Safety Data Sheets: Shall be provided by the Seller upon delivery to the City of Torrington of any goods having constituents listed in the following references - OSHA 1910, ACHIG Current Threshold Values, DOT HazMat Table 49, IARC Carcinogen List, National Toxicology Program Carcinogen List, and/or Radioactive Materials. These Material Safety Data Sheets must be consistent with and include information required by the OSHA Hazard Communication Standard published as 29 CFR 1910.1200, as the same may be amended or supplemented from time to time.

Asbestos: Bidders are advised that asbestos-containing material may be located in the boiler rooms, pipe tunnels, storage areas and various portions of City buildings. Before proceeding on any contractual work on City buildings or their interiors, it is mandatory that bidders familiarize themselves with the asbestos-containing material and that said material be considered as a health hazard and all precautionary measures according to the Ahera Rules & Regulations be observed. It is the bidder's responsibility to notify all employees and/or subcontractors of this notification.

SUBCONTRACTORS: The successful bidder shall not employ any subcontractor to fulfill any of the duties herein specified without express, prior written approval of the City of Torrington or its designated agent.

EEO: The successful bidder shall provide any/all additionally required, affirmative action statements, fair employment plans and non-discrimination programs and statement as might be required by the City of Torrington. In connection with the execution of this bid, subsequent purchase orders and/or contracts, the seller shall not discriminate against any employee or applicant for employment because of age, race, religion, color, sex or national origin. Bidders must comply with all rules & regulations of the Department of Labor with regard to Equal Employment Opportunities as pertains to municipalities.

TERMINATION OF CONTRACT: Any contract entered into by the City and the successful bidder shall provide that the City may terminate the contract upon thirty (30) days notice to the bidder.

The City of Torrington reserves the right to award or reject any or all bids, or any portion thereof, to waive technicalities, and to award the bid and/or contracts to one or more bidders submitting essentially identical proposals and, that in the city's judgment, will best serve the public interest.

The terms and conditions of these "Instructions To Bidders" are made a part this bid.

SAMPLE FORM

Bid # _____

NON-COLLUSION AFFIDAVIT

STATE OF _____ COUNTY OF _____

I, _____, being first duly sworn, deposes and says that:

1. I am _____
of _____, the bidder that has
submitted the attached request for proposal
for _____;
2. I am fully informed respecting the preparation and contents of the attached RFP and of all pertinent
circumstances respecting such bid;
3. Such Bid is genuine and is not a collusive or sham Bid;
4. Neither the Bidder nor any of its officers, partners, owners, agents, representatives, employees or
parties of interest, including this affiant, has in any way colluded, conspired, connived or agreed directly or
indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the
work for which the attached Bid has been submitted nor has it in any manner, directly or indirectly, sought
by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the
price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of
the Bid price or the price of any Bidder, or to secure through any collusion, conspiracy, connivance or
unlawful agreement any advantage against the City of Torrington or any person interested in the proposed
Bid; and
5. The price or prices quoted in the attached Bid are fair and proper and are not tainted by any
collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents,
representatives, owners, employees, or parties in interest, including this affiant.

Signed _____

Title _____

Subscribed and sworn to before this
_____ day of _____, 20____.

Notary Public

My commission expires _____

NOTE: Documents must be signed before and sealed by a Notary Public. Only documents bearing a notary seal will be accepted.

SAMPLE FORM

BID # _____

**CONSENT OF SURETY COMPANY
TO RELEASE FINAL PAYMENT**

- City
- Architect
- Contractor
- Surety
- Other

PROJECT/BID NUMBER :

TO: City of Torrington
 Attn: Purchasing Agent
 140 Main Street
 Torrington, CT 06790

CONTRACTOR: _____

In accordance with the provisions of the Contract between the City of Torrington and the Contractor as indicated above, the (insert name & address of Surety Co.)

SURETY COMPANY on bond of (insert name & address of Contractor) _____

CONTRACTOR, hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety Company of any of its obligations to the CITY OF TORRINGTON as set forth in the Surety _____
Surety Company

 Notary Public

 Authorized Representative's Signature

My commission expires _____
 Company's bond.

 Title

Subscribed and sworn to before this _____
 _____ day of _____, 20__.

NOTE: Documents must be signed before and sealed by a Notary Public. Only documents bearing a notary seal will be accepted.

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Specifications

**Bidder
Complies**

Yes

No

Specifications

Bidder Complies

Yes No

SPECIFICATIONS FOR A RESCUE PUMPER FRP-022-022310 INTENT OF SPECIFICATIONS

PURPOSE: A Rescue Pumper for structural fire fighting, rescue, and EMS service which must comply with all applicable N.F.P.A. Standards,

INSTRUCTIONS: Each proposal should be submitted in duplicate and in sequence with the attached specifications for ease of checking compliance with bidder proposed specifications

ONE Pumper - These specifications are for one (1) heavy duty rescue pumper

It shall be the intent of these specifications to cover the furnishing and delivery of a complete apparatus equipped as hereinafter specified. These specifications cover only the general requirements as to the type of construction and test to which the apparatus shall conform, together with certain details as to finish, equipment and appliances with which the successful bidder shall conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor, who shall be solely responsible for the design and construction of all features. Loose equipment shall be provided only as stated in the following pages.

Bids shall only be considered from companies that have an established reputation in the field of fire apparatus construction and have been in business for a minimum of 20 years. Further, bidder shall maintain dedicated service facilities for the repair and service of products. Evidence of such a facility shall be included in bidder proposal.

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

Each bid shall be accompanied by a set of "Contractor's Specifications" consisting of a detailed description of the apparatus and equipment proposed and to which the apparatus furnished under contract shall conform. These specifications shall indicate size, type, model and make of all component parts and equipment.

Because of the severe service requirements the department will impose on this apparatus specified each bidder shall provide a list of at least ten (10) departments serving a populations of over 50,000 in which similar apparatus utilizing the brand of chassis proposed have been in service over one year. This list shall include contact names and phone numbers.

LONGEVITY As the continuous operation of the apparatus contemplated is of the utmost importance, it is necessary that the successful bidder be in a position to guarantee the furnishing of replacement parts for a period of not less than twenty (20) years. Accordingly, bidders shall indicate the extent of their ability to render prompt service, by furnishing a list of agencies where complete stocks of repair parts are maintained, and can be secured by ordering, by number, from the lists in the parts books required under these specifications, and of the apparatus purchased under these specifications.

PARTS LIST: Two copies of the parts list, including a complete set of Bills of Material for each part or component used in construction of entire vehicle, shall be submitted with delivery of the apparatus. One set shall be given to the Superintendent of Equipment Maintenance and the other to the Torrington Fire Chief. It will be a complete inventory of all parts used in the truck and enable the City to identify replacement parts with their associated part numbers for the lifetime of vehicle.

APPROVAL DRAWINGS Three (3) or more sets of blue prints must accompany bid proposal and be approved by the City of Torrington prior to manufacturing the apparatus. The Purchasing Agent, dealer and manufacturer shall each have a set of approved blue prints. The approved blue print shall then become a part of the total contract. It shall show chassis, lights, horns, sirens, equipment and location of compartments, dimensions and special requests. The prints shall show the front, rear, both sides, top, and interior of the apparatus. The blue print is to be identical to the proposed apparatus.

Specifications

Bidder Complies

Yes No

QUALITY CONTROL The manufacturer shall have in effect a complete and documented quality control program that will ensure complete compliance with the requirements of all applicable standards, preferably an ISO 9000 series certification.

**TORRINGTON FIRE DEPARTMENT
111 WATER ST. , TORRINGTON, CT 06790
7FRP-022-022310 RESCUE PUMPER
BID FORM
(To Be Submitted By All Bidders as Part of Bid Package)**

1. Guarantees and Warranties: Detail the guarantee/ warranty for each of the following:

Chassis:

Body:

Engine:

Transmission:

Paint: (including longevity with respect to peeling, corrosion, color, etc) Submit color chips with bid proposal

Complete apparatus:

2. Location of nearest:

Complete Parts Depot:

Complete Service Facilities:

Qualified Serviceperson:

Apparatus Manufacturer:

3. Loaded vehicle weight _____ lbs.

Axle loading: Front _____ lbs., Rear _____ lbs.

Overall: Length _____ Width _____

Height _____

4. Delivery (# of weeks ARO).....

5. 3 sets of Blueprints as specified

Specifications

Bidder Complies

Yes No

6. Meets all NFPA requirements
(list exceptions).....

7. Cab and Construction materials

8. Body Construction and material

9. Engine Manufacturer, Horsepower and size

10. Transmission manufacturer and model

11. Front axle weight

12. Rear axle weight...

13. Meets all DOT Requirements

14. Similar equipment has been supplied to the following fire organizations:

Contact name & phone	Location	Year Delivered
.....
.....
.....
.....

15. **Attachments: (to be attached by bidder to Bid Package)**

Guarantee.....

List of Exceptions to Specifications.....

16. Payment Schedule: 10% upon contract signing, 25% upon chassis completion, 25% at final on-site inspection visit, 40% upon successful final inspection and acceptance.

The City reserves the right to reject any or all bids, any portion therefore, to waive technicalities and to award the bid as the City deems is in its best interest.

Signature _____

Date _____

Typed Name _____

Specifications

Bidder Complies

Yes No

Title _____

Company _____

Address _____

Telephone _____

Fax _____

E-mail _____

THESE SPECIFICATIONS ARE MINIMUM All specifications herein contained are considered as minimum. Samples of materials to be used in apparatus construction may be required.

NFPA ET AL REQUIREMENTS Bidder's proposed specifications and the delivered apparatus, including all of its equipment, must meet all minimum requirements of N.F.P.A. Standards, including Nos. 1901 and 1911 Underwriters Laboratories Inc., State Inspection-Insurance Board, and all applicable State and Federal Department of Transportation vehicle regulations which are in effect on the date the contract is awarded. Compliance with all Special Provisions identified in Section II of these specifications is mandatory.

TESTING the manufacturer will complete full testing of all components relating to apparatus and equipment including Underwriter Laboratories, Inc. testing and certifications. In addition, the vehicle must pass a City of Torrington approved road test to assure performance meets or exceeds specifications. The vehicle will not be accepted unless and until all tests, including those the City of Torrington or its agent may conduct after the vehicle is delivered, are passed successfully.

QUALITY CONTROL The manufacturer shall have in effect a complete and documented quality control program that will ensure complete compliance with the requirements of all applicable standards, preferably an ISO 9000 series certification.

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

Specifications	Bidder Complies	
	Yes	No
<p><u>DELIVERY</u> Apparatus, to insure proper break in of all components while still under warranty, shall be delivered under its own power - rail or truck freight shall not be acceptable. A qualified delivery engineer representing the contractor shall deliver the apparatus and remain for a sufficient length of time to instruct personnel in the proper operation, care and maintenance of the equipment delivered. Bidders shall indicate in their proposals the number of working days for delivery of the completed apparatus, from the date of bid acceptance by the manufacturer.</p> <p><u>INFORMATION REQUIRED</u> The manufacturer shall supply at time of delivery, complete operation and maintenance manuals covering the completed apparatus as delivered. A permanent plate shall be mounted in the driver's compartment which specifies the quantity and type of fluids required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.</p> <p><u>SAFETY VIDEO</u> 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 inspection, chassis operation, pump operation, and maintenance. If a video can not be produced then a qualified representative from the manufacturer shall spend two (2) days with Department and Maintenance personnel to cover the above items.</p> <p><u>PERFORMANCE TESTS AND REQUIREMENTS</u> A road test shall be conducted with the apparatus fully loaded and a continuous run of ten (10) miles or more; shall be made under all driving conditions, during which time the apparatus shall show no loss of power or overheating. The transmission drive shaft or shafts, and rear axles shall run quietly and be free from abnormal vibration or noise throughout the operating range of the apparatus. Vehicle shall adhere to the following parameters:</p> <p style="margin-left: 40px;">A) The apparatus, when fully equipped and loaded, shall have not less than 25% nor more than 50% of the weight on the front axle, and not less than 50% nor more than 75% on the rear axle.</p> <p style="margin-left: 40px;">B) The apparatus shall be capable of accelerating to 35 mph from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed rpm of the engine.</p> <p style="margin-left: 40px;">C) The service brakes shall be capable of stopping a fully loaded vehicle in 35 feet at 20 mph on a level concrete highway. The air brake system shall conform to Federal Motor Vehicle Safety Standards (FMVSS) 121.</p> <p style="margin-left: 40px;">D) The apparatus, fully loaded, shall be capable of obtaining a speed of 60 mph on a level concrete highway with the engine not exceeding its governed rpm (full load).</p> <p><u>FAILURE TO MEET TEST</u> In the event the apparatus fails to meet the test requirements of these specifications on the first trial, second trials may be made at the option of the bidder within 30 days of the date of the first trial. Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection. Failure to comply with changes to conform to any clause of the specifications, within 30 days after notice is given to the bidder of such changes, shall also be cause for rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the purchaser or its use by the purchaser during the above-specified period with the permission of the bidder shall not constitute acceptance.</p> <p><u>LIABILITY</u></p>		

Specifications	Bidder Complies	
	Yes	No
<p>The successful bidder shall defend any and all suits and assume all liability for the use of any patented process including any device or article forming a part of the apparatus or any appliance furnished under the contract.</p> <p><u>SPECIFICATION BID REQUIREMENTS</u> Bidders shall also indicate in the "yes/no" column if their bid complies on each item (PARAGRAPH) specified. Exceptions shall be allowed if they are equal to or superior to that specified and provided they are listed and fully explained on a separate page.</p> <p>Proposals taking total exception to specifications shall not be acceptable.</p> <p>Also, bidders shall submit a detailed proposal. A letter only, even though written on a company letterhead, shall not be sufficient. Bid proposals shall be submitted in the same sequence as specifications for ease of evaluation, comparison and checking of compliance. An exception to these requirements shall not be tolerated.</p> <p><u>CONTRACT AWARD</u> Contract will be award to the most "responsive, responsible" bidder, provided that the bid is in the best interest of the City of Torrington.</p> <p>When analyzing the bid proposals, and in recommending a successful bidder, superior design, workmanship, materials, operating costs, location of factory, past experience, and compliance to specifications will be taken into consideration.</p> <p>The City of Torrington reserves the right to waive any formality in the bids received once such waiver is in the best interest of the City and, also, to accept any item in the Bid found to be of superior quality or otherwise preferred by the City of Torrington. The City of Torrington reserves the right to reject any and all bids or to accept such proposal as is in the best interest of the city.</p> <p><u>EXCEPTIONS</u> All exceptions shall be stated no matter how seemingly minor. Any exceptions not taken shall be assumed by the City of Torrington to be included in the proposal, regardless of the cost to the bidder.</p> <p><u>GENERAL CONSTRUCTION</u> The apparatus shall be designed with due consideration to distribution of load between the front and rear axles. Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Association.</p> <p>Certification of slip resistance of all stepping, standing and walking surfaces must be supplied with delivery of the apparatus.</p> <p>A plate that is highly visible to the driver while seated shall be provided. This plate shall show the overall height, length, and gross vehicle weight rating.</p> <p>The manufacturer shall have programs in place for training, proficiency testing and performance for any staff involved with certifications.</p> <p>An official of the company shall designate, in writing, which is qualified to witness and certify test results.</p> <p><u>NFPA COMPLIANCY</u> Apparatus proposed by the bidder shall meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in current edition at time of contract execution.</p>		

Specifications	Bidder Complies	
	Yes	No
<p><u>TOTAL VEHICLE ASSESSMENT CERTIFICATION</u> The apparatus shall be third-party, independent, audit-certified through Underwriters Laboratory (UL) to the current edition of NFPA 1901 standards. The certification includes: all design, production, operational and performance testing of the apparatus. (NO EXCEPTION)</p> <p><u>PUMP TEST</u> The pump shall be tested, approved, and certified by Underwriter's Laboratory at the manufacturer's expense. The test results and the pump manufacturer's certification of hydrostatic test; the engine manufacturer's certified brake horse power curve; and the manufacturer's record of pump construction details shall be forwarded to the Fire Department.</p> <p><u>GENERATOR TEST</u> If the unit has a generator, the generator shall be tested, approved, and certified by Underwriters Laboratories at the manufacturer's expense. The test results shall be provided to the Fire Department at the time of delivery.</p> <p><u>CUSTOMER SERVICE WEBSITE</u> A Customer Service website shall be provided which offers the dealer and customer access to comprehensive information pertaining to the maintenance and service of the apparatus. The website shall consist of the following features:</p> <ul style="list-style-type: none"> - Ability for the dealer to access to truck detail information on the major components of the vehicle, warranty information, available vehicle photographs, vehicle drawings, sales options, applicable vehicle software downloads, etc. - Parts look-up capability for items sourced by the fire apparatus manufacturer - Ability to allow the dealer to submit electronically a parts order and warranty claims - Maintain communication between the dealer and the customer on the status of orders, claims, and phone contacts - Access to all currently published Operation and Maintenance Manuals, Service Publications, Service Bulletins and Work Instructions - Ability to allow the dealer access to applicable on-line diagnostic software - Access to upcoming training classes offered by the fire apparatus manufacturer - Access to interactive electronic learning modules, covering the operation of major vehicle components - Access to training manuals used in the fire apparatus manufacturers training classes - Access to Customer Service Articles, Corporate News, Quarterly Newsletters, and Key Contacts within the Customer Service Department <p>The City of Torrington will also entertain bids for a stock unit if it meets the specifications provided within this document. The City will have the right to accept a specific vehicle manufacturer if it determines it would be in the best interest of the City of Torrington and the Fire Department collectively.</p>		

Specifications	Bidder Complies	
	Yes	No
<p>SECTION II</p> <p>WARRANTIES/SERVICE MANUALS</p> <p>Each piece of new fire or rescue apparatus shall be warranted to be free from defects in materials or workmanship under normal use and service. Each manufacturer shall supply, as a part of their bid package, a copy of the warranty or warranties that they propose to provide, and in no case shall it be less than two (2) year on the entire apparatus.</p> <p><u>FRAME RAIL WARRANTY</u> The frame rails shall be guaranteed for the life of the vehicle, which is estimated to be 50 years, against defects in design, material, or workmanship, excluding accident or abuse. A copy of the fire apparatus manufacturer's warranty shall be included with the bid.</p> <p><u>WARRANTY, FRONT NON DRIVE AXLE</u> The non drive axle system shall have a three (3) year parts and labor warranty. All steering linkages, pumps etc., are covered under the standard chassis warranty (exception steer gears - see Steering for warranty).</p> <p><u>REAR AXLE WARRANTY</u> The rear axle shall have an unlimited mile parts and labor warranty</p> <p><u>ANTI-LOCK BRAKE SYSTEM WARRANTY</u> The system shall come with a three (3) year or 300,000 mile parts and labor warranty</p> <p><u>ENGINE WARRANTY</u> The engine shall have a five (5) year or 100,000 mile warranty provided by the engine manufacturer. This warranty shall provide the same coverage for the Diesel Particulate Filter "DPF" that is an integral component of the exhaust emissions system. The engine manufacturer shall add a \$100.00 deductible during the extended basic coverage period in years 3, 4, and 5. There shall be no deductible in the first 2 years of warranty.</p> <p><u>ENGINE INSTALLATION CERTIFICATION</u> The fire apparatus manufacturer shall provide, at the time of delivery, a letter from the engine manufacturer stating they approve of the engine installation in the bidder's chassis. The approval of the engine installation shall be at full horsepower rating in a continuous duty application under all operating conditions, including road and pump. No type of automatic horsepower reduction feature shall be allowed.</p> <p>There shall be no exception to any portion of the engine installation certification. Nonconformance shall lead to immediate rejection of bid.</p> <p><u>TRANSMISSION WARRANTY</u> The transmission shall have a five (5) year/unlimited mileage warranty covering 100% parts and labor. The warranty is to be provided by Allison Transmission and not the apparatus builder.</p> <p><u>STEERING WARRANTY</u> The steering gear shall have a three (3) year parts & labor warranty.</p> <p><u>COMMAND ZONE WARRANTY</u></p>		

Specifications	Bidder Complies	
	Yes	No
<p>The Command Zone modules, membrane switches, and display(s) shall be warranted against defective materials or workmanship for a period of five (5) years from the date of delivery to the original purchaser. The warranty shall also include a standard repair time for covered components.</p> <p>A copy of the fire apparatus manufacturer's warranty shall be included with the bid.</p> <p><u>CAB WARRANTY</u> The bidder shall furnish a ten (10) year cab warranty. The warranty shall cover defects in design or workmanship in the cab tubular support and mounting supports and other cab structural components identified in the specifications. A copy of the warranty shall be submitted with the bid. (NO EXCEPTION)</p> <p><u>CAB INTEGRITY CERTIFICATION</u> The fire apparatus manufacturer shall provide a cab crash test certification with this proposal.</p> <p>There shall be no exception to any portion of the cab integrity certification. Nonconformance shall lead to immediate rejection of bid.</p> <p><u>BODY WARRANTY</u> A copy of the fire apparatus manufacturer's warranty shall be included with the bid. The warranty shall state that the body shall be free of structural failures caused by defective design or workmanship for a warranty period of ten (10) years from the date the new vehicle is first delivered or 100,000 miles, whichever occurs first and that defective parts, under the warranty, shall be repaired or replaced without charge to the City of Torrington.</p> <p><u>WATER TANK WARRANTY</u> The tank shall have a lifetime warranty.</p> <p>If the tank manufacturer determines that the tank problem has rendered the truck out-of-service, the tank manufacturer shall dispatch a service technician WITHIN 48 HOURS (2 DAYS) to repair the tank (This time period is for the United States and Canada only)</p> <p><u>PUMP WARRANTY</u> There shall be a pump warranty to include parts and labor for a period of two (2) years.</p> <p><u>WATER TANK SIZE-NFPA CERTIFICATION</u> The manufacturer shall certify the capacity of the water tank prior to the delivery of the apparatus. This capacity shall be recorded on the manufacturer's record of construction and the certification shall be provided when the apparatus is delivered.</p> <p><u>POLY TANK WARRANTY-LIFETIME</u> The poly tank manufacturer warrants each tank to be free from manufacturing defects in material and workmanship for the service life of the original vehicle (vehicle must be actively used in fire suppression). The warrant is transferable, with written approval of the manufacturer. Each tank is inspected and tested for leaks prior to leaving the manufacturing facility. The tank will be installed in the vehicle in accordance to the manufacture's guidelines.</p> <p>There are no warranties, expressed or implied, which extend beyond the description of the face hereof. There is no expressed or implied warranty of merchantability or a warranty of fitness for a particular purpose. Additional, this warranty is in lieu of all other obligations or liabilities on the part of the Manufacturer.</p> <p><u>PUMP PLUMBING WARRANTY</u> The stainless steel plumbing components and ancillary brass fittings used in the construction of the water/foam plumbing system shall be warranted for a period of ten (10) years or 100,000 miles. This</p>		

Specifications	Bidder Complies	
	Yes	No
<p>covers structural failures caused by defective design or workmanship, or perforation caused by corrosion, provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original purchaser for a period of ten years from the date of delivery. A copy of the warranty shall be submitted with the bid. (NO EXCEPTION)</p> <p><u>WARRANTY - PAINT AND CORROSION</u> The cab and body exterior paint finish shall be warranted against blistering, peeling, corrosion, lack of adhesion or any other manufacturing or material defect for a period of ten (10) years.</p> <p>The cab and body shall also be warranted against corrosion perforation for a period of ten (10) years.</p> <p>A copy of the manufacturer's warranty shall be included with the bid.</p> <p><u>MANUALS</u> There shall be two copies of pump manuals provided to the department. One (1) shall be provided on a disc for the Equipment Maintenance Department</p> <p><u>MANUAL, FIRE APPARATUS PARTS</u> Two (2) custom parts manuals for the complete fire apparatus shall be provided in hard copy with the completed unit. One (1) of those manuals shall be provided on disc for the Equipment Maintenance Department</p> <p>The manual shall contain the following:</p> <ul style="list-style-type: none"> - Job number - Part numbers with full descriptions - Table of contents - Parts section sorted in functional groups reflecting a major system, component, or assembly - Parts section sorted in Alphabetical order - Instructions on how to locate a part <p>The manual shall be specifically written for the chassis and body model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.</p> <p><u>SERVICE PARTS INTERNET SITE</u> The service parts information included in this manual is also available on the factory website. The website offers additional functions and features not contained in this manual, such as digital photographs and line drawings of select items. The website also features electronic search tools to assist in locating parts quickly.</p> <p><u>MANUALS, CHASSIS SERVICE</u> Two (2) chassis service manuals containing parts and service information on major components shall be provided with the completed unit. One (1) manual shall be on disc for the Equipment Maintenance Department</p> <p>The manuals shall contain the following sections:</p> <ul style="list-style-type: none"> - Job number - Table of contents - Troubleshooting - Front Axle/Suspension - Brakes - Engine - Tires 		

Specifications	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> - Wheels - Cab - Electrical, DC - Air Systems - Plumbing - Appendix <p>The manual shall be specifically written for the chassis model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.</p> <p><u>MANUALS, CHASSIS OPERATION</u> Two (2) chassis operation manuals shall be provided. One (1) manual shall be on disc for the Equipment Maintenance Department</p> <p><u>ELECTRICAL WIRING DIAGRAMS</u> Two (2) electrical wiring diagrams, prepared for the model of chassis and body, shall be provided. One (1) manual shall be on disc for the Equipment Maintenance Department.</p> <p><u>CERTIFICATE OF ORIGIN/VEHICLE TITLE:</u> On delivery the vehicle will come with the certificate of origin and or title to the vehicle</p> <p><u>COMPLETE SET OF MANUALS:</u> There shall be two (2) complete sets of manuals for the entire vehicle one (1) for the Equipment Maintenance Department and one (1) for the Fire Department</p> <p>All other warranties, as outlined in these specifications shall be provided in writing as a part of the bid package.</p> <p>Failure to provide the warranties as outlined throughout these specifications shall be cause for rejection of the bid package.</p>		

Specifications	Bidder Complies	
	Yes	No
<p>SECTION III CAB & CHASSIS</p> <p><u>CHASSIS</u> The Chassis shall be a flat floor, MFD (medium four door) 10" raised roof aluminum tilt cab or equivalent. 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.</p> <p><u>SEATING CAPACITY</u> The seating capacity in the cab shall be a minimum four (4).</p> <p><u>WHEELBASE</u> The wheelbase of the vehicle shall be no greater than 195" inches.</p> <p><u>VEHICLE HEIGHT</u> The total height of the vehicle shall be no greater than 132" inches</p> <p><u>GVW RATING</u> The gross vehicle weight rating shall be adequate to carry the fully equipped apparatus including full water and other tanks, the specified hose load, unequipped personnel weight, ground ladders, and miscellaneous equipment.</p> <p>A permanent placard shall be affixed and visible to the driver, which states the maximum number of personnel the vehicle is designed to carry.</p> <p>The height of the fully loaded vehicle's center of gravity shall not exceed the chassis manufacturer's maximum limit.</p> <p><u>MASTER DISCONNECT SWITCH</u> As per NFPA 1901, a switch will be provided between the starter solenoid and the remainder of the apparatus electrical loads.</p> <p><u>FRAME</u> The chassis frame shall be built with two (2) steel channels bolted to five (5) cross members or more, depending on other options of the apparatus. The side rails shall have a 13.38" tall web over the front and mid sections of the chassis, with a continuous smooth taper to 10.75" over the rear axle. Each rail shall have a section modulus of 25.992 cubic inches and a resisting bending moment (rbm) of 3,119,040 inch-pounds over the critical regions of the frame assembly, with a section modulus of 18.96 cubic inches with an rbm of 2,275,200 inch-pounds over the rear axle. The frame rails shall be constructed of 120,000 psi yield strength heat-treated 10.866 x 3.622 x .433 minimum</p> <p><u>CHASSIS FRAME AND BODY INTERFACE</u> The surface of the chassis rails shall be isolated from the apparatus body sub-structure by an elastomeric isolator.</p> <p><u>FRONT NON DRIVE AXLE</u> The front axle shall have a rating of 20,000 lbs</p>		

Specifications	Bidder Complies	
	Yes	No
<p><u>FRONT AXLE CRAMP ANGLE</u> The cramp angles for the vehicle will be listed with the size tires used for comparison</p> <p><u>OIL SEALS</u> Oil seals with viewing window shall be provided on the front axle.</p> <p><u>VEHICLE LUBRICATION SYSTEM</u> The vehicle shall be equipped with a BEKA-MAX lube system this system can be supplied and installed by Lubrication Technologies, Inc. 168 Windsor Street West Springfield MA. 01089-3530 phone # 413-788-5823. All parties involved with the manufacturing of the vehicle will work with Lubrication Technologies to assure the lubrication needs and the number of grease points for their equipment are met. (NO EXCEPTIONS)</p> <p><u>REAR AXLE</u> The rear axle shall have rating of 31,000 lbs single reduction differential with driver controlled differential lock.</p> <p>The gear ratio shall be: (set so the vehicle will operate at peak performance to the terrain it will be operating in). It will be discussed with the Fleet Manager prior to the building of the truck and also in the pre-construction meeting.</p> <p><u>OIL SEALS</u> Oil seals shall be provided on the rear axle.</p> <p><u>ANTILOCK BRAKE SYSTEM</u> The vehicle shall be equipped with an anti-lock braking system. This system shall eliminate the lockup of any wheel thus helping prevent the apparatus from skidding out of control.</p> <p><u>BRAKES</u> The brake system shall include a dual air brake system for straight truck applications. The front brakes shall be 16.5" x 6" S-Cam w/24 sq. in. brake chambers. The rear brakes shall be 16.5" x 7" S-Cam cast shoes with 36/36 MGM spring actuated parking brake chambers. There shall be dust shields for both front and rear brakes. There shall be automatic slack adjusters on both front and rear brakes. There shall be a drain valve manual w/pull chain for air tank</p> <p><u>AIR COMPRESSOR, BRAKE SYSTEM</u> The air compressor shall be a Cummins or Webco with 18.7 cubic feet per minute output</p> <p><u>AIR DRYER, BRAKE SYSTEM</u> The air dryer shall be a Meritor- Webco System Saver 1200</p> <p><u>ENGINE BRAKE</u> A Jacobs Engine Brake is to be installed with the controls located on the instrument panel within easy reach of the driver.</p> <p>The driver shall be able to turn the engine brake system on/off and have a high and low setting.</p> <p>The engine brake shall be installed in such a manner that when the engine brake is slowing the vehicle the brake lights are activated.</p> <p>The ABS system shall automatically disengage the auxiliary braking device, when required.</p> <p><u>AIR INLET</u></p>		

Specifications	Bidder Complies	
	Yes	No
<p>One (1) air inlet with male coupling shall be provided. It shall allow station air to be supplied to the apparatus brake system through a shoreline hose. The inlet shall be located in the driver side cab step area. A check valve shall be provided to prevent reverse flow of air. The inlet shall discharge into the "wet" tank of the brake system. A mating female coupling shall also be provided with the loose equipment.</p> <p><u>ENGINE</u> Motor engine International Diesel</p> <ul style="list-style-type: none"> - Model: MaxxForce 11 - Number of Cylinders: Inline 6-cylinder - Bore and Stroke: 4.72 in. & 6.10 in. (120mm & 155 mm) - Displacement: 10.5 L (641 cu in.) - Maximum Horsepower: 390 HP - Torque range; 1,250-1,400 lb.-ft. @ 1,000-to 1,200 rpm. - Compression Ratio: 17:1 <p>Standard equipment on the engine shall include the following:</p> <ul style="list-style-type: none"> - Air Cleaner: Farr or Donaldson - Fuel Filter: Single, with check valve - Coolant Filter: Spin-on with shut off valves on the supply and return line (precharged with coolant inhibitor) - Governor: - Injectors: - Lube Oil Cooler - Lube Oil Filter: - Starting Motor: 12-volt - Turbocharger - Air to Air Aftercooled -Cooled Exhaust Gas Recirculation <p>The City of Torrington is requesting that the chassis be powered by an International Diesel engine but will entertain the following option:</p> <p style="text-align: center;">-</p>		

Specifications	Bidder Complies	
	Yes	No
<p><u>Pre-2010 Engine-</u> the City of Torrington will accept a vehicle if a bidder can supply the apparatus with and equivalent engine that was built pre 2010 standard.</p> <p><u>CONTROLS AND INDICATOR LIGHTS</u> The following amber indicator lights shall be located on the driver's side of the cab to denote engine information: - Diesel Particulate Filter (DPF) - High Exhaust Temperature (HET)</p> <p>A switch to initiate the diesel particulate filter regeneration cycle shall be located on the driver's side instrument panel.</p> <p><u>ENGINE AIR INTAKE</u> The air intake with an ember separator shall be mounted high on the passenger side of the cab, to the front of the crew cab door. The ember separator is designed to prevent road dirt and recirculating hot air from entering the engine.</p> <p>The ember separator shall be easily accessible through a hinged stainless steel grille, with one (1) flush quarter turn latch.</p> <p><u>EXHAUST SYSTEM</u> The exhaust system shall be stainless steel from the turbo to the inlet of the diesel particulate filter and shall be 5.00" in diameter. The exhaust system shall include a diesel particulate filter and a diesel oxidation catalyst to meet current EPA standards. The exhaust shall terminate horizontally ahead of the passenger side rear wheels. A tailpipe diffuser shall be provided to reduce the temperature of the exhaust as it exits. An insulation wrap shall be provided on the exhaust pipe between the turbo and DPF inlet to minimize the transfer of heat to the cab. Heat deflector shields shall be provided to isolate chassis and body components from the heat of the tailpipe diffuser.</p> <p><u>EXHAUST MODIFICATION</u> The exhaust pipe shall be brought out from under the body at a 90 degree angle from the truck. The tail pipe shall extend a minimum of 2.00" past the body, adaptable for the Plymovent system. The diameter of the pipe shall be 7.00". There shall be a clearance of 4.00" completely around the pipe once past the side of the body. A stop shall be provided on the tail pipe that shall prevent the nozzle from sliding too far on.</p> <p><u>HIGH IDLE</u> A high idle switch shall be provided, inside the cab, on the instrument panel, that shall automatically maintain a preset engine rpm. A switch shall be installed, at the cab instrument panel, for activation/deactivation.</p> <p>The high idle shall be operational only when the parking brake is on and the truck transmission is in neutral. A green indicator light shall be provided adjacent to the switch. The light shall illuminate when the above conditions are met. The light shall be labeled "OK to Engage High Idle".</p> <p><u>COOLANT LINES</u> Gates, or Goodyear, rubber hose shall be used for all engine coolant lines installed by the chassis manufacturer.</p> <p>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.</p>		

Specifications	Bidder Complies	
	Yes	No
<p><u>RADIATOR</u> 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. It shall have a built-in low coolant sight glass and an electronically controlled low coolant display mounted on the instrument panel. An integral surge and deaeration tank shall be provided to optimize the cooling system for all operating conditions.</p> <p>The cooling system shall be designed to maintain a minimum pressure of nine (9) psi. 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.</p> <p>Radiator shall be of the serpentine design and bonded together by the patented "beta-weld" process for increased strength, longer road life and solder-bloom corrosion protection. 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.</p> <p><u>FUEL TANK</u> Top draw: 50 U.S. gal non polished aluminum. Fuels lines nylon with O-ring snap-on quick- connect fittings on both ends</p> <p><u>FUEL COOLER</u> An air to fuel cooler shall be installed, in the engine fuel return line.</p> <p><u>TRANSMISSION</u> An Allison, model 4000EVSP 5 speed w/overdrive with PTO capability, electronic, torque converting, and automatic transmission shall be provided.</p> <p>Two (2) PTO openings shall be located on left side and top of converter housing (positions 8 o'clock and 1 o'clock).</p> <p>A transmission temperature gauge with red light and buzzer shall be installed on the cab instrument panel.</p> <p><u>TRANSMISSION, SHIFTER</u> A T- handle type shifter shall be mounted to right of driver on console. Shift position indicator shall be indirectly lit for after dark operation.</p> <p>The transmission ratio shall be: (set so the vehicle will operate at peak performance to the terrain it will be operating in). It will be discussed with the Fleet Manager prior to the building of the truck and also in the pre-construction meeting.</p> <p><u>TRANSMISSION COOLER</u> A transmission oil cooler shall be provided in the lower tank of the radiator.</p> <p><u>DRIVELINE</u> Drivelines shall be a heavy duty metal tube and be equipped with Spicer 1810 universal joints.</p> <p>The shafts shall be dynamically balanced before installation.</p> <p>A splined slip joint shall be provided in each driveshaft, slip joint shall be coated with Glidecoat or equivalent.</p> <p><u>POWER STEERING</u></p>		

Specifications	Bidder Complies	
	Yes	No
<p>A Sheppard M-100/M-80 Dual power, shall be provided.</p> <p>The steering wheel shall be:</p> <ul style="list-style-type: none"> - 18.00" in diameter - Capable of tilting and telescoping - Four spoke design. <p><u>TIRES</u> Tires of proper size shall be provided preferably manufactured by Goodyear</p> <p><u>LUG NUTCOVERS</u> Chrome plated lug nut covers shall be installed on all lug nuts</p> <p><u>WHEEL CHOCKS</u> There shall be one (1) set of Ziamatic AC-32, aluminum alloy, Quick-Choc wheel blocks, with QCH-32-H horizontal mounting brackets provided. The chocks shall be mounted on the under D3 compartment.</p> <p><u>MUD FLAPS</u> Mud flaps shall be installed behind the front and rear wheels of the apparatus.</p> <p><u>ONSPOT OR EQUIVALENT TIRE CHAINS</u> One (1) set of automatic tire chains shall be installed on the vehicle with all the proper controls and connections.</p> <p><u>CAB</u> The cab shall be a Flat floor, MFD (medium four door), 10" raised roof, aluminum tilt cab designed by the manufacturer of the body.</p> <p>The interior shall come with the Extreme duty interior.</p> <p>The cab roof shall be constructed and reinforced to support the installation of a Command light Knight 2 light tower (for possible future installation)</p> <p>The rear crew area will have seating for two (2) firefighters.</p> <p>Two (2) smoked Lexan sunvisors, 8.75" x 31.00" long, shall be provided. The sunvisors shall be located above the windshield with one (1) mounted on each side of the cab.</p> <p>Two (2) Electric windshield wipers with washer shall be provided that meet FMVSS and SAE requirements.</p> <p>The washer reservoir shall be able to be filled without raising the cab.</p> <p><u>CAB LIFT</u> A hydraulic cab lift system shall be provided consisting of an electric powered hydraulic pump, dual lift cylinders, and necessary hoses and valves.</p> <p>Lift controls shall be on a panel located on the pump panel or front area of the body in a convenient location.</p> <p>Cab shall be locked down by a two (2)-point automatic spring loaded hook mechanism that actuates after the cab has been lowered.</p> <p>The hydraulic cylinders shall be equipped with a velocity fuse that protects the cab from accidentally</p>		

Specifications	Bidder Complies	
	Yes	No
<p>descending when the control is located in the tilt position.</p> <p>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.</p> <p><u>INTERLOCK, CAB LIFT TO PARKING BRAKE</u> 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.</p> <p><u>MIRRORS</u> A Moto Mirror-Plus or equivalent polished mirror, 7.62"x13.50" flat glass and a 6.25" convex glass shall be mounted on each side of the front cab door. Mirrors to be heated and adjustable remotely. There shall no vibration of the mirrors at idle.</p> <p><u>DOOR JAM SCUFFPLATES</u> All cab door jambs shall be furnished with a stainless steel scuffplate, mounted on the striker side of the jam.</p> <p><u>MOLDING (on sides of cab)</u> Chrome molding shall be provided on both sides of cab.</p> <p><u>FENDER CROWNS</u> Stainless steel fender crowns shall be installed at cab wheel openings. The fender crowns shall have a radius outside corner that allows the fender crown to extend beyond the side wall of the front tires and also allow the crew cab doors to open fully.</p> <p><u>BUMPER.</u> A one (1) piece, ten (10) gauge, 304-2B type polished stainless steel bumper, a minimum 10.00" high shall be attached to a bolted modular extension frame constructed of 50,000 psi tensile steel "C" channel mounted directly behind it to provide adequate support strength. The front bumper shall be extended so that it may have a compartment that would hold 150" of 1-3/4" hose and nozzle. Also mounted on the front bumper will be a 500 gpm deck gun that can be manually adjusted (not electrically operated) the water flow shall be controlled at the pump panel. There shall be provisions made to locate the air horns and the Federal Q2b siren in the front bumper. Documentation shall be provided, upon request to show that the options selected have been engineered for fit-up and approval for this bumper. A chart shall be provided to indicate the option locations and shall include, but not be limited to the following options: air horns, mechanical sirens, speakers, lights.</p> <p><u>GRAVEL PAN</u> A gravel pan, constructed of bright aluminum treadplate, shall be furnished between the bumper and cab face. The gravel pan shall be properly supported from the underside to prevent flexing and vibration of the aluminum treadplate.</p> <p><u>LIFT AND TOW MOUNTS WITH TOW EYES</u> Mounted to the frame extension shall be lift and tow mounts. Incorporated in the mounts shall be two (2) painted steel tow eyes. The lift and tow mounts shall be designed and positioned to adapt to certain tow truck lift systems. The tow eyes shall not be used for lifting of the apparatus.</p> <p>The inner and outer edges of the tow eyes shall have a 0.25" radius.</p> <p>The lift and tow mounts with eyes shall be painted the same color as the frame.</p>		

Specifications	Bidder Complies	
	Yes	No
<p><u>CAB INTERIOR</u> There shall be space in front of the officer to mount a MDT so not to block the vision of the driver or officer. Provisions so the proper power supply will be located to power the MDT. The MDT will be supplied by the customer.</p> <p><u>MAP BOX/ METER/TIC</u> A fabricated box shall be provided and mounted within the cab accessible from the right and left front seating positions. The box is designed to hold three ring notebook binders and be able to mount the Departments thermal imaging camera and 4 gas meter to the box.</p> <p><u>CAB INTERIOR UPHOLSTERY</u> The cab interior upholstery shall be dark silver gray.</p> <p><u>INTERIOR PAINT (Cab)</u> The cab interior metal surfaces shall be painted gray.</p> <p><u>GRAB HANDLE</u> A black rubber covered grab handle shall be mounted on the lower portion of the driver's side cab entrance to assist in entering the cab. The grab handle shall be securely mounted to the post area between the door and steering wheel column.</p> <p><u>CAB SEATING</u> A Seats Inc. #911 "scissors-action" air-ride high-back style seat shall be provided in the cab for the driver or equivalent</p> <p>The driver's seat shall be furnished with three (3)-point shoulder type seat belt. The seat belt shall be furnished with automatic retractor. Extension shall be provided with the seat belt so the male end can be easily grasped and the female end easily located while sitting in a normal position.</p> <p>The seat back shall be removable for ease of access to components located behind the driver seat.</p> <p><u>SEAT, OFFICER</u> A Seats Incorporated 911 SCBA seat with high-back shall be provided in the cab for the officer or equivalent. The SCBA cavity shall be adjustable front to rear in 0.50" increments to accommodate different size SCBA bottles.</p> <p>Moving the SCBA cavity shall be accomplished by unbolting, relocating and rebolting in the desired location.</p> <p>The officer seat shall be furnished with three point shoulder type seat belts. The seat belts shall be furnished with automatic retractors. Extensions shall be provided with the seat belts so the male end can be easily grasped and the female end easily located while sitting in a normal position.</p> <p><u>UNDERSEAT COMPARTMENT</u> A compartment shall be provided under the officer's seat.</p> <p>A drop-down door with a chrome plated lift and turn latch shall be provided for access.</p> <p>The compartment shall be constructed of smooth aluminum and painted to match the cab interior.</p> <p><u>SEATING (REAR Facing Crew Cab)</u> Two (2) rear facing, Seats Incorporated 911 SCBA seats or equivalent shall be provided in the rear of the cab. They shall be in the 2 outboard riding positions one behind the driver and one behind the officer. The SCBA cavity in each seat shall be adjustable front to rear in .50" increments to</p>		

Specifications	Bidder Complies	
	Yes	No
<p>accommodate different size SCBA bottles.</p> <p>Moving the SCBA cavity shall be accomplished by unbolting, relocating and rebolting in the desired location.</p> <p>Seats shall be furnished with three (3) point shoulder type seat belts. The seat belts shall be furnished with automatic retractors. Extensions shall be provided with the seat belts so the male end can be easily grasped and the female end easily located while sitting in a normal position.</p> <p><u>SEAT UPHOLSTERY</u> All seat upholstery shall be gray woven with black Imperial 1200 material or equivalent</p> <p><u>AIR BOTTLE HOLDERS</u> All SCBA type seats in the cab shall have a Ziamatic model ULLH SCBA holder bracket. This bracket shall be compliant with the current NFPA 1901 standard and shall include a backplate, two seats, a footplate and the model LLS ("Load & Lock") strap to hold the bottle in the bracket. The bracket seats shall be a "one size fits all" style seat and shall accommodate SCBA cylinders from the high pressure 30-minute to the high pressure 60-minute. Seats shall be adjustable up and down by unbolting, relocating, and rebolting in the desired position.</p> <p><u>AIR BOTTLE MOUNTING BRACKET</u> A total of one (1) 45 degree mounting bracket shall be in the crew cab. Each mounting bracket shall be designed to hold one (1) Ziamatic SCBA holders. The bracket shall be mounted Crew Cab, driver side, bolted to the EMS cabinet..</p> <p><u>EXTINGUISHER BRACKET</u> A bracket to hold a customer supplied pressurized water extinguisher to be installed in officer's side crew area on back wall.</p> <p><u>WATER COOLER BRACKET</u> A bracket manufactured to hold the customer supplied water cooler to be installed in the rear crew area. The location of bracket to be determined at pre construction meeting.</p> <p><u>SET OF IRONS BRACKET</u> A Zico Products model # MB-3PBA Quic bar/axe mounting bracket set with stop to be installed in the rear crew area on the driver's side rear wall, the location to be determined at pre construction meeting</p> <p><u>INDICATOR LIGHT</u> The seat belt not stowed light and alarm shall be designed so a seat must be occupied and the respective seat belt not buckled to activate the alerts. A red indicator light located on the cab gauge panel shall be furnished. The indicator light and alarm shall operate as follows when an occupant is not buckled: Parking brake engaged: The indicator light shall be active (steady) The audible alarm shall be inactive The Seat Belt Screen shall indicate the position(s) of unbelted occupants (manual selection of the Seat Belt Screen is required) Ignition switch on and parking brake disengaged:</p>		

Specifications	Bidder Complies	
	Yes	No
<p>The Indicator Light shall operate as follows: Flash for the first 30 seconds Remain active (not flashing) for the next 60 seconds Continue by flashing quickly for 5 seconds at every 30-second interval until all occupants seat belts are buckled.</p> <p>The Seat Belt Screen shall indicate the seat position(s) of any occupant whose seat belt is not buckled. If a "Do Not Move Truck" condition does not exist, the Seat Belt Screen shall activate automatically.</p> <p>An audible alarm shall chime quickly whenever the indicator light flashes quickly.</p> <p>The alarm shall repeat this process until all occupants are buckled</p> <p>The indicator light and alarm shall deactivate when all occupants seat belts are buckled.</p> <p>There shall be four (4) seats that contain the seat belt not buckled feature.</p> <p><u>SCBA HARNESS GUIDES</u> The plastic seatbelt guides shall be extended to minimize the chance of getting the belts caught in the door jam.</p> <p><u>AIR HORN SYSTEM</u> Two (2) Grover air horns shall be provided and located, in the front bumper, recessed locate through the bumper, inside frame rails.. The horn system shall be piped to the air brake system wet tank utilizing .38" tubing. A pressure protection valve shall be installed in-line to prevent the loss of air, in the air brake system.</p> <p><u>AIR HORN CONTROL</u> The air horn shall be actuated by a push button switch located similar to the foot type located on the officer side of the engine tunnel.</p> <p><u>ELECTRONIC SIREN</u> A "Code 3", model 3692, electronic siren with noise canceling microphone shall be provided.</p> <p>Siren head shall be located on a swivel bracket mounted so that it is accessible to both the driver and officer. The swivel bracket shall be capable of rotating a minimum of 180 degrees.</p> <p>Siren shall be actuated by the horn button in the steering wheel. The driver shall have the option to control the siren or the chassis horns from the horn button by means of a selector switch.</p> <p><u>SPEAKER</u> There shall be two (2) speakers, Code-3 Model PB100C with chrome finish, recessed in the front bumper. Connection shall be connected to the siren amplifier.</p> <p><u>MECHANICAL SIREN, (Auxiliary)</u> A Federal Q2B siren shall be furnished. A siren brake button shall be installed on the switch panel.</p> <p>The mechanical siren shall be recessed in the front bumper in the center. The siren shall be supported by the bumper framework.</p> <p>The mechanical siren shall be actuated by a push button similar to the foot type and located on the officer side of the engine tunnel.</p>		

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	Yes	No
<p style="text-align: center;">SECTION IV ELECTRICAL/LIGHTING</p> <p><u>MULTIPLEX ELECTRICAL SYSTEM WITH VISTA DISPLAY</u> The electrical system for the vehicle will be fully multiplexed; A Wheldon multiplex electrical system shall be installed per NFPA 1901. There shall be two (2) screens one (1) for the driver and one (1) for the officer.</p> <p><u>ENGINE COMPARTMENT LIGHT</u> An engine compartment light shall be installed under the engine hood, of which the switch is an integral part. Light shall have a .125" diameter deep hole in its lens to prevent moisture retention.</p> <p><u>CAB INTERIOR LIGHTING</u> Auxiliary lights shall be provided in the cab and consisting of:</p> <ul style="list-style-type: none"> - Two (2) Weldon, Model 8081, red/clear dome light located, one (1) on the officer side and one (1) on the driver side, controlled by the following: <ul style="list-style-type: none"> 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. <p><u>CREW CAB INTERIOR LIGHTING</u> Auxiliary lights shall be provided in the crew cab and consist of:</p> <ul style="list-style-type: none"> - Two (2) Weldon, Model 8081, Red/Clear dome lights located one (1) each side, controlled by the following: <ul style="list-style-type: none"> Clear forward light controlled by the door switch and the lens switch. Red rearward light controlled by the lens switch. - A courtesy light at each door opening, controlled by automatic door switches <p><u>STEP LIGHTS</u> For reduced overall maintenance costs compared to incandescent lighting, there shall be four (4) LED, step lights 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.</p> <p>The lights shall be activated when the adjacent door is opened.</p> <p><u>HVAC SYSTEM</u> The cab shall be equipped with a ceiling mounted HVAC system. The system shall consist of an overhead heater/defroster/air-conditioning unit mounted above the engine tunnel in a central location</p>		

Specifications	Bidder Complies	
	Yes	No
<p>with dash mounted controls.</p> <p>The system shall be capable of lowering the cab interior from 100 degrees to 70 degrees within 30 minutes, with a relative humidity of sixty percent.</p> <p><u>INTERIOR CAB INSULATION</u> The cab and crew cab walls shall be insulated with 2.00" insulation where possible and the roof with 1.00" insulation to aid in cooling.</p> <p>The insulation shall be covered with a vinyl liner or a metal panel painted to match the interior.</p> <p>An additional red warning light shall be installed to the side of the exterior air conditioning housing. The light shall match the upper zone lighting package to meet NFPA requirements.</p> <p><u>CAB INSTRUMENTATION</u> The cab instrument panel shall consist of gauges, an LCD display, telltale indicator lights, audible warning and control switches. The function of instrument panel controls and switches shall be identified by a label adjacent to each item. Actuation of the headlight switch shall illuminate the label wording for after dark operation. Telltale indicator lamps shall not be illuminated unless necessary. The cab instruments and controls shall be conveniently located within the forward cab section directly forward of the driver. Gauges and emergency vehicle switches shall be installed on removable panels for ease of service and low cost of ownership.</p> <p>All gauges shall perform prove out at initial power-up to ensure proper performance.</p> <p><u>CONTROL SWITCHES</u> For ease of use, the following controls shall be provided immediately adjacent to the cab instrument panel within easy reach of the driver.</p> <p style="padding-left: 20px;">Ignition switch: For ease of use in low light conditions, the switch shall contain a red indicator light which shall activate when the battery switch is on and a green indicator light which shall activate whenever the ignition switch is on.</p> <p style="padding-left: 20px;">Momentary engine start switch: For ease of use in low light conditions, an integral red indicator light shall activate with the battery switch.</p> <p style="padding-left: 20px;">Headlight / Parking light switch: A three (3)-position switch shall be provided. The first switch position shall deactivate all parking lights and the headlights. The second switch position shall activate the parking lights. The third switch position shall activate the headlights.</p> <p style="padding-left: 20px;">Turn signal arm:</p> <p style="padding-left: 40px;">Self canceling turn signal</p> <p style="padding-left: 20px;">Wiper controls:</p> <p style="padding-left: 40px;">Wash function</p> <p style="padding-left: 40px;">Hi/Low/Intermittent (4 speeds)</p> <p style="padding-left: 20px;">Hazard switch shall be incorporated into the steering column.</p> <p style="padding-left: 20px;">Parking brake control</p> <p style="padding-left: 20px;">Chassis horn control shall be provided in the center of the steering wheel</p> <p style="padding-left: 20px;">Audible steady tone warning alarm</p> <p style="padding-left: 20px;">Audible pulsing tone caution alarm: Any active audible alarms shall be silenced by holding the ignition switch at the top position for 3-5 seconds. For improved safety, silenced audible alarms shall intermittently chirp every 30 seconds until the alarm conditions no longer exist. The intermittent chirp shall act as a reminder to the operator that a caution or warning condition still exists. For added convenience, any new warning or caution conditions shall enable again the steady or pulsing tones respectively.</p> <p><u>DIAGNOSTIC PANEL</u> A diagnostic panel shall be accessible while standing on the ground and located inside the driver's</p>		

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	Yes	No
<p>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.</p> <p><u>SWITCHES</u> The design of cab instrumentation shall allow for emergency lighting and other switches to be placed within easy reach of the operator and officer thus improving safety.</p> <p><u>WIPER CONTROL</u> For simple operation and easy reach, the windshield wiper control shall be an integral part of the directional light lever located on the steering column. The wiper control shall include high and low wiper speed settings, a four (4) speed intermittent wiper control and windshield washer switch. The control shall have a "return to park" provision, which allows the wipers to re-turn to the stored position when the wipers are not in use.</p> <p><u>RADIO ANTENNA MOUNT</u> Two (2) antenna-mounting bases, with 17 feet of coax cable and weatherproof cap shall be provided for a two-way radio.</p> <p>One (1) antenna for external modem shall be supplied and mounted for the MDT. The cable will be routed to the area of the dash where the MDT will be located. There will be a connection to power the MDT in the area of the MDT that will allow the MDT to operate off of shoreline power when the vehicle is in station.</p> <p>The mount shall be located on the cab roof just to the rear of the officer seat.</p> <p>The cable shall be routed to the seat box on the officer side with enough cable for customer to route to the instrument panel if needed.</p> <p>The radios will be supplied and installed by the City of Torrington.</p> <p><u>MTD- Panasonic Toughbook:</u> One (1) A CF-30KAPAX2M c-Duo2-1.6GHZ/2GB/160GB 13.3" TCH/WIFI/BT/EMBKB/WINXP</p> <p>One (1) PA1650-1253 AUTO ADAPTER 12V to 15V LIND- ALL TOUGHBOOK MODELS</p> <p>One (1) 6000244 MIGRATON MP MODEM KIT w/usb & serial cab, Black Ant.</p> <p>One (1) MP595GPS-SO MODEM EVDO REV A Sprint / GPS/ Sierra</p> <p>(NO EXCEPTIONS)</p> <p>The MTD shall be mounted in the area of the officers' seat so it can be easily accessed while seat belted.</p> <p><u>SWITCH PANELS</u></p>		

Specifications	Bidder Complies	
	Yes	No
<p>The built-in emergency light switch panel shall have a master switch plus individual switches for selective control.</p> <p><u>CIRCUIT PROTECTION AND CONTROL DIAGRAM</u> Copies of all job-specific, computer network input and output (I/O) connection shall be provided with each chassis. The Sheets shall indicate the function of each module connection point, circuit protection information (where applicable), wire numbers, wire colors and load management information.</p> <p><u>ADVANCED DIAGNOSTICS</u> An advanced, Windows-based, diagnostic software program shall be provided(2 copies) for this control system. The software shall provide troubleshooting tools to service technicians equipped with an IBM compatible 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 USB cable for connection from a computer to the vehicle.</p> <p><u>INDICATOR LIGHT AND ALARM PROVE-OUT SYSTEM</u> A system shall be provided which automatically tests basic indicator lights and alarms located on the cab instrument panel.</p> <p><u>VOLTAGE MONITOR SYSTEM</u> 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.</p> <p>The alarm shall activate if the system falls below 11.8 volts DC for more than two (2) minutes.</p> <p><u>DEDICATED RADIO EQUIPMENT CONNECTION POINTS</u> There shall be four (4) studs provided in the primary power distribution center located in front of the officer for two-way radio equipment.</p> <p>The studs shall consist of the following: 12-volt 40-amp battery switched power 12-volt 100-amp ground 12-volt 60-amp ignition switched power 12-volt 60-amp direct battery power</p> <p><u>BATTERY SYSTEM</u> Six (6) 12 volt, Exide, Model: 31S950X3W, batteries that include the following features shall be provided: 950 CCA, cold cranking amps, 190 amp reserve capacity, High cycle, Group 31, Rating of 5700 CCA at 0 degrees Fahrenheit, 1140 minutes of reserve capacity, Threaded stainless steel studs.</p> <p>Each battery case shall be a black polypropylene material with a vertically ribbed container for increased vibration resistance. The cover shall be manifold vented with a central venting location to allow a 45 degree tilt capacity.</p> <p>The inside of each battery shall consist of a "maintenance free" grid construction with poly wrapped</p>		

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<p>separators and a flooded epoxy bottom anchoring for maximum vibration resistance.</p> <p><u>BATTERY SYSTEM</u> A single starting system shall be provided.</p> <p>An ignition switch and starter button shall be located on the instrument panel.</p> <p><u>MASTER BATTERY SWITCH</u> A master battery switch, to activate the battery system, shall be provided inside the cab within easy reach of the driver.</p> <p>An indicator light shall be provided on the instrument panel to notify the driver of the status of the battery system.</p> <p><u>BATTERY COMPARTMENTS</u> Batteries shall be stored in well ventilated compartments that are located under the cab and bolted directly to the chassis frame. The compartments shall include formed fit heavy duty roto-molded polyethylene battery tray inserts. The batteries shall be mounted inside of the roto-molded trays. The battery hold downs shall be of a non-corrosive material. All bolts and nuts shall be stainless steel.</p> <p>Heavy-duty battery cables shall be used to provide maximum power to the electrical system. Cables shall be color coded.</p> <p>Battery terminal connections shall be coated with anti-corrosion compound. Battery solenoid terminal connections shall be encapsulated with semi-permanent rubberized compound.</p> <p>There shall be a door in the crew cab floor to provide access to the battery terminals.</p> <p><u>JUMPER STUDS</u> One (1) set of battery jumper studs with plastic color coded covers shall be installed on the bottom of the driver's side battery box. This shall provide for easy jumper cable access. A tag shall be provided for positive/negative terminals.</p> <p><u>BATTERY CHARGER</u> A Kussmaul Autocharge 1000, model 091-56-12 battery charger with internal battery saver shall be provided. A bar graph display indicating the state of charge shall be included.</p> <p>The battery saver circuit shall be capable of supplying up to three (3) amps for external loads such as handlight or auxiliary radio batteries.</p> <p>The battery charger shall be wired to the 120-volt shoreline to activate automatically when power is connected.</p> <p>Battery charger shall be located in the front left body compartment, mounted Upper area, Left side, of Rear wall.</p> <p>The battery charger indicator shall be located on the driver's seat riser.</p> <p><u>ALTERNATOR</u> A C.E. Niehoff, Model C656, alternator shall be provided. It shall have a rated output current of 400 amp as measured by SAE method J56. It shall have a high volume air cooling fan and fan guard. It shall also have a custom three (3)-set point voltage regulator, manufactured by C. E. Niehoff. The alternator shall be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.</p>		

Specifications	Bidder Complies	
	Yes	No
<p><u>ELECTRONIC LOAD MANAGER</u> An electronic load management (ELM) system shall be provided that monitors the vehicles 12-volt electrical system, automatically reducing the electrical load in the event of a low voltage condition, and automatically restoring the shed electrical loads when a low voltage condition expires. This ensures the integrity of the electrical system.</p> <p>For improved reliability and ease of use, the load manager system shall be an integral part of the vehicle's solid state control system requiring no additional components to perform load management tasks. Load management systems which require additional components shall not be allowed.</p> <p><u>SEQUENCER</u> 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.</p> <p>For improved reliability and ease of use, the load sequencing system shall be an integral part of the vehicle's solid state control system requiring no additional components to perform load sequencing tasks. Load sequencing systems which require additional components shall not be allowed.</p> <p>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.</p> <p>When the emergency master switch is deactivated, the sequencer shall deactivate the warning light loads in the reverse order.</p> <p><u>AMP DRAW REPORT</u> The bidder shall provide, at the time of bid and delivery, an itemized print out of the expected amp draw of the entire vehicle's electrical system.</p> <p>The manufacturer of the apparatus shall provide the following:</p> <ol style="list-style-type: none"> 1) Documentation of the electrical system performance tests. 2) A written load analysis, which shall include the following: <ol style="list-style-type: none"> A) The nameplate rating of the alternator. B) The alternator rating under the conditions specified per: Applicable NFPA 1901 or 1906 (Current Edition). C) The minimum continuous load of each component that is specified per: Applicable NFPA 1901 or 1906 (Current Edition). D) Additional loads that, when added to the minimum continuous load, determine the total connected load. E) Each individual intermittent load. <p>All of the above listed items shall be provided by the bidder per the applicable NFPA 1901 or 1906 (Current Edition).</p> <p><u>EXTERIOR LIGHTING</u></p>		

Specifications	Bidder Complies	
	Yes	No
<p>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.</p> <p>Front headlights shall be halogen, rectangular shape, one (1) pair mounted in each front trim housing.</p> <p>The LED directional lights shall wrap-around on the outside corners of the trim housing. The headlight and LED directional lights shall be in the same assembly.</p> <p>Five (5) LED clearance and marker lights shall be installed across the leading edge of the cab.</p> <p><u>WARNING LIGHTS (Cab Face)</u> Two (2) pair of Whelen model 60*00F*R LED lights will be installed on the cab face, above the headlights, mounted in a common bezel.</p> <p>The outer LEDs will be required for NFPA and will meet or exceed the NFPA required light output for the front lower zone. The color of these LEDs shall be red Super LED/red lens. The inner LEDs shall be additional lighting. The color of these lights shall be red Super LED/red lens.</p> <p>Both sets of lights shall be activated by the same switch in the cab.</p> <p><u>BACK-UP ALARM</u> A solid state electronic audible back-up alarm that actuates when the truck is shifted into reverse shall be provided. The device shall sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum five (5) dBA above surrounding environmental noise levels. It shall be model # SA 917</p> <p><u>PUMP PANEL ILLUMINATION</u> The pump operator's panel shall be illuminated to provide the operator the best possible work area.</p> <p><u>ELECTRICAL HARNESSING INSTALLATION</u> To ensure rugged dependability, all 12-volt wiring harnesses installed by the apparatus manufacturer shall conform to the following specifications:</p> <p>SAE J1128 - Low tension primary cable SAE J1292 - Automobile, truck, truck-tractor, trailer and motor coach wiring SAE J163 - Low tension wiring and cable terminals and splice clips SAE J2202 - 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</p> <p>SAE J1939 - Serial communications protocol SAE J2030 - Heavy-duty electrical connector performance standard SAE J2223 - Connections for on board vehicle electrical wiring harnesses NEC - National Electrical Code SAE J561 - Electrical terminals - Eyelet and spade type SAE J928 - Electrical terminals - Pin and receptacle type A</p> <p>Wiring shall be run in loom or conduit where exposed, and have grommets or other edge protection where wires pass through metal. Wiring shall be color, function and number coded. 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 2.00" intervals. All wiring</p>		

Specifications	Bidder Complies	
	Yes	No
<p>installed between the cab and into doors shall be protected by an expandable rubber boot 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:</p> <ol style="list-style-type: none"> (1) All wire ends not placed into connectors shall be sealed with a heat shrink end cap. Wires without a terminating connector or sealed end cap shall not be allowed. (2) 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. (3) 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. (4) 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. (5) Corrosion preventative compound shall be applied to non-waterproof electrical connectors located outside of the cab or body. All non-waterproof connections shall require this compound in the plug to prevent corrosion and for easy separation of the plug. (6) Any lights containing non-waterproof sockets in a weather-exposed area shall have corrosion preventative compound added to the socket terminal area. (7) All electrical terminals in exposed areas shall have DOW 1890 protective Coating applied completely over the metal portion of the terminal. (8) Rubber coated metal clamps shall be used to support wire harnessing and battery cables routed along the chassis frame rails. (9) 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. (10) All braided wire harnesses shall have a permanent label attached for easy identification of the harness part number and fabrication date. (11) All standard wiring entering or exiting the cab shall be routed through sealed bulkhead connectors to protect against water intrusion into the cab. <p><u>BATTERY CABLE INSTALLATION</u></p> <p>All 12-volt battery cables and battery cable harnessing installed by the apparatus manufacturer shall conform to the following requirements:</p> <p>SAE J1127 - Battery Cable SAE J561 - Electrical terminals, eyelets and spade type SAE J562 - Nonmetallic loom SAE J836A - Automotive metallurgical joining SAE J1292 - Automotive truck, truck-tractor, trailer and motor coach wiring NFPA 1901 - Standard for automotive fire apparatus</p> <p>Battery cables and battery cable harnessing shall be installed utilizing the following guidelines:</p> <ol style="list-style-type: none"> (1) All battery cables and battery harnesses shall have a permanent label attached for easy identification of the harness part number and fabrication date. (2) Splices shall not be allowed on battery cables or battery cable harnesses. (3) For ease of identification and simplified use, battery cables shall be color coded. All positive battery cables shall be red in color or wrapped in red loom the entire length of the cable. All negative battery cables shall be black in color. (4) For ease of identification, all positive battery cable isolated studs throughout the cab and chassis shall be red in color. (5) For increased reliability and reduced maintenance, all electrical buss bars located on the exterior of the apparatus shall be coated to prevent corrosion. 		

Specifications	Bidder Complies	
	Yes	No
<p><u>ELECTRICAL COMPONENT INSTALLATION</u> All lighting used on the apparatus shall be, at a minimum, a two (2) wire light grounded through a wired connection to the battery system. Lights using an apparatus metal structure for grounding shall not be allowed.</p> <p>An operational test shall be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order. The results of the tests shall be recorded and provided to the purchaser at time of delivery.</p> <p><u>TRAFFIC ADVISOR</u> A Whelen model # TAL65 LED Traffic Advisor shall be provided in an area specified. The light will be 36" long and will include six (6) individual LED amber lamps. The controls for the unit shall be installed in the chassis cab.</p> <p><u>HEADLIGHTS</u> The headlights shall have a switch so when they are responding in the emergency mode they will alternate (wig/wag)</p> <p><u>STEP LIGHTS</u> There shall be two (2) LED step lights shall be provided at the rear to illuminate the tailboard/step area.</p> <p>These step lights shall be actuated with the perimeter scene lights.</p> <p><u>REAR FMVSS LIGHTING</u> The rear stop/tail and directional lighting shall consist of the following: Two (2) Whelen model 60R00BRR red LED stop/tail lights. Two (2) Whelen, Model 60A00TAR, amber LED populated arrow turn light.</p> <p>These lights shall be installed at the rear of the truck in a polished housing.</p> <p>Four (4) red reflectors shall be provided.</p> <p>A Weldon, Model 23882-2600-00, license plate bracket shall be mounted on the driver's side above the warning lights. A Weldon, Model 9186-23882-30, step lamp shall illuminate the license plate.</p> <p>Two (2) Whelen, Model: 60J000CU backup lights shall be provided.</p> <p>The three (3) identification lights located at the rear shall be installed per the following: Truck-Lite, Model 26, LED As close as practical to the vertical centerline. Centers spaced not less than six (6) inches or more than twelve (12) inches apart. Red in color. All at the same height.</p> <p>The four (4) clearance lights located at the rear shall be installed per the following: Truck-Lite, Model 26, LED To indicate the overall width of the vehicle. One (1) each side of the vertical centerline. All at the same height. As near the top as practical. To be visible from the rear and the side. One (1) each side, facing the side.</p>		

Specifications	Bidder Complies	
	Yes	No
<p style="text-align: center;">One (1) each side, facing the rear.</p> <p>Per FMVSS 108 and CMVSS 108 requirements.</p> <p><u>LIGHTING BEZEL</u> Two (2) Whelen, Model Cast 4V, four (4) light aluminum housings shall be provided for the rear stop/tail, directional, scene lights and warning.</p> <p><u>LIGHT, INTERMEDIATE</u> There shall be one (1) pair, of Truck-Lite, Model: 60115Y, amber, LED, turn signal, marker lights furnished, one (1) each side, horizontally in the rear fender panel.</p> <p>A stainless steel trim shall be included with this installation.</p> <p><u>"DO NOT MOVE APPARATUS" INDICATOR</u> A flashing red indicator light (located in the driving compartment) shall be illuminated automatically per NFPA (1996 edition, 9-11 or 1999 edition 11-11). The light shall be labeled "Do Not Move Apparatus If Light Is On".</p> <p><u>DO NOT MOVE TRUCK MESSAGES</u> Messages shall be displayed on the gauge panel LCD located forward of the steering wheel directly in front of the driver whenever the Do Not Move Truck light is active. The messages shall designate the item or items not in the stowed for vehicle travel position (parking brake disengaged).</p> <p><u>VEHICLE DATA RECORDER AND OCCUPANT SEATING INDICATOR</u> A vehicle data recorder system shall be provided to comply with NFPA. A list of what data will be recorded will be provided.</p> <p><u>OCCUPANT DETECTION SYSTEM</u> There shall be a visual and audible warning system installed in the cab that indicates the occupant buckle status of all cab seating positions that are designed to be occupied during vehicle movement. The display shall be located on the cab dash near the transmission shifter.</p> <p><u>COMPARTMENT LIGHTING</u> Super Bright compartment lights shall be provided in each compartment. One (1) strip shall be mounted vertically along each side of the door framing. There shall be six (6) pairs provided, two (2) in each compartment.</p> <p>Opening the compartment door shall automatically turn the compartment lighting on.</p> <p><u>PUMP COMPARTMENT LIGHT</u> A pump compartment light shall be provided inside the right side pump enclosure and accessible through a door on the pump panel.</p> <p>A .125" weep hole shall be provided in each light lens, preventing moisture retention.</p> <p><u>PERIMETER SCENE LIGHTS, CAB</u> There shall be a Truck-lite, model 44042C, 4.00", LED, grommet mounts weatherproof light provided for each cab door. Lighting shall be designed to provide illumination on areas under the driver, officer, and crew cab riding area exits, which shall be activated automatically when the exit doors are opened, by the door jam switch and by the same means as the body perimeter lights.</p>		

Specifications	Bidder Complies	
	Yes	No
<p>The lighting shall be capable of providing illumination at a minimum level of one (1) foot-candle on ground areas within 30.00" of the edge of the apparatus in areas which personnel climb in or out of the apparatus or descend from the apparatus to the ground level.</p> <p><u>PERIMETER SCENE LIGHTS, BODY</u> There shall be a total of four (4) Truck-Lite, Model 44042C, LED lights provided on the apparatus. Each light shall consist of a 4.00" weatherproof LED light, rubber mount, and pigtail kit.</p> <p>The lights shall be mounted in the following locations: Two (2) lights shall be provided under the rear step area. One (1) light shall be provided each side under the pump panel running boards.</p> <p>The lighting shall be capable of providing illumination at a minimum level of one (1) footcandle on ground areas within 30.00" of the edge of the apparatus in areas designed for personnel to climb onto the apparatus or descend from the apparatus to the ground level.</p> <p>The lights shall be activated by a parking brake control and transmission reverse activation.</p> <p><u>ADDITIONAL PERIMETER LIGHTS</u> There shall be two (2) lights in addition to the normal body perimeter lights installed (1) one under D3 compartment, (1) one under P3 compartment These additional lights shall be Truck-Lite, Model: 44042C, LED lights.</p> <p><u>SCENE LIGHTS</u> one (1) pair of Whelen, Model 90E000ZR, Gradient opti-scene lights shall be installed Just passed Crew Cab door, upper section, both driver side and passenger side.</p> <p>The lights shall be controlled by the following: From the first switch feature, a control at the driver side switch panel. From the second switch feature, a control at the pump panel. From the third switch feature, there is no control of this option. From the fourth switch feature, the lights are controlled from any of the cab or crew cab door openings.</p> <p>These lights shall be installed with a flange.</p> <p><u>REAR SCENE LIGHTS</u> There shall be one (1) pair of Whelen, model: 90E000ZR Gradient halogen, scene lights installed (1) on Rear of truck - driver side upper area and (1) on Rear of truck - passenger side upper area.</p> <p>The lights shall have 8 to 32 degree internal optics.</p> <p>These lights shall be controlled by the following options: From the first switch feature, a control at the driver side switch panel. From the second switch feature, a control at the pump panel. From the third switch feature, there is no control of this option. From the fourth switch feature, there is no control of this option</p> <p>These lights shall be provided with a flange.</p> <p><u>12 VOLT LIGHTING</u> 2 Fire Research, Optimum OPA851-HD15, 12VDC HID light shall be provided. The lights shall be mounted on a special bracket on the front of the cab roof. Bracket will be sized to fit the light. The exact location of the lights will be determined at time of construction. To be used to find house address at night.</p>		

Specifications	Bidder Complies	
	Yes	No
<p>Light head shall be 12 volt, draw 12.5 amps, produce 11,250 Lumens, and a 150 watt HID bulb.</p> <p>All wiring used shall be a minimum of 10 gauge wire in loom that is properly supported and protected from injury.</p> <p>The light shall be controlled by a switch accessible to the driver</p> <p>These lights may be load managed when the parking brake is set.</p> <p><u>12 VOLT TELESCOPIC SCENE LIGHTING</u> Four (4) Whelen model PFP2 dual lamp super LED lights will be provided. There shall be two (2) mounted on each side of the apparatus. One (1) shall be mounted to the rear of the cab on each side. One (1) shall be mounted on the front of the body just rearward of the pump panel one each side.</p> <p><u>WARNING LIGHTS</u> A Whelen Freedom Model FN**QLED LED lightbar shall be mounted on the cab roof.</p> <p>The lightbar shall include the following: Four (4) red flashing forward facing LED modules. Four (4) 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) 3M model 9592 Opticom with National standard.</p> <p>All the lenses shall be clear.</p> <p>Two (2) switches located in the cab, on the switch panel, shall control this lightbar. One (1) switch shall control all the warning lights One (1) switch shall control the Opticom</p> <p>To meet NFPA, all clear lights and the Opticom shall be disabled when the parking brake is applied.</p> <p><u>SIDE ZONE LOWER LIGHTING</u> Four (4) Whelen model 60*02F*R, 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, over the rear wheel well. The color of these lights shall be red Super LED/red lens each side.</p> <p>The above four (4) lights shall be required to meet or exceed the lower level optical warning and optical power requirements of NFPA.</p> <p>These lights shall be controlled by a lighted switch on the cab instrument panel.</p> <p>These lights shall be installed with a flange.</p> <p><u>REAR ZONE LOWER LIGHTING</u> Two (2) Whelen model 60*02F*R flashing "Super" LED and will be provided with 6E or 64 flange kit. The color of these lights shall be red.</p> <p>The following lights shall be provided at the front and rear side upper corners of the side sheet facing</p>		

Specifications	Bidder Complies	
	Yes	No
<p>the side of the truck each side (Upper zone B and D): Two (2) Whelen model 90**5FR Super LED lights and will be provided with a flange These lights shall be: red SuperLED/red lens each side red Super LED/red lens each side</p> <p>Per NFPA, the lights shall be switched on by a lighted switch on the instrument panel and all lights will be active whenever the switch is on.</p> <p>The rear warning lights shall be mounted on stainless steel brackets with all wiring totally enclosed. These brackets shall also support the clearance/marker lights</p> <p><u>ELECTRICAL SYSTEM GENERAL DESIGN FOR ALTERNATING CURRENT</u> The following guidelines shall apply to the 120/240 VAC system installation:</p> <p><u>GENERAL</u> Any fixed line voltage power source producing alternating current (ac) line voltage shall produce electric power at 60 cycles plus or minus 5 cycles.</p> <p>Except where superseded by the requirements of NFPA 1901, all components, equipment and installation procedures shall conform to NFPA 70, National Electrical Code (herein referred to as the NEC).</p> <p>Line voltage electrical system equipment and materials included on the apparatus shall be listed and installed in accordance with the manufacturer's instructions. All products shall be used only in the manner for which they have been listed.</p> <p><u>GROUNDING</u> Grounding shall be in accordance with Section 250-6 "Portable and Vehicle Mounted Generators" of the NEC. Ungrounded systems shall not be used. Only stranded or braided copper conductors shall be used for grounding and bonding.</p> <p>An equipment grounding means shall be provided in accordance with Section 250-91 (Grounding Conductor Material) of the NEC.</p> <p>The grounded current carrying conductor (neutral) shall be insulated from the equipment grounding conductors and from the equipment enclosures and other grounded parts. The neutral conductor shall be colored white or gray in accordance with Section 200-6 (Means of Identifying Grounding Conductors) of the NEC.</p> <p>In addition to the bonding required for the low voltage return current, each body and driving or crew compartment enclosure shall be bonded to the vehicle frame by a copper conductor. This conductor shall have a minimum amperage rating of 115 percent of the nameplate current rating of the power source specification label as defined in Section 310-15 (amp capacities) of the NEC. A single conductor properly sized to meet the low voltage and line voltage requirements shall be permitted to be used.</p> <p>All power source system mechanical and electrical components shall be sized to support the continuous duty nameplate rating of the power source.</p> <p><u>OPERATION</u> Instructions that provide the operator with the essential power source operating instructions, including the power-up and power-down sequence, shall be permanently attached to the apparatus at any point</p>		

Specifications	Bidder Complies	
	Yes	No
<p>where such operations can take place.</p> <p>Provisions shall be made for quickly and easily placing the power source into operation. The control shall be marked to indicate when it is correctly positioned for power source operation. Any control device used in the drive train shall be equipped with a means to prevent the unintentional movement of the control device from its set position.</p> <p>A power source specification label shall be permanently attached to the apparatus near the operator's control station. The label shall provide the operator with the information detailed in Figure 19-4.10.</p> <p>Direct drive (PTO) and portable generator installations shall comply with Article 445 (Generators) of the NEC.</p> <p><u>OVERCURRENT PROTECTION</u></p> <p>The conductors used in the power supply assembly between the output terminals of the power source and the main over current protection device shall not exceed 144 inches. (3658 mm) in length.</p> <p>For fixed power supplies, all conductors in the power supply assembly shall be type THHW, THW, or use stranded conductors enclosed in nonmetallic liquid tight flexible conduit rated for a minimum of 194 degree Fahrenheit (90 degrees Celsius).</p> <p>For portable power supplies, conductors located between the power source and the line side of the main overcurrent protection device shall be type SO or type SEO with suffix WA flexible cord rated for 600-volts at 194 degrees Fahrenheit (90 degrees Celsius).</p> <p><u>WIRING METHODS</u></p> <p>Fixed wiring systems shall be limited to the following:</p> <ul style="list-style-type: none"> - Metallic or nonmetallic liquid tight flexible conduit rated at not less than 194 degrees Fahrenheit (90 degrees Celsius) <li style="padding-left: 40px;">or - Type SO or Type SEO cord with a WA suffix, rated at 600 volts at not less than 194 degrees Fahrenheit (90 degrees Celsius) <p>Electrical cord or conduit shall not be attached to chassis suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components, or low voltage wiring. In addition the wiring shall be run as follows.</p> <ul style="list-style-type: none"> - Separated by a minimum of 12 inches (305 mm), or properly shielded, from exhaust piping - Separated from fuel lines by a minimum of six (6) inches (152 mm) distance. <p>Electrical cord or conduit shall be supported within six (6) inches (152 mm) of any junction box and at a minimum of every 24 inches (610 mm) of continuous run. Supports shall be made of nonmetallic materials or corrosion protected metal. All supports shall be of a design that does not cut or abrade the conduit or cable and shall be mechanically fastened to the vehicle.</p> <p><u>WIRING IDENTIFICATION</u></p> <p>All line voltage conductors located in the main panel board shall be individually and permanently identified. The identification shall reference the wiring schematic or indicate the final termination point. When prewiring for future power sources or devices, the unterminated ends shall be labeled showing functions and wire size.</p> <p><u>WET LOCATIONS</u></p>		

Specifications	Bidder Complies	
	Yes	No
<p>All wet location receptacle outlets and inlet devices, including those on hardwired remote power distribution boxes, shall be of the grounding type provided with a wet location cover and installed in accordance with Section 210-7 "Receptacles and Cord Connections" of the NEC.</p> <p>All receptacles located in a wet location shall be not less than 24 inches (610 mm) from the ground. Receptacles on off-road vehicles shall be a minimum of 30 inches (762 mm) from the ground.</p> <p>The face of any wet location receptacle shall be installed in a plane from vertical to not more than 45 degrees off vertical. No receptacle shall be installed in a face up position.</p> <p><u>DRY LOCATIONS</u> All receptacles located in a dry location shall be of the grounding type. Receptacles shall be not less than 30 inches (762 mm) above the interior floor height.</p> <p>All receptacles shall be marked with the type of line voltage (120-volts or 240-volts) and the current rating in amps. If the receptacles are direct current, or other than single phase, they shall be so marked.</p> <p><u>LISTING</u> All receptacles and electrical inlet devices shall be listed to UL 498, Standard for Safety Attachment Plugs and Receptacles, or other appropriate performance standards. Receptacles used for direct current voltages shall be rated for the appropriate service.</p> <p><u>ELECTRICAL SYSTEM TESTING</u> The wiring and associated equipment shall be tested by the apparatus manufacturer or the installer of the line voltage system.</p> <p>The wiring and permanently connected devices and equipment shall be subjected to a dielectric voltage withstand test of 900-volts for one (1) minute. The test shall be conducted between live parts and the neutral conductor, and between live parts and the vehicle frame with any switches in the circuit(s) closed. This test shall be conducted after all body work has been completed.</p> <p>Electrical polarity verification shall be made of all permanently wired equipment and receptacles to determine that connections have been properly made.</p> <p><u>OPERATIONAL TEST PER CURRENT NFPA 1901 STANDARD</u> The apparatus manufacturer shall perform the following operation test and ensure that the power source and any devices that are attached to the line voltage electrical system are properly connected and in working order. The test shall be witnessed and the results certified by Underwriters Laboratories.</p> <p>The prime mover shall be started from a cold start condition and the line voltage electrical system loaded to 100 percent of the nameplate rating.</p> <p>The power source shall be operated at 100 percent of its nameplate voltage for a minimum of two (2) hours unless the system meets category certification as defined in the current NFPA 1901 standard.</p> <p>Where the line voltage power is derived from the vehicle's low voltage system, the minimum continuous electrical load as defined in the current NFPA 1901 standard shall be applied to the low voltage electrical system during the operational test.</p>		

Specifications	Bidder Complies	
	Yes	No
<p><u>GENERATOR</u> The apparatus shall be equipped with a complete electrical power system. The generator shall be a Harrison 10 KW Hydraulic unit. The wiring and generator installation shall conform to the present National Electrical Codes Standards of the National Fire Protection Association. The installation shall be designed for continuous operation without overheating and undue stress on components.</p> <p><u>GENERATOR PERFORMANCE</u></p> <ul style="list-style-type: none"> - Continuous Duty Rating: 10,000 watts - Nominal Volts: 120/240 - Amperage: 80 @ 120 volts, 40 @ 240 volts - Phase: Single, 4 wire - Cycles: 60 hertz - Engine Speed at Engagement: Idle - RPM range: 900 to 3,000 (hydraulic pump) <p>The output of the generator shall be controlled by an internal hydraulic system. An electrical instrument gauge panel shall be provided for the operator to monitor and control all electrical operations and output.</p> <p>The generator shall be driven by a transmission power take off unit, through a hydraulic pump and motor.</p> <p>The generator shall include an electrical control inside the cab. The hydraulic engagement supply shall be operational only after the chassis parking brake is applied.</p> <p>An electric/hydraulic valve shall supply hydraulic fluid to the clutch engagement unit provided on the chassis PTO drive.</p> <p><u>GENERATOR INSTRUMENTS AND CONTROLS</u> To properly monitor the generator performance a digital meter panel shall be furnished and mounted next to the circuit breaker panel. The meter shall indicate the following items:</p> <ul style="list-style-type: none"> - Voltage - Amperage for both lines - Frequency - Generator run hours - Over current indication - Over temperature indication - "Power On" indication - Two (2) fuse holders with two (2) amp fuses (for indicator light protection) <p>The meter and indicators shall be installed near eye level in the compartment. Instruments shall be</p>		

Specifications	Bidder Complies	
	Yes	No
<p>flush mounted in an appropriate sized weatherproof electrical enclosure. All instruments used shall be accurate within +/- two (2) percent.</p> <p><u>GENERATOR WIRING:</u> The system shall be installed by highly qualified electrical technicians to assure the required level of safety and protection to the fire apparatus operators. The wiring, electrical fixtures and components shall be to the highest industry quality standards available on the domestic market. The equipment shall be the type as designed for mobile type installations subject to vibration, moisture and severe continuous usage. The following electrical components shall be the minimum acceptable quality standards for this apparatus:</p> <p><u>WIRING:</u> All electrical wiring shall be fine stranded copper type. The wire shall be sized to the load and circuit breaker rating; ten (10) gauge on 30 amp circuits, 12 gauge on 20 amp circuits and 14 gauge on 15 amp circuits. The cable shall be run in corner areas and extruded aluminum pathways built into the body for easy access.</p> <p><u>LOAD CENTER:</u> The main load center shall be a Cutler Hammer with circuit breakers rated to load demand.</p> <p><u>CIRCUIT BREAKERS:</u> Individual breakers shall be provided for all on-line equipment to isolate a tripped breaker from affecting any other on-line equipment.</p> <p><u>GENERATOR LOCATION</u> The generator shall be mounted in the cargo area at the front of the body in cargo area, as per engineering position selection. The flooring in this area shall be either reinforced or constructed, in such a manner, that it shall handle the additional weight of the generator.</p> <p><u>GENERATOR START</u> A switch shall be located on the cab instrument panel to engage the generator.</p> <p><u>CIRCUIT BREAKER PANEL</u> The circuit breaker panel shall be located in compartment D3, recessed on the upper left side of compartment.</p> <p><u>CORD</u> Provided for electric distribution shall be one (1) length installed on the reel of 200 feet of black 10/3 electrical cord. No connector shall be installed on the end of the cord. The location of the reel shall be determined at the preconstruction conference.</p> <p><u>PORTABLE JUNCTION BOX</u> There shall be two (2) 120 vac 15 amp twist lock receptacles and two (2) 120 vac 15 amp straight blade receptacles along with a locator/indicator light provided in an outlet box. The junction box shall be weatherproof and have rubber closure caps at each outlet opening.</p> <p>The junction box shall be metal or aluminum. The junction box shall be connected to the cord on the reel with a twist lock connector body.</p> <p>A total of one (1) shall be provided.</p> <p><u>KUSSMAUL AUTO EJECT FOR SHORELINE</u> one (1) shoreline receptacle shall be provided to operate the dedicated 120-volt circuits on the truck without the use of the generator.</p>		

Specifications	Bidder Complies	
	Yes	No
<p>The shoreline receptacle (s) shall be provided with a NEMA 5-15, 120 volt, 15 amp, straight blade Kussmaul auto eject plug with a red weatherproof cover. The cover is spring loaded to close, preventing water from entering when the shoreline is not connected.</p> <p>A solenoid wired to the vehicle's starter is energized when the engine is started. This instantaneously drives the plug from the receptacle.</p> <p>The shoreline shall be connected to determined at preconstruction mtg..</p> <p>A mating connector body shall also be supplied with the loose equipment.</p> <p>The shoreline receptacle shall be located on the driver side of cab, above wheel.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.</p> <p>The color of these lights shall be red Super LED/red lens.</p> <p>One (1) switch in the cab on the switch panel shall control these lights.</p> <p>These lights shall be installed with a flange.</p> <p><u>WARNING LIGHTS (Rear and Side upper zones)</u> Eight (8) Whelen Super LED lights shall be provided to meet the NFPA upper zone B, C and D lighting requirements:</p> <p>The following lights shall be provided at the rear upper bulkhead, facing the rear of the truck (Upper zone C):</p> <p style="padding-left: 40px;">Two (2) Whelen model 90**5FR Super LED lights as high and as far to the outside as practical, and will be provided with flange kit</p> <p style="padding-left: 80px;">The color of these lights shall be red Super LED/red lens</p> <p><u>HAND LIGHTS</u> Four (4) Streamlight(s) Fire Vulcan LED light boxes installed where specified and wired to the chassis 12 volt system</p>		

Specifications

**Bidder
Complies**

Yes No

SECTION V APPARATUS BODY

EMS COMPARTMENT

An EMS compartment, floor to ceiling x 36.00" wide x 20.00" deep shall be installed against the back wall. The compartment shall be enclosed with a roll up door and include (2) adjustable shelves.

The compartment shall be constructed of aluminum diamond plate.

This storage compartment shall be compliant per NFPA standard for automotive fire apparatus.

SHELVING

There shall be two (2) shelves provided in the EMS compartment. Each shelf shall be constructed of 0.090" aluminum with a 1.25" up-turned lip. Shelving shall be infinitely adjustable by means of a threaded tightener sliding in a track.

HOSE BED

The hose body shall be fabricated of aluminum

The sides shall not form any portion of the fender compartments.

Upper and rear edges of side panels shall have a double break for rigidity, a split tube finish shall not be acceptable.

Specifications	Bidder Complies	
	Yes	No
<p>The upper inside area of the beavertails shall be covered with brushed aluminum to prevent damage to painted surface when hose is removed.</p> <p>Flooring of the hose bed shall be removable aluminum grating with the top surface corrugated to aid in hose aeration. The grating slats shall be a minimum of .50" x 4.50" with spacing between slats for hose ventilation.</p> <p>Hose bed shall accommodate 1200' ft. LDH 5.00" Synthetic, 200' of 2.50" double jacketed hose, and 250' of 2.50" double jacketed hose with dividers.</p> <p>Acorn nuts shall be installed on all bolts in the hose bed which have exposed threads.</p> <p>The hose bed shall have a vinyl cover to help protect it from the elements.</p> <p><u>TAILBOARD</u> Rear step shall also be constructed of .125" bright aluminum treadplate and spaced .50" from the body, as well as supported by a structural steel assembly.</p> <p><u>TOW EYES</u> Two (2) rear painted "tow" eyes shall be located at the rear of the apparatus and shall be mounted directly to the chassis frame rails.</p> <p><u>UNDERBODY SUPPORT SYSTEM</u> Due to the severe loading requirements of this pumper a method of body and compartment support suitable for the intended load shall be provided.</p> <p><u>AGGRESSIVE WALKING SURFACE</u> All exterior surfaces designated as stepping, standing, and walking areas shall comply with the required average slip resistance of the current NFPA standards.</p> <p><u>LOUVERS</u> All body compartments shall have a minimum of one (1) set of automotive style, dust resistant louvers pressed into a wall to provide one way airflow out of the compartment that prevents water and dirt from gaining access to the compartment.</p> <p><u>APPARATUS BODY MATERIALS</u> To prevent possible interaction of dissimilar metals and to reduce the weight of the completed apparatus, the body and ALL STRUCTURAL COMPONENTS shall be constructed entirely of aluminum.</p> <p><u>COMPARTMENTATION, DRIVER'S SIDE</u> The construction methods will determine the width and height of the below compartments all bidders shall supply what their respective measurements will be for each compartment.</p> <p>A full height, roll-up door compartment immediately ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be approximately 40" wide x 70" high x 29.00" deep. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be wide x high. This compartment shall have 2 adjustable shelves and a 500 lb pull out tray.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p>		

Specifications	Bidder Complies	
	Yes	No
<p>A roll-up door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be approximately 58" wide x 38" high x 29.00" deep. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be wide x high. This compartment shall have 1 adjustable shelf and a divider exact location to be determined at preconstruction meeting.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p>A full height, roll-up door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be approximately 48" wide x 70" high x 29.00" deep. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be wide x high. This compartment shall have a full height divider, 1 pull out tool board and 2 adjustable shelves.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p>There shall be recessed tracks installed vertically in each compartment.</p> <p><u>COMPARTMENTATION, PASSENGER'S SIDE</u></p> <p>A full height, roll-up door compartment immediately ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be approximately 40" wide x 70" high x 29.00" deep. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be wide x high. This compartment shall have 2 adjustable shelves and a 500lb pull out tray.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p>A roll-up door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be approximately 58" wide x 38" high x 29.00" deep. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be wide x high. This compartment shall have a divider and 1 adjustable shelf</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p>A full height, roll-up door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be approximately 48" wide x 70" high x 29 inches deep. The depth of the compartment shall be calculated with the door closed. The clear door opening of this compartment shall be wide x high. There shall be 3 adjustable shelves provided in this compartment.</p> <p>Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand.</p> <p>There shall be recessed tracks installed vertically in each compartment.</p>		

Specifications	Bidder Complies	
	Yes	No
<p><u>REAR COMPARTMENT</u> There shall be a compartment at the rear of the vehicle the size to be determined depending on the location of the ladder tunnel and other construction components. There shall be a roll-up door to access the compartment. The clear door opening of this compartment shall be wide x high. There shall be one pull out shelf and a 500# slide tray installed in the compartment.</p> <p><u>ROLL-UP DOOR, SIDE COMPARTMENTS</u> All roll-up door(s) shall be of an anodized satin finish, double faced, aluminum construction</p> <p>Lath sections shall be an interlocking rib design and shall be individually replaceable without complete disassembly of door.</p> <p>Between each slat at the pivoting joint shall be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals shall allow door to operate in extreme temperatures ranging from plus 180 to minus 40 degrees Fahrenheit. Side, top and bottom seals shall be provided to resist ingress of dirt and weather and be made of Santoprene.</p> <p>All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from plus 300 to minus 40 degrees Fahrenheit. Hardened plastic shall not be acceptable.</p> <p>A polished stainless steel lift bar shall be provided for opening door. Lift bar shall be located at the bottom of door and have latches on the outer extrusion of the doors frame. A ledge shall be supplied over lift bar for additional area to aid in closing the door.</p> <p>Door(s) shall be constructed from an aluminum box section. The exterior surface of each slat shall be flat. The interior surfaces shall be concave to provide strength and prevent loose equipment from jamming the door from inside.</p> <p>To conserve space in the compartment(s), the spring roller assembly shall not exceed 3.00" in diameter. A roll-up door that retracts below the compartment ceiling (garage door style) shall not acceptable The header for the roll-up door assembly shall not exceed 4.00".</p> <p>A heavy-duty magnetic switch shall be used for control of "open compartment door" warning lights.</p> <p>All mechanical components of the door shall be warranted to be free from defects in materials and workmanship for the lifetime of the vehicle. All parts covered under this warranty shall be to the original owner.</p> <p><u>COMPARTMENT CUBIC FOOTAGE</u> There shall be an itemized list listing each compartment and the total usable space within each compartment.</p> <p><u>AIR BOTTLE STORAGE</u> There shall be storage provided in the rear wheel well area to house a least 4 (four) SCBA bottles. If room allows the customer would like to hold as many as the construction would allow.</p> <p><u>RUB RAIL</u> Bottom edge of the side compartments shall be trimmed with a bright aluminum extruded rub rail.</p> <p>The rub rails shall not be an integral part of the body construction, which allows replacement in the event of damage.</p>		

Specifications	Bidder Complies	
	Yes	No
<p>Rub rails shall be attached with bolts and spaced from the body with isolators that shall help to absorb any moderate impact without damaging the body.</p> <p><u>BODY FENDER CROWNS</u> Polished stainless steel fender crowns shall be provided around the rear wheel openings.</p> <p>A brushed stainless steel unpainted fender liner shall be provided to avoid paint chipping. The liners shall be removable to aid in the maintenance of rear suspension components.</p> <p>A dielectric barrier shall be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.</p> <p>The fender crowns shall be held in place with stainless steel screws that thread directly into a composite nut and not directly into the parent body sheet metal to eliminate dissimilar metals contact and greatly reduce the chance for corrosion.</p> <p><u>HOSE TROUGHS</u> A rack shall be provided to store the two hard suction hoses on the side where the access ladder is provided. They shall be on the top of the compartments outside the hose bed.</p> <p><u>LADDER, HOSE BED ACCESS</u> A hose bed access ladder, constructed of aluminum rungs and extruded aluminum rails, shall be provided on the left side rear of the apparatus,</p> <p><u>SPEEDLAYS WITH TRAY</u> At the front of the body shall be two (2) 1.75" 250' speedlay , one (1) 2.50" 200' speedlay, Each bed shall have a 2.00" preconnect line with a 2.00" quarter-turn ball valve and terminate with a 1.50" National Standard hose thread 90 degree swivel. The swivel shall be located at the top of the speedlay compartment to allow easy removal of the hose. The trays shall be constructed to allow for the hose to be looped on each end inside the compartment to allow for rapid deployment of the line. Individual controls for the speedlays shall be at the pump operator's panel.</p> <p>The hose bed shall be capable of carrying 250 feet of 1.75" double jacketed hose with nozzle The hose bed shall be capable of carrying 250 feet of 1.75" double jacketed hose with nozzle The hose bed shall be capable of carrying 200 feet of 2.50" double jacketed hose with nozzle</p> <p>The rear hose bed shall be capable of carrying 250 feet of 2.50" double jacketed hose The rear hose bed shall be capable of carrying 200 feet of 2.50" double jacketed hose The rear hose bed shall be capable of carrying 1200' of 5" synthetic supply hose</p> <p>A removable tray shall be provided for each front speedlay hosebed. The speedlay trays shall be constructed of black poly to provide a lightweight sturdy tray. Two (2) hand holes shall be in the floor and additional hand holes shall be provided in the sides for easy removal and installation from the compartment. The floor of the trays shall be perforated to allow for drainage and hose drying. The bottom of the speedlay compartments shall be lined with stainless steel to allow the tray to slide with ease. Scuffplates shall be provided on both sides, at the sides and bottom of each opening to protect the paint. The trays shall be fabricated to allow for the hose to hanging with loops for deployment purposes.</p> <p><u>STOKES BASKET/BACKBOARD STORAGE</u> Above the speedlays there shall be an area to store a stokes basket and two (2) backboards.</p>		

Specifications

Bidder Complies

Yes No

SECTION VI EQUIPMENT

HARD SUCTION HOSE

Two (2) lengths of 6.00" Kocheck clear corrugated PVC hard suction hose, 10' in length, shall be provided. The hose shall be equipped with stortz type quarter turn couplings. Couplings shall be hard coated aluminum

GROUND LADDERS

The following Duo-Safety ladders shall be furnished and must meet or exceed the latest NFPA standards:

- 28', two (2) section, aluminum,
- 14' roof, aluminum,

LADDER /PIKE POLE STORAGE

Sleeves to hold 3 customer supplied pike pole/hooks shall be provided in the tunnel area.

The ladders shall be stored in a tunnel through the water tank and accessed at the rear.

Ladder shall be stored horizontally stacked.

Specifications	Bidder Complies	
	Yes	No
<p>Ladders shall be secured from moving forward during travel.</p> <p>Rear of ladder storage area shall be accessed through the rear pump access door.</p> <p><u>FOLDING LADDER</u> One (1) 10' aluminum, series 585-A Duo-Safety folding ladder shall be installed in a U-shaped trough inside the ladder storage compartment.</p> <p><u>MONITOR & NOZZLE, DELUGE (NO EXCEPTION)</u> An Elkhart – R.A.M. monitor and nozzle package will be supplied with the vehicle. Supplied with the package will be the monitor, rapid attack nozzle, truck mounting bracket, triple stacked tips, deluge tip and stream shaper. The appliance will be supplied by 200' of 2.50" double jacketed hose. The appliance will be attached to the rear of the vehicle location to be determined during preconstruction meeting. The appliance will be fed from a discharge located on the rear of the vehicle.</p> <p><u>LOOSE EQUIPMENT</u> The following equipment shall be furnished with the completed unit:</p> <ul style="list-style-type: none"> - One (1) bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit <p><u>SOFT SUCTION HOSE</u> There shall be no soft suction hose provided.</p> <p>- Hard suction hose strainer provided as required per NFPA 1901 specifications as outlined in Chapters 5 - 12</p> <p style="text-align: center;">SECTION VII PUMP & WATER TANK</p> <p><u>WATER TANK</u> Booster tank shall have a capacity of 1000 gallons of water and be constructed of polypropylene plastic.</p> <p>Tank shall be baffled in accordance with NFPA Bulletin 1901 requirements.</p> <p>Mounting system shall be approved by the tank manufacturer.</p> <p>There shall be indicator lights on the body and in the cab showing the water level in the tank.</p> <p><u>PUMP SYSTEM - HALE QMAX SINGLE STAGE FIRE PUMP</u> Fire pump shall be a Hale, 1500 gpm single (1) stage centrifugal type located at the midship of the vehicle. Pump shall be the class "A" type.</p> <p><u>ASSEMBLY</u> The entire pump shall be cast, manufactured and tested at the pump manufacturer's factory.</p>		

Specifications	Bidder Complies	
	Yes	No
<p>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, both suction and discharge passages, 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 specs as outlined by the latest NFPA Pamphlet No. 1901. The pump shall be free from objectionable pulsation and vibration.</p> <p>The pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI. All 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 horizontally split, on a single plane, in two sections, for easy removal of entire impeller assembly including wear rings and bearings from beneath the pump without disturbing piping or the mounting of the pump in chassis.</p> <p>The pump shall have one double suction impeller. The pump body shall have two opposed discharge volute cutwaters to eliminate radial unbalance.</p> <p>Pump shaft to be rigidly supported by three bearings for minimum deflection. One high lead bronze sleeve bearing to be located immediately adjacent to the impeller (on side opposite the drive unit). The sleeve bearing is to be lubricated by a force fed, automatic oil lubricated design, pressure balanced to exclude foreign material. The remaining bearings shall be heavy-duty, deep groove ball bearings in the gearbox and they shall be splash lubricated.</p> <p>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 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.</p> <p>The impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body, and of wraparound double labyrinth design for maximum efficiency. The pump shaft shall be heat-treated, electric furnace, corrosion resistant, stainless steel, to be super-finished under packing with galvanic corrosion (zinc separators in packing) protection for longer shaft life. Pump shaft must be sealed with double lip oil seal to deep road dirt and water out of drive unit.</p> <p><u>DRIVE UNIT</u> The drive unit shall be cast and completely manufactured and tested at the pump manufacturer's factory. Pump drive unit shall be of sufficient size to withstand up to 16,000 ft. Lbs. Torque of the engine in both road and pump operating conditions. The drive unit shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature.</p> <p>The gearbox drive shafts shall be of heat treated chrome nickel steel and at least 2-3/4" in diameter, on both the input and output drive shafts. They shall withstand the full torque of the engine in both road and pump operating conditions.</p> <p>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, crown-shaved 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 thrusts.</p> <p>The pump ratio shall be selected by the apparatus manufacturer to give maximum performance with the engine and transmission selected. If drive unit 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.</p>		

Specifications	Bidder Complies	
	Yes	No
<p>Three warning lights shall be provided to alert the operator when the drive unit has fully shifted from road to pump position. Two lights will be located on truck cab instrument panel and the other to be located on the truck pump panel adjacent to the throttle, both with appropriate warning plates.</p> <p>A 3" clapper check valve shall be installed between the suction side of the pump and the tank-to-pump valve. This 3" clapper valve shall remove the possibility of a water surge expanding the booster tank.</p> <p>Pump system shall have a integral discharge manifold system that allows a direct flow of water to all discharge valves.</p> <p>There shall be one (1) vernier throttle mounted on pump panel to control engine RPM's.</p> <p>The pump system and piping shall be engineered for side panel operations. The relief valve control and other control devices shall be located on side mounted operator's pump panel.</p> <p><u>PACKING GLANDS</u></p> <p>The pump shaft shall have only one packing gland located on the inlet side of the pump. It shall be of split design for ease of repacking. The packing gland must be a full circle threaded design to exert uniform pressure on packing and to prevent "cocking" and uneven packing load when it is tightened. It shall be easily adjusted by hand with rod or screwdriver, with no special tools or wrenches required. The packing rings shall be of a unique, permanently lubricated, long life graphite composition and have sacrificial zinc foil separators to protect the pump shaft from galvanic corrosion.</p> <p><u>PUMP MOUNTING</u></p> <p>There shall be extra heavy-duty pump mounting brackets furnished. These shall be bolted to the frame rails in such a position to align the pump so that the angular velocity of the driveline joints will be the same on each end of the driveshaft. This shall assure full capacity performance with a minimum of vibration.</p> <p><u>PUMP PANEL TAGS - COLOR CODED - METAL</u></p> <p>The pump panel tags for all discharges, gauges and controls shall be color-coded and made out of metal. All gauges and controls shall be properly identified with color-coded metal pump panel tags. The color-coded tags shall be affixed with 3M industrial adhesive.</p> <p><u>U.L. TEST POINTS</u></p> <p>An Underwriters Laboratories approved 1/2-speed engine counter shall be located on the pump panel to provide a means to certify the tachometer. In addition, two (2) U.L. test plugs shall be pump panel mounted for testing of vacuum and pressures.</p> <p><u>U.L. CERTIFICATION (1500 GPM)</u></p> <p>The vehicle shall be third party tested and certified by Underwriters Laboratories, Inc. UL testing is recognized as a leading, third party, product safety certification organization for over 100 years. UL has served on the NFPA (National Fire Protection Association) technical committee for over thirty (30) years. The testing organization must meet the following minimum requirements:</p> <ul style="list-style-type: none"> • Must be Nationally recognized testing laboratory recognized by OSHA • Must comply with the ASTM (American Society for Testing Materials) standard E543 "Determining the qualifications for nondestructive testing agencies" • Must have more than forty (40) years of Automotive Fire Apparatus safety testing experience and more than fifteen (15) years of factory aerial device testing and Certification experience • Must not represent, be associated with, or in the manufacture or repair of automotive fire apparatus. • Must provide proof of ten (10) million dollars in excess liability insurance for bodily injury and properly damage combined. 		

Specifications	Bidder Complies	
	Yes	No
<p>The pump shall meet and perform the following test to receive a U.L. Certification.</p> <p>gmp shall deliver the percentage of rated discharges at the pressures indicated below:</p> <ul style="list-style-type: none"> - 100% of rated capacity at 150 psi net pump pressure. - 100% of rated capacity at 165 psi net pump pressure. - 70% of rated capacity at 200 psi net pump pressure. - 50% of rated capacity at 250 psi net pump pressure. <p><u>PUMP CERTIFICATION TEST PLATE</u></p> <p>A permanently affixed plate shall be installed at the pump operator's panel. It shall provide the rated discharge and pressures together with the speed of the engine as determined by the certification test for each unit. It shall also provide the position of the parallel/series pump used and the no load governed speed of the engine as stated by the engine manufacturer on a certified brake horsepower curve.</p> <p>A label shall be provided on the pump operator's panel that states the following: Warning: Death or serious injury might occur if proper operating procedures are not followed. The pump operator as well as individuals connecting supply or discharge hoses to the apparatus must be familiar with water hydraulics hazards and component limitations.</p> <p><u>6" STEAMER INLETS</u></p> <p>Two (2) 6" steamer inlets shall be provided, one (1) left side and one (1) on right side. Both inlets have long handle chrome caps and a 6" screen.</p> <p><u>2-1/2" LEFT SIDE SUCTION</u></p> <p>One (1) 2-1/2" brass valve(s) shall be installed on the left side of the pump panel. The valve shall be fixed pivot design, plumbed to the suction side of the pump with 2-1/2" piping. The control handle shall be located on the side the suction valve. The valve shall come equipped with a chrome plug, chain, brass inlet strainer, a 2-1/2" NST chrome inlet swivel and a 3/4" bleeder/drain valve.</p> <p><u>SUCTION INLET WARNING PLATE</u></p> <p>A warning plate shall be permanently affixed in a location in proximity to the suction inlet. The plate shall state:</p> <p>"WARNING - SERIOUS INJURY OR DEATH COULD OCCUR IF INLET IS SUPPLIED BY A PRESSURIZED SOURCE WHEN THE VALVE IS CLOSED".</p> <p><u>4" TANK TO PUMP</u></p> <p>The tank to pump valve shall be a 4" inline, valve, installed between the water tank and the pump. The valve shall be a Hale quarter turn ball type, fixed pivot design and be constructed of bronze. The control handle shall be a hand-wheel type and installed on the pump operator's panel.</p> <p><u>MASTER DRAIN</u></p> <p>The master drain shall have the capacity to drain the pump. The drain shall be recessed below the side pump panel, with the control located under the side running boards that are properly labeled. The water discharged from the drain shall be routed to drain below the chassis frame rails.</p> <p><u>RELIEF VALVE - ELKHART 40</u></p> <p>There shall be an Elkhart model 40 suction side relief valve provided on the pump system. The relief valve shall be plumbed with high-pressure rubber hose, stainless steel connections and terminate within view of the operator's panel.</p> <p><u>PRESSURE GOVERNOR, MONITORING, and MASTER PRESSURE DISPLAY</u></p>		

Specifications	Bidder Complies	
	Yes	No
<p>Fire Research In Control model TGA102-A00 pressure governor and monitoring display kit shall be installed.</p> <p>The kit shall include a control panel, intake pressure sensor, discharge pressure sensor, buzzer, and cables. The control panel case shall be waterproof and have dimensions not to exceed 4 3/4" high by 9 3/4" wide by 2 3/4" deep. The panel shall have LEDs to indicate PSI mode, RPM mode, OK TO PUMP, and IDLE RPM.</p> <p>The following continuous displays shall be provided:</p> <ul style="list-style-type: none"> • Pump discharge; shown with four daylight bright LED digits more than 1/2" high • Pump Intake; shown with four daylight bright LED digits more than 1/2" high • PSI/RPM setting; shown on an LED bar graph display • Engine RPM; shown with four daylight bright LED digits more than 1/2" high, updated in 10 RPM increments • Oil pressure; shown on an LED bar graph display • Engine coolant temperature; shown on an LED bar graph display • Battery voltage; shown on an LED bar graph display. <p>Inputs to the control panel from the pump discharge and intake pressure sensors shall be electrical. The discharge pressure display shall show pressures from 0 to 600 psi. The intake pressure display shall show pressures from -30 in. Hg to 600 psi.</p> <p>Entire There shall be two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between pressure and RPM modes. When the pump engaged interlock signal is recognized an OK TO PUMP LED will light to indicate throttle ready and the governor shall be in pressure mode, with the engine RPM set to idle. In pressure mode the governor shall automatically regulate the discharge pressure at the level set by the operator. In RPM mode, the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi.</p> <p>The program features shall be accessed via push buttons located on the front of the control panel. The program shall support manual control of pump discharge pressure and RPM settings, field programmable presets, and diagnostic capabilities. Safety features shall include recognition of no water conditions with an automatic programmed response and a push button to return the engine to idle.</p> <p>The pressure governor, monitoring and master pressure display shall be programmed.</p> <p><u>PRIMER</u></p> <p>A Hale model ESP 12 volt positive displacement vane primer shall be installed. The primer shall be electrically driven and conform to the standards outlined in the current NFPA Pamphlet. The system is an oil-less system and environmentally safe. It contains an electric rotary vane type positive displacement primer that operates off 12V or 24V power. The primer motor is totally enclosed to prevent dust, dirt and water from penetrating. The unit is heat constructed of heat treated anodized aluminum, specially coated for wear and corrosion resistance. The control shall be pump panel mounted to operate the priming valve and start the priming motor.</p> <p><u>ENGINE COOLER</u></p> <p>An engine cooler shall be installed, in-line from the discharge side of the pump, and installed in the engine cooling system. There shall be a 3/8", quarter turn valve installed thru the pump panel and shall be clearly labeled.</p> <p><u>PUMP COOLER</u></p> <p>The pump shall have a 3/8" line installed from the pump discharge, to the water tank to cool the pump during long periods of pumping when water is not being discharged. The pump cooler shall be</p>		

Specifications	Bidder Complies	
	Yes	No
<p>controlled from the pump operators panel by a 3/8" valve consisting of a cast bronze body with 1/4 turn chrome plated bronze ball, reinforced Teflon seals, and blow-out-proof stem rated to 600 PSI.</p> <p>The valve shall be installed thru the pump panel and clearly labeled.</p> <p><u>PUMP SHIFT</u> An air operated pump shift shall be installed in the chassis cab to engage the fire pump. Provisions shall be made for placing the pump drive system in operation using controls and switches that are clearly identified and within convenient reach of the operator while in the cab.</p> <p>A green indicator light shall be installed on the cab dash and labeled "Pump Engaged."</p> <p>Where an automatic chassis transmission is provided, a green indicator light in the driving compartment and a green indicator light located at the pump operator's position shall be provided and will be energized when both the pump shift has been completed and the chassis transmission is engaged in pump gear.</p> <p>The light in the driving compartment shall be labeled "OK to pump". The light on the pump operator shall be positioned adjacent to and preferably above the throttle control and shall be labeled "Warning": DO NOT OPEN THROTTLE UNLESS LIGHT IS ON." The green light on the pump operator panel shall be energized when the pump is engaged, the transmission is in the drive position and the parking brake is set.</p> <p><u>PUMP PANEL - HINGED - RIGHT SIDE ONLY</u> The pump panels on the right side of the apparatus shall be hinged to allow accessibility to the pump compartment from outside of the apparatus.</p> <p><u>PUMP COMPARTMENT ACCESS - FRONT OF APPARATUS BODY</u> There shall be one (1) panel provided at the front of the body for access to the pump compartment. The access panel shall have a removable door and shall be manufactured from 3/16" aluminum tread plate.</p> <p><u>TANK FILL</u> There shall be a 3" pump to tank fill line installed, with a 2-1/2" inline bronze valve, The valve shall be controlled at the side pump panel with a chrome push/pull locking "T" handle.</p> <p><u>1-3/4" FRONT JUMP LINE</u> There shall be a 1-3/4" Jump Line installed with a 2" inline bronze valve. The box shall be designed to hold 150' of 1 3/4 "hose with a nozzle attached. The valve shall be controlled at the side pump panel with a chrome push/pull locking "T" handle. The rigid piping will be galvanized steel with flexible high pressure hose, tested to 1200 PSI, using stainless steel couplings. There shall be a 2" NPT x 1-1/2" NST elbow A diamond plate swivel stop shall be installed on the front bumper to ensure that hose does not scuff the cab front.</p> <p><u>1-3/4" DOUBLE CROSSLAY</u> A double crosslay shall be installed on apparatus. Each section of the crosslay shall hold 250' of 1-3/4" double jacket fire hose. Provision shall be made so that repacking of the hose will be accessible to personnel and access will not be impeded.</p> <p>A 1-1/2" mechanical swivel hose connector shall be used in each crosslay to provide access of hose in either direction. Stainless steel rollers with nylon guides shall be mounted on both ends and on both crosslays. Stainless steel scuff plates shall be installed around the crosslay openings to protect the painted surfaces.</p>		

Specifications	Bidder Complies	
	Yes	No
<p>Each crosslay section shall have one 2" bronze valve with 2" high-pressure flexible hose, tested to 1200 PSI, with stainless steel couplings. The crosslay shall be controlled with a chrome-plated push/pull locking "T" handle mounted on the pump panel.</p> <p><u>2-1/2" LEFT SIDE DISCHARGE</u> Two (2) 2-1/2" discharges with a bronze valves shall be located on the left side panel. The valves shall be a quarter turn ball type and fixed pivot design to allow easy operation at all pump pressures. The 2-1/2" outlets shall be equipped with a chrome plated 30-degree elbow terminating with 2-1/2" M NST threads. A chrome cap and chain shall also be supplied. The valves shall be controlled by a chrome plated, push-pull, locking T-handle on the operator's panel. The discharges shall also come equipped with a quarter-turn, 3/4" drain valve.</p> <p><u>2-1/2" RIGHT SIDE DISCHARGE</u> A 2-1/2" discharge with a bronze valve shall be located on the right side panel. The valve shall be a quarter turn ball type and fixed pivot design to allow easy operation at all pump pressures. The 2-1/2" outlet shall be equipped with a chrome plated 30-degree elbow terminating with 2-1/2" M NST threads. A chrome cap and chain shall also be supplied. The valve shall be controlled by a chrome plated, push/pull, locking "T" handle on the operator panel. The discharge shall come equipped with a quarter-turn, 3/4" drain valve.</p> <p><u>3" REAR DISCHARGE</u> There shall be two (2) 3" rear discharges provided using 3" pipe with a chrome 3" F NPT x 3" M NST adapter on the outside end and a chrome cap and chain shall be provided. The 3" outlet shall be equipped with a chrome plated 30-degree elbow terminating with 2-1/2" M NST threads. The rear discharge shall be provided with a bronze inline 3" valve. The valve shall be controlled by a chrome plated, push/pull, locking T-handle mounted on the operator's panel. The valve shall be of the Slo-close design so as not to allow the valve to open or close in less than 3 seconds. The discharge shall come equipped with a quarter-turn, 3/4" drain valve.</p> <p><u>3" DECK GUN DISCHARGE</u> There shall be a 3" deck gun discharge pipe installed in the front bumper. The pipe shall terminate with a 3" F NPT x four (4) bolt flange. The discharge shall be controlled by a 3" inline valve. The valve shall be a quarter turn ball type of fixed pivot design and constructed of bronze. The discharge control handle shall be a chrome push/pull locking "T" handle type located on the operator panel. The valve shall be of the Slo-close design so as not to allow the valve to open or close in less than 3 seconds. The discharge shall be equipped with a quarter-turn, 3/4" drain valve. There shall be a Elkart - Vulcan monitor provided with a 282-A stream shaper and ST-194 stacked tips with the hand wheel operation on the appliance.</p> <p><u>AKRON DISCHARGE AND SUCTION VALVES</u> There shall be Akron 8800 series valves used on all discharges and suction inlets. A polished aluminum trim ring shall be provided around all inlets and discharges.</p> <p><u>SUCTION & DISCHARGE PLUMBING</u> All suction and discharge lines of 2" or larger, shall be constructed of a minimum of Schedule 40 galvanized steel pipe. Where vibration or chassis flexing may damage or loosen piping, the pipe shall be equipped with Victaulic or roustabout couplings. The entire discharge and intake piping system, valves, drain cocks and lines, intake and outlet closures excluding the tank fill and tank to pump lines on the tank side of the valves shall be designed for 500 PSIG. All suction inlets and discharge outlets shall be equipped with National Standard Threads (NST) unless otherwise stated.</p> <p><u>TANK VISION GAUGE</u> The water level gauge shall be a Tank Vision Model WL2000-FER, with nine super bright LED's to show the tank volume. The display shall use a two-dimensional, two-element lens to refract the light</p>		

Specifications	Bidder Complies	
	Yes	No
<p>from the LED's and to provide full 180-degree visibility for the level indications. The gauge shall use a pressure transducer installed near the bottom of the water tank to determine the correct volume in the tank.</p> <p><u>MINIATURE CAB DISPLAY:</u> The in-cab miniature display for water shall be a Tank Vision Model WL2500-FER.</p> <p><u>STANDARD GAUGES</u> The discharges shall have a 2-1/2" white-faced, silicone filled pressure gauge installed on the operator's panel to indicate pressures from 0 to 600 Psi</p> <p><u>PUMP PANEL FUEL GAUGE</u> A 2" weatherproof fuel gauge shall be mounted on pump panel, indicating the amount of fuel in the chassis fuel tank.</p> <p><u>BOOSTER TANK - POLYPROPYLENE</u> The booster tank will have a capacity of 1000 U.S. Gallons complete with a Lifetime Warranty. The tank manufacturer shall mark the tank and furnish notice that indicates proof of warranty. The purpose of the markings and notice is to inform department personnel who store, stock, or use the tank that the unit is under warranty. Markings may be brief but shall include a short statement that a warranty exists, the substance of the warranty, its duration, and who to notify if the tank is found to be defective.</p> <p><u>CONSTRUCTION</u> The tank will be <u> </u> shaped and constructed of 1/2" thick polypropylene sheet stock. This material shall be a non-corrosive stress relieved thermoplastic and U.V. Stabilized for maximum protection. The booster tank shall be of a specified configuration and is designed to be completely independent of the body and compartments. All joints and seams are nitrogen welded and tested for maximum strength and integrity. The top of the tank is fitted with removable lifting eyes de-signed with a 3 to 1 safety factor to facilitate easy removable. The transverse swash partitions shall be manufactured of 3/8" polypropylene and extend from approximately 4" off the floor to just under the cover. The longitudinal swash partitions shall be constructed of 3/8" polypropylene 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.</p> <p><u>FILL TOWER AND COVER</u> The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of 1/2" polypropylene and shall be a minimum dimension of 12" x 12" outer perimeter. The tower shall be located in the left front corner of the tank unless otherwise specified by the purchaser. The tower shall have a 1/4" thick removable polypropylene screen and a polypropylene hinged-type cover. The combination vent-overflow pipe shall be fastened to the inside the fill tower, approximately 4" down from the top. The vent overflow shall be a minimum of schedule 40 polypropylene pipe with a minimum ID of 4" that is designed to run through the tank, and shall be piped behind the rear wheels so to maximize traction.</p> <p>The tank cover shall be constructed of 1/2" thick polypropylene and UV stabilized, to incorporate a multi three-piece locking 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 is to 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 will assist in keeping the covers rigid under fast filling conditions. A minimum of two (2) lifting dowels shall be drilled and tapped 1/2" x 13" to accommodate the lifting eyes.</p>		

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	Yes	No
<p><u>SUMP</u> There shall be one (1) sump standard per tank. The sump shall be constructed of 1/2" polypropylene and be located in the left front quarter of the tank, unless specified otherwise. On all tanks that require a front suction, a 3" schedule 40 polypropylene pipe shall be installed that will incorporate a dip tube from the front of the tank to the sump location. The sump shall have a minimum 3" NPT threaded outlet on the bottom for a drain plug. This shall be used as a combination clean-out and drain. All tanks shall have an anti-swirl plate located approximately 2" above the sump.</p> <p><u>OUTLETS</u> There shall be two (2) standard tank outlets: one for the tank-to-pump suction line, which shall be a minimum of 3" NPT coupling; and, one for a tank fill line, which shall be a minimum of 1" NPT coupling. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 1,000 GPM The addition of rear suction fittings, nurse valve fittings, dump valve fittings, and sleeves through tank to accommodate rear discharge piping must be specified. All auxiliary outlets and inlets must meet all NFPA 1900 guidelines in effect at the time of manufacture.</p> <p><u>MOUNTING</u> The tank shall rest on the body cross members in conjunction with such additional cross members, spaced at a distance that would not allow for more than 530 square inches of unsupported area under the tank floor. In cases where overall height of the tank exceeds 40 inches, cross member spacing must be decreased to allow for not more than 400 square inches of unsupported area. The tank must be isolated from the cross members through the use of hard rubber strips with, a minimum thickness and width dimension of .250" x 2" and a minimum Rockwell Hardness of 60 durometer. Additionally, the tank must be supported around the entire bottom outside perimeter and captured both front and rear as well as side-to-side to prevent the tank from shifting during vehicle operation. The tank shall sit cradle mounted using four (4) corner angles of 4" x 4" x .250" thickness x 6" high welded directly to the body cross members. The entire perimeter of the bottom of the tank shall be supported. Although the tank is designed on the free-floating suspension principle, it shall be required that the tank have hold down restraints to minimize movement during vehicle operation. These restraints shall be mounted to the sidewalls of the hose bed and extend down so that they rest approximately 1/2" above the top of the tank. The foot of the restraint does not directly contact the top of the tank. Hosebed flooring shall be designed so that the floor (slat) supports extend front to rear and side-to-side not permitting hose to drop off the edge of the tank or in any way are exposed to the individual covers where a puncture could occur. The hose floor loading shall support up to 200 lbs per square foot and is to be evenly distributed whenever possible. The tank shall be completely removable without disturbing or dismantling the apparatus structure.</p> <p><u>INTAKE RELIEF VALVE</u> An Elkhart relief valve shall be installed on the suction side of the pump preset at 125 psig. Relief valve shall have a working range of 75 psig to 250 psig. Outlet shall terminate below the frame rails with a 2.50" National Standard hose thread adapter and shall have a "do not cap" warning tag. Control shall be located behind an access door at the right (passenger's) side pump panel.</p> <p><u>PRESSURE RELIEF VALVE</u> The pump shall have a Hale manual pressure relief valve</p> <p><u>THROTTLE CONTROL</u></p>		

Specifications	Bidder Complies	
	Yes	No
<p>A FRC – Throttlexcel control will be supplied to adjust pump rpm/pressure</p> <p><u>HALE ESP PRIMING PUMP</u> Priming pump shall be a positive displacement vane type, electrically driven, and conforming to standards outlined in NFPA pamphlet #1901.</p> <p>One (1) priming control shall both open the priming valve and start the priming motor.</p> <p>Primer shall be environmentally safe, self lubricating style.</p> <p><u>VALVE TAGS</u> Color coded tags to match the pump panel controls shall be supplied on the plumbing valves. The tags shall be attached to small plates on the valve that corresponds to the control at the pump panel.</p> <p><u>PLUMBING</u> All inlet and outlet plumbing shall be plumbed with unpainted stainless steel pipe or synthetic rubber hose reinforced with high-tensile polyester braid. Small diameter secondary plumbing such as drain lines shall be stainless steel, brass or hose.</p> <p>Where vibration or chassis flexing may damage or loosen piping or where a coupling is required for servicing, the piping shall be equipped with victaulic or rubber couplings.</p> <p>Plumbing manifold bodies shall be ductile cast iron or stainless steel.</p> <p>All lines shall drain through a master drain valve or shall be equipped with individual drain valves. All individual drain lines for discharges shall be extended with a hose to drain below the chassis frame.</p> <p>All water carrying gauge lines shall be of flexible polypropylene tubing.</p> <p><u>VALVES</u> All ball valves shall be Akron Brass in-line valves. The Akron valves shall be the 8000 series heavy-duty style with a stainless steel ball and a simple two-seat design. No lubrication or regular maintenance is required on the valve.</p> <p>Valves shall have a ten (10) year warranty.</p> <p><u>OUTLET BLEEDER VALVE</u> A .75" bleeder valve shall be provided for each outlet 1.50" or larger. Automatic drain valves are acceptable with some outlets if deemed appropriate with the application.</p> <p>The valves shall be located behind the panel with a swing style handle control extended to the outside of the side pump panel. The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. Bleeders shall be located at the bottom of the pump panel. They shall be properly labeled identifying the discharge they are plumbed in to. The water discharged by the bleeders shall be routed below the chassis frame rails.</p> <p>The elbow shall be the VLH, which incorporates a patent pending thread design to automatically relieve stored pressure in the line when disconnected. (NO EXCEPTIONS)</p> <p><u>PUMP CONTROL PANEL</u> The gauge and control panels shall be designed for ease of maintenance.</p>		

Specifications	Bidder Complies	
	Yes	No
<p>All push/pull valve controls shall have 1/4 turn locking control rods with polished chrome plated zinc tee handles. Guides for the push/pull control rods shall be chrome plated zinc castings securely mounted to the pump panel. Push/pull valve controls shall be capable of locking in any position. The control rods shall pull straight out of the panel and shall be equipped with universal joints to eliminate binding.</p> <p>The identification tag for each valve control shall be recessed in the face of the tee handle. All discharge outlets shall have color coded identification tags, with each discharge having its own unique color. Color coding shall include the labeling of the outlet and the drain for each corresponding discharge.</p> <p>All line pressure gauges shall be mounted in individual chrome plated castings with the identification tag recessed in the casting below the gauge. All remaining identification tags shall be mounted on the pump panel in chrome plated bezels. Mounting of the castings and identification bezels shall be done with a threaded peg cast on the back side of the bezel or screws.</p> <p><u>PUMP PANEL CONFIGURATION</u> The pump panel configuration shall be neat and orderly.</p> <p><u>PUMP AND GAUGE PANEL</u> The pump and gauge panels shall be constructed, to allow easy identification of the gauges and controls and to eliminate glare.</p> <p><u>PUMP PANEL GAUGES AND CONTROLS</u> The following shall be provided on the pump and gauge panels in a neat and orderly fashion:</p> <ul style="list-style-type: none"> - Engine Oil Pressure Gauge: With visual and audible warning - Engine Water Temperature Gauge: With visual and audible warning - Tachometer: Electric - Master Pump Drain Control - Voltmeter - Check Transmission Warning Indicator Light - Stop Engine Warning Indicator Light - Check Engine Warning Indicator Light. <p><u>ELECTRIC GAUGE HEATER</u> An electric gauge heater shall be provided for all water carrying gauges.</p> <p><u>PUMP OVERHEAT INDICATOR</u> A pump overheat indicator shall be installed at the pump operator's panel.</p> <p>This indicator shall be both a visual and audible type.</p> <p><u>GAUGES, VACUUM and PRESSURE</u> The pump vacuum and pressure gauges shall be silicone filled and manufactured by Class 1, Inc.</p> <p>The gauges shall be a minimum of 4.00" in diameter and shall have white faces with black lettering,</p>		

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	Yes	No
<p>with a pressure range of 30.00"-0-600#.</p> <p>Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.</p> <p>The pump pressure and vacuum gauges shall be installed adjacent to each other at the pump operator's control panel.</p> <p>Test port connections shall be provided at the pump operator's panel. One shall be connected to the intake side of the pump, and the other to the discharge manifold of the pump. They shall have 0.25 in. standard pipe thread connections and polished stainless steel plugs. They shall be marked with a label.</p> <p>This gauge shall include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.</p> <p><u>PRESSURE GAUGES</u> The individual "line" pressure gauges for the discharges shall be interlube filled and manufactured by Class 1.</p> <p>They shall be a minimum of 2.50" in diameter and shall have white faces with black lettering.</p> <p>Gauges shall have a pressure range of 0-400#.</p> <p>The individual pressure gauge shall be installed as close to the outlet control as practical.</p> <p><u>GALLONS PER MINUTE GAUGE</u> A electronic gauge shall be mounted on the operators panel that will measure the total Gallons per Minute Flowing from the pump.</p> <p style="text-align: center;">SECTION VIII PAINT & STRIPING</p> <p><u>PAINT</u> The exterior custom cab and body painting procedure shall consist of a _____step finishing process as follows:</p> <p>1. <u>Manual Surface Preparation</u> - 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.</p> <p>2. <u>Chemical Cleaning and Treatment</u> - 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</p>		
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Specifications	Bidder Complies	
	Yes	No
<p>final rinse shall be applied to all metal surfaces, excluding undercarriage components, at the conclusion of the metal treatment process.</p> <p>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.</p> <p>The upper section shall be painted White #PPG-FBCH-909088 and lower section of the cab and body painted Medium Red #PPG-FBCH-913244. The paint scheme will match existing apparatus in the Torrington Fire Department Fleet.</p> <p><u>PAINT - ENVIRONMENTAL IMPACT</u> Contractor shall meet or exceed all current State (his) regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water and soil.</p> <p>Additionally, the finished apparatus shall not be manufactured with or contain products that have ozone depleting substances. Contractor shall, upon demand, present evidence that his manufacturing facility meets the above conditions and that it is in compliance with his State EPA rules and regulations.</p> <p><u>PAINT CHASSIS FRAME ASSEMBLY</u> The chassis frame assembly shall be painted black before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, etc. Components that are included with the chassis frame assembly that shall be painted black are frame rails, cross members, axles, suspension, steering gear, fuel tank, body substructure supports, miscellaneous mounting brackets, etc.</p> <p><u>PAINT, WHEELS</u> The outer wheel surfaces shall be painted job color Medium Red PPG-FBCH-913244 to match the exterior truck color. The rear dual wheel shall only have the outside surface of the exterior wheel painted job color. The interior dual wheel shall not be painted job color.</p> <p><u>COMPARTMENT INTERIOR FINISH</u> The interior of the body compartments shall be left unpainted and have the natural finish.</p> <p><u>REFLECTIVE BAND</u> A 5.00" reflective band shall be provided across the front of the vehicle and along the sides of the body. A 4.00" band shall be provided at the rear of the apparatus. The band design shall be applied to resemble the current design on the existing pumpers in service. The reflective band provided on the cab face shall be at the headlight level.</p> <p><u>CHEVRON/INVERTED "V" STRIPING ON REAR BULKHEADS</u> There shall be alternating chevron striping located on the rear bulkheads.</p> <p>The striping shall consist of the following colors: The first color shall be white diamond grade The second color shall be blue diamond grade</p> <p>The size of the striping shall be 8.00"</p> <p><u>DOOR WARNING – CHEVRON</u> Four (4) Chevron reflective signs shall be installed on the lowest portion of the inner door panels, one (1) on each door. A stripe of reflective tape shall be installed at the outer edge of each door.</p>		

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	Yes	No
<p><u>LETTERING</u> The lettering shall be totally encapsulated between two (2) layers of clear vinyl.</p> <p><u>LAMINATION WARRANTY</u> The manufacturer shall provide a three (3) year warranty against defects in material and workmanship with the graphics process. A copy of the fire apparatus manufacturer's warranty shall be included with the bid.</p> <p><u>LETTERING</u> Forty-one (41) to sixty (60) genuine gold leaf lettering, 3.00" high, outlining and shading shall be provided. There shall be identification of the vehicle affixed to the rear of the vehicle in reflective material. ie. (E-1) (color red)</p> <p><u>DECAL INSTALLATION</u> There shall be one (1) pair of decals furnished by the fire department and applied by the apparatus manufacturer.</p> <p><u>ITEMS TO BE OPTIONED PRICED:</u></p> <ol style="list-style-type: none"> 1) David Clark series 3800 vehicle intercom system – 4 person engine with pump panel 2) Firecom 4 person, 5 position configuration 3010R Intercom system 3) The cost of a factory preconstruction, mid- construction inspection, and final inspection conference for 3 representatives from the Torrington Fire Department. <p>Equipment Supplied by the Torrington Fire Department All hose will be supplied by the Torrington Fire Department, as well as all loose tools, hooks, pike poles, extinguishers.</p> <p>The Torrington Fire Department will be responsible for mounting their equipment</p> <p>Any equipment that needs to be supplied with the vehicle shall be specified in the bid</p>		