



CITY OF TORRINGTON
REQUEST FOR BID

BID #FVT-022-080310
FIRE SERVICE VACUUM TANKER

Date of bid opening: **August 3, 2010** Time: **11:00AM** Location: **140 Main Street, Room 206**

Bid Bond or Certified Check required with bid: **10%**

Performance Bond required if awarded bid: **100%**

Submit an original and three (3) copies of bid.

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: July 8, 2010 Purchasing Agent _____
Pennie Zucco

ITEM	PRICE
VACUUM TANKER PER ATTACHED SPECIFICATIONS	\$ _____

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 _____

Signature

Phone _____ Fax _____

Title

Delivery Date _____

Date

E-mail address _____

Web Page

Comments: _____

INSTRUCTIONS TO BIDDERS

Sealed bids will be received by the Purchasing Agent, Room 206, 140 Main St., Torrington, CT until the time and date specified on the cover sheet and opened thereafter in the Purchasing Department, Room 206. 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. 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, package 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.

OPTION TO RENEW: This contract may be extended for three (3) additional one (1) year periods, provided all terms and conditions remain in full force and effect except for the contract period being extended. This option, if exercised, is to be executed in the form of a letter of agreement, to be issued no later than 30 days prior to the expiration of the then current contract period. This option to renew requires the mutual agreement of both parties. Refusal by either party to exercise this option to extend, will cause this contract to expire on the original or mutually agreed upon date. The total period of this contract, including all extensions as a result of exercising this option, will not exceed a maximum combined period of five (5) years.

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.

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 _____

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

Specifications

**Bidder
Complies**

Yes No

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Specifications

Bidder Complies

Yes No

SPECIFICATIONS FOR A FIRE SERVICE VACCUUM TANKER

INTENT OF SPECIFICATIONS

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 with this type of Vehicle 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.

Interested vendors are requested to submit an original and three (3) copies to the Office of the Purchasing Agent, 140 Main Street, Room 206, Torrington, CT 06790, during normal office hours by no later than Tuesday, August 3, 2010 at 11:00 AM. Envelopes should be clearly marked: "**BID #FVT-022-080310, FIRE SERVICE VACUUM TANKER**". Bids received after this date and time will be rejected. Questions must be submitted by July 22, 2010 by 12:00 noon. All questions should be submitted by email to pennie_zucco@torringtonct.org. Questions will be answered through an addendum which will be posted on the City of Torrington website. Interested vendors should check the website 48 hours before the opening date. Vendors mailing proposals should allow for normal delivery time to ensure timely receipt of their bids. **Bids may not be submitted by e-mail.**

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

Specifications	Bidder Complies	
	Yes	No
<p>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.</p> <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>DRAWINGS</u> A CAD produced line drawing of the exact apparatus being proposed must be furnished with the bid. Since the blueprint drawing is required of all bidders, any bid submitted without a drawing as specified will be considered non-responsive and automatically rejected. Drawing must include the left side with chassis cab, right, rear, and top views of the vehicle. Drawing must be a large size "D", and shall be a drawing of exact apparatus as proposed, not a drawing of another similar unit. All submitted drawings will become a part of the bid proposal.</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>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>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>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>D) The apparatus, fully loaded, shall be capable of obtaining a speed of 60 mph on a level</p>		

Specifications	Bidder Complies	
	Yes	No
<p style="text-align: center;">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> 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.</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 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. 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 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><u>COMMERCIAL GENERAL LIABILITY INSURANCE</u> The successful bidder shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of commercial general</p>		

Specifications	Bidder Complies													
	Yes	No												
<p>liability insurance:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Products/Completed Operations Aggregate</td> <td style="text-align: right;">\$1,000,000</td> </tr> <tr> <td>Personal and Advertising Injury</td> <td style="text-align: right;">\$1,000,000</td> </tr> <tr> <td>Each Occurrence</td> <td style="text-align: right;">\$1,000,000</td> </tr> </table> <p>Coverage shall be written on a Commercial General Liability form. The policy shall be written on an occurrence form and shall include Contractual Liability coverage for bodily injury and property damage subject to the terms and conditions of the policy. The policy shall include owner as an additional insured when required by written contract.</p> <p><u>COMMERCIAL AUTOMOBILE INSURANCE</u> The successful bidder shall, during the performance of the contract keep in force at least the following minimum limits of commercial automobile insurance:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Combined Single Limit:</td> <td style="text-align: right;">\$1,000,000</td> </tr> </table> <p>Coverage shall be written on a Commercial Automobile form.</p> <p><u>UMBRELLA/EXCESS LIABILITY INSURANCE</u> The successful bidder shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of umbrella liability insurance:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Aggregate:</td> <td style="text-align: right;">\$25,000,000</td> </tr> <tr> <td>Each Occurrence:</td> <td style="text-align: right;">\$25,000,000</td> </tr> </table> <p>The umbrella policy shall be written on an occurrence basis and at a minimum provide excess to the Bidder's General Liability, Automobile Liability and Employer's Liability policies. Owner shall be included as an additional insured on the General Liability policy as their interest may appear.</p> <p>The required limits can be provided by one or more policies provided all other insurance requirements are met.</p> <p>Coverage shall be provided by a carrier(s) rated A- or better by A.M. Bests.</p> <p>Bidder agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with its bid. The certificate shall show the city as certificate holder. The Certificate of Insurance shall provide the following cancellation clause: Should any of the above described policies be cancelled before the expiration date thereof, the issuing insurer will endeavor to mail 30 days written notice to the certificate holder named to the left, but failure to do so shall impose no obligation or liability of any kind upon the insurer, its agents or representatives.</p> <p><u>ISO COMPLIANCE</u> The manufacturer shall operate a Quality Management System under the requirements of ISO 9001. These standards sponsored by the "International Organization for Standardization (ISO)" specify the quality systems that shall be established by the manufacturer for design, manufacture, installation and service. A copy of the certificate of compliance shall be included with the bid.</p> <p><u>NFPA STANDARDS</u> This unit must comply with the NFPA standards effective at time of contract execution.</p> <p>Certification of slip resistance of all stepping, standing and walking surfaces must be supplied with delivery of the apparatus.</p>	Products/Completed Operations Aggregate	\$1,000,000	Personal and Advertising Injury	\$1,000,000	Each Occurrence	\$1,000,000	Combined Single Limit:	\$1,000,000	Aggregate:	\$25,000,000	Each Occurrence:	\$25,000,000		
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Aggregate:	\$25,000,000													
Each Occurrence:	\$25,000,000													

Specifications	Bidder Complies	
	Yes	No
<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>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>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.</p> <p><u>BID BOND</u> All bidders shall provide a bid bond as security for the bid in the form of a 10% bid bond to accompany their bid. This bid bond shall be issued by a Surety Company who is listed on the U.S. Treasury Departments list of acceptable sureties as published in Department Circular 570. The bid bond shall be issued by an authorized representative of the Surety Company and shall be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond shall include language, which assures that the bidder/principal shall give a bond or bonds as may be specified in the bidding or contract documents, with good and sufficient surety for the faithful performance of the contract, including the Basic One (1) Year Limited Warranty, and for the prompt payment of labor and material furnished in the prosecution of the contract.</p> <p>Proposals received from bidders who do not manufacture the chassis shall provide a warranty that shall be issued jointly and severally by, and signed by, both the bidder and the chassis manufacturer.</p> <p>If the successful bidder does not manufacture the chassis, the bidder shall supply a warranty bond, in addition to their performance bond, along with their signed contract. This warranty bond shall guarantee all terms and conditions of the Basic One (1) Year Limited Warranty and names both the bidder and chassis manufacturer as co-principals. This warranty bond shall be issued for the contract amount and shall remain in force for a term which is consistent with the term of the Basic One (1) Year Limited Warranty.</p> <p>Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle shall apply only to the Basic One (1) Year Limited Warranty for such vehicle. Any surety bond related to the sale of a vehicle shall not apply to any other warranties that are included within this bid (OEM or otherwise) or to the warranties (if any) of any third party of any part, component, attachment or accessory that is incorporated into or attached to the vehicle. In the event of any contradiction or inconsistency between this provision and any other document or assertion, this provision shall prevail.</p> <p><u>PERFORMANCE BOND</u> Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle shall apply only to the Basic One (1) Year Limited Warranty for such vehicle. Any surety bond related to the sale of a vehicle shall not apply to any other warranties that are included within this bid (OEM or otherwise) or to the warranties (if any) of any third party of any part, component, attachment or accessory that is incorporated into or attached to the vehicle. In the event of any contradiction or inconsistency between this provision and any other document or assertion, this provision shall prevail.</p>		

Specifications	Bidder Complies	
	Yes	No
<p><u>SECTION II</u> <u>WARRANTIES/SERVICE MANUALS</u></p> <p><u>WARRANTY</u> 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. 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> <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>STEERING WARRANTY</u> The steering gear shall have a three (3) year parts & 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</p>		

Specifications	Bidder Complies	
	Yes	No
<p>labor. The warranty is to be provided by Allison Transmission and not the apparatus builder.</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><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 original purchaser.</p> <p><u>PUMP WARRANTY</u> There shall be a pump warranty to include parts and labor for a period of two (2) years. Valves shall have a ten (10) year warranty.</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>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 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</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>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>		

Specifications	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> - Job number - Table of contents - Troubleshooting - Front Axle/Suspension - Brakes - Engine - Tires - 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>A copy of the fire apparatus manufacturer's warranty shall be included with the bid.</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.</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>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>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>		

Specifications	Bidder Complies	
	Yes	No
<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>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><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>		

Specifications	Bidder Complies	
	Yes	No
<p><u>SECTION III</u> <u>CAB & CHASSIS</u></p> <p><u>CHASSIS</u> The Chassis provided shall be an International 7600 series chassis. 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. It is preferred that the Chassis be purchased through Marola Motors Sales, Inc, 900 South Main St., Torrington CT., (860)489-3119. The contact person will be John Russel at Marola Motors.</p> <p>The Chassis must be compliant with National Fire Association Standard 1901, 2009 Edition. Chassis must be capable of carrying specified load of tank, water and required equipment balanced between front and rear axles. Documentation shall be submitted with proposal showing expected load on axles.</p> <p><u>SEATING CAPACITY</u> The seating capacity in the cab shall be a minimum two (2)</p> <p><u>WHEELBASE</u> The wheelbase of the vehicle shall be no greater than 258"</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>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 frame rails shall be constructed of 120,000 psi yield strength heat-treated 10.866 x 3.622 x .433 minimum. The frame rails including liners will be powder coated and/or painted prior to assembly.</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 minimum rating of 20,000 lbs</p> <p><u>FRONT AXLE CRAMP ANGLE</u> The cramp angles for the vehicle will be listed with the size tires used for comparison</p>		

Specifications	Bidder Complies	
	Yes	No
<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 InterLube Chassis System or equivalent, 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 that the lubrication needs and the number of grease points for their equipment are met.</p> <p><u>REAR AXLE</u> The rear axle shall be tandem single reduction with a capacity rating of 46,000 lbs differential with driver controlled differential lock.</p> <p>The gear ratio shall be:</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> 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>		

Specifications	Bidder Complies	
	Yes	No
<p><u>ENGINE</u> <u>The chassis shall be powered by an International Diesel engine: (PREFERRED)</u></p> <ul style="list-style-type: none"> - Model: MaxxForce 13 Diesel, 4 cycle - Number of Cylinders: Inline 6-cylinder - Bore and Stroke: 4.96 in. & 6.54 in. (12.6cm & 16.6 cm) - Displacement: 12.4L (758 cu in.) - Minimum Horsepower: 475 HP min - Compression Ratio: 16.5.1 <p><u>Standard equipment on the engine shall include the following:</u></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><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:</p> <ul style="list-style-type: none"> - Diesel Particulate Filter (DPF) - High Exhaust Temperature (HET) <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</p>		

Specifications	Bidder Complies	
	Yes	No
<p>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></p> <p>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></p> <p>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></p> <p>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></p> <p>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> <p><u>RADIATOR</u></p> <p>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>		

Specifications	Bidder Complies	
	Yes	No
<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)</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. 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> 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.</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>		

Specifications	Bidder Complies	
	Yes	No
<p><u>ONSPOT 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>Two (2) smoked Lexan sun visors, 8.75" x 31.00" long, shall be provided. The sun visors 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><u>MIRRORS</u> A Moto Mirror-Plus 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 shall be heated and adjustable remotely. There shall be no vibration of the mirrors at idle.</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. 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 tow eyes shall not be used for lifting of the apparatus. The inner and outer edges of the tow eyes shall have a 0.25" radius. The lift and tow mounts with eyes shall be painted the same color as the frame.</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.</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, vinyl texture paint.</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 or equivalent shall be provided in the cab for the driver. The driver's seat shall be furnished with three (3)-point shoulder type seat belt. The</p>		

Specifications	Bidder Complies	
	Yes	No
<p>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></p> <p>A Seats Incorporated 911 SCBA seat with high-back or equivalent shall be provided in the cab for the officer. 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>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 re-bolting in the desired location.</p> <p><u>UNDERSEAT COMPARTMENT</u></p> <p>A compartment shall be provided under the officer's seat. The inside compartment dimensions shall be X" deep x X" across x X" high. A drop-down door with a chrome plated lift and turn latch shall be provided for access. The compartment shall be constructed of smooth aluminum and painted to match the cab interior.</p> <p><u>SEAT UPHOLSTERY</u></p> <p>All seat upholstery shall be gray woven with black Imperial 1200 material or equivalent.</p> <p><u>EXTINGUISHER BRACKET</u></p> <p>A bracket to hold a customer supplied extinguisher to be installed the location to be determined at preconstruction meeting.</p> <p><u>INDICATOR LIGHT</u></p> <p>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.</p> <p>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:</p> <p style="padding-left: 40px;">Parking brake engaged:</p> <p style="padding-left: 80px;">The indicator light shall be active (steady)</p> <p style="padding-left: 80px;">The audible alarm shall be inactive</p> <p style="padding-left: 80px;">The Seat Belt Screen shall indicate the position(s) of unbelted occupants (manual selection of the Seat Belt Screen is required)</p> <p style="padding-left: 40px;">Ignition switch on and parking brake disengaged:</p> <p style="padding-left: 80px;">The Indicator Light shall operate as follows:</p> <p style="padding-left: 120px;">Flash for the first 30 seconds</p> <p style="padding-left: 120px;">Remain active (not flashing) for the next 60 seconds</p> <p style="padding-left: 120px;">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>		

Specifications	Bidder Complies	
	Yes	No
<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 two (2) seats that contain the seat belt not buckled feature.</p> <p style="text-align: center;"><u>SECTION IV</u> <u>ELECTRICAL/LIGHTING</u></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>ELECTRICAL SYSTEM</u> Electrical equipment installed by the apparatus manufacturer shall conform to current automotive system standard, the latest Federal DOT standards, and the requirements of the applicable NFPA Apparatus Standard.</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. - One (1) Adjustable Map Light <p><u>STEP LIGHTS</u> For reduced overall maintenance costs compared to incandescent lighting, there shall be Two (2) LED step lights provided. The lights shall be installed at each cab door, one (1) per step: in the driver side front doorstep, and passenger side front doorstep. The lights shall be activated when the adjacent door is opened.</p> <p><u>HVAC SYSTEM</u> The cab shall be equipped with air conditioning to sufficiently cool the cab during the most extreme temperature months.</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><u>CONTROL SWITCHES</u></p>		

Specifications	Bidder Complies	
	Yes	No
<p>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><u>Ignition switch:</u> 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><u>Momentary engine start switch:</u> For ease of use in low light conditions, an integral red indicator light shall activate with the battery switch.</p> <p><u>Headlight/Parking light switch:</u> 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>Turn signal arm: Self canceling turn signal</p> <p>Wiper controls: Wash function Hi/Low/Intermittent (4 speeds)</p> <p>Hazard switch shall be incorporated into the steering column.</p> <p>Parking brake control</p> <p>Chassis horn control shall be provided in the center of the steering wheel</p> <p>Audible steady tone warning alarm</p> <p><u>Audible pulsing tone caution alarm:</u> 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></p> <p>A diagnostic panel shall be accessible while standing on the ground and located inside the driver's side door left of the steering column. The diagnostic panel shall allow diagnostic tools such as computers to connect to various vehicle systems for improved troubleshooting providing a lower cost of ownership.</p> <p><u>SWITCHES</u></p> <p>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></p> <p>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.</p> <p><u>RADIO ANTENNA MOUNT</u></p> <p>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 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>		

Specifications	Bidder Complies	
	Yes	No
<p>The radio will be supplied and installed by the City. There shall be an external speaker and microphone compartment in the area of pump module for the customer to mount their speaker and microphone.</p> <p><u>MDT- Panasonic Toughbook: (NO EXCEPTIONS)</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>The MDT shall be mounted in the area of the officers' seat so it can be easily accessed while seat belted. The MDT shall be supplied with the vehicle. The Torrington Fire Department purchases their MDT's through Telerepco, 1-800-537-0509 or 203-284-0566.</p> <p><u>SWITCH PANELS</u> 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 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. 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></p>		

Specifications	Bidder Complies	
	Yes	No
<p>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> Three (3) 12 volt, 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 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></p>		

Specifications	Bidder Complies	
	Yes	No
<p>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. 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> <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></p>		

Specifications	Bidder Complies	
	Yes	No
<p>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>ELECTRICAL HARNESSING INSTALLATION</u></p> <p>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 vehicles, trucks and buses 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 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. 		

Specifications	Bidder Complies	
	Yes	No
<p>(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.</p> <p>(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.</p> <p>(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.</p> <p>(6) Any lights containing non-waterproof sockets in a weather-exposed area shall have corrosion preventative compound added to the socket terminal area.</p> <p>(7) All electrical terminals in exposed areas shall have DOW 1890 protective Coating applied completely over the metal portion of the terminal.</p> <p>(8) Rubber coated metal clamps shall be used to support wire harnessing and battery cables routed along the chassis frame rails.</p> <p>(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.</p> <p>(10) All braided wire harnesses shall have a permanent label attached for easy identification of the harness part number and fabrication date.</p> <p>(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> <p><u>BATTERY CABLE INSTALLATION</u> 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> <p>(1) All battery cables and battery harnesses shall have a permanent label attached for easy identification of the harness part number and fabrication date.</p> <p>(2) Splices shall not be allowed on battery cables or battery cable harnesses.</p> <p>(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.</p> <p>(4) For ease of identification, all positive battery cable isolated studs throughout the cab and chassis shall be red in color.</p> <p>(5) For increased reliability and reduced maintenance, all electrical buss bars located on the exterior of the apparatus shall be coated to prevent corrosion.</p> <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 city at time of delivery.</p>		

Specifications	Bidder Complies	
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<p><u>EXTERIOR LIGHTING</u> 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. 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>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>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:</p> <ul style="list-style-type: none"> 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>All the lenses shall be clear.</p> <p>Two (2) switches located in the cab, on the switch panel, shall control this lightbar.</p> <ul style="list-style-type: none"> One (1) switch shall control all the warning lights One (1) switch shall control the Opticom <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:</p> <ul style="list-style-type: none"> 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>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 warning lights shall be located at the rear of the apparatus, required to meet or exceed the lower level optical warning and optical power</p>		

Specifications	Bidder Complies	
	Yes	No
<p>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></p> <p>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. The color of these lights shall be red Super LED/red lens.</p> <p style="padding-left: 40px;">Two (2) Whelen model 60*02F*R Super LED lights shall be located in the rear. 600 LEDs are to be located approximately 2' ft. below the Upper 900 LEDs and will be provided with 6E or flange kit. The color of these lights shall be red super LED/red lens.</p> <p>64</p> <p>The following lights shall be provided at the front and rear side upper corners of the side of the truck each side (Upper zone B and D):</p> <p style="padding-left: 40px;">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</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>TRAFFIC ADVISOR</u></p> <p>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></p> <p>The headlights shall have a switch so when they are responding in the emergency mode they will alternate (wig/wag)</p> <p><u>REAR FMVSS LIGHTING</u></p> <p>The rear stop/tail and directional lighting shall consist of the following:</p> <p style="padding-left: 40px;">Two (2) Whelen model 60R00BRR red LED stop/tail lights.</p> <p style="padding-left: 40px;">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>		

Specifications	Bidder Complies	
	Yes	No
<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. 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-Lites: Model: 60115Y, Amber, LED, turn signal, marker lights furnished, one (1) each side, horizontally in the rear fender panel. A stainless steel trim shall be included with this installation.</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. A .125" weep hole shall be provided in each light lens, preventing moisture retention.</p> <p><u>PERIMETER SCENE LIGHTS, BODY</u> There shall be a total of four (4) Truck-Lites: 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><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>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. Opening the compartment door shall automatically turn the compartment lighting on.</p>		

Specifications	Bidder Complies	
	Yes	No
<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 TELESCOPIC SCENE LIGHTING</u> Two (2) Whelen model PFP2 dual lamp super LED lights will be provided. There shall be one (1) mounted on each side of the apparatus. One (1) shall be mounted to the rear of the cab on each side.</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. The mechanical siren shall be recessed in the front bumper in the center. The siren shall be supported by the bumper framework. The mechanical siren shall be actuated by a push button similar to the foot type and located on the officer side.</p> <p><u>HAND LIGHTS</u> Two (2) Streamlight(s) Fire Vulcan LED light boxes installed where specified and wired to the chassis 12 volt system.</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. 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</p>		

Specifications	Bidder Complies	
	Yes	No
<p>spring loaded to close, preventing water from entering when the shoreline is not connected. 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>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.</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>CAMERA SYSTEM</u> To enhance safety during driving and portable tank operations a camera system shall be provided. The camera system shall include a cab mounted monitor that shall be within clear view of the driver and two (2) cameras. The cameras shall be located one (1) on the officer side of the tank and one (1) at the rear of the tank. The camera located at the rear shall also operate when the chassis transmission is placed in reverse.</p>		

Specifications	Bidder Complies	
	Yes	No
<p><u>SECTION V</u> <u>APPARATUS BODY</u></p> <p><u>BODY COMPARTMENTS</u> There shall be two (2) body compartments located one (1) on each side forward of the rear axle. The size shall be approximately 65" wide x 26"high x 26" deep.</p> <p>There shall be one (1) storage cabinet provided on the driver's side of the apparatus. The storage cabinet shall be in the upper area above the lower body compartment. It shall be used to store the drivers gear and related equipment.</p> <p>Each compartment shall include louvers for adequate ventilation.</p> <p>A Hinged Fol-Da-Tank bracket shall be supplied and installed on the officer's side for 3,000 gallon folding water tank.</p> <p>The vehicle will be supplied with a 3,000 gallon folding tank. The lower compartments will each have a 500lb pull out tray installed in the bottom of the compartment.</p> <p><u>ROLL-UP DOORS</u> Each compartment shall be provided with a roll up door. Each door shall be secured in the closed position with a positive latch device with an electrical magnetic switch wired to the door with an "AJAR indicator light" in the cab per NFPA.</p> <p><u>STORAGE TRAYS</u> Two (2) storage trays shall be provided, one (1) on each side of the tank above the lower side compartments. Each storage tray shall be full length of the tank and shall be supported by braces welded directly to the sub- frame.</p> <p>The trays shall be for the storage of hose(s) and shall include NFPA compliant hose restraints.</p> <p><u>MUD FLAPS</u> Mud flaps shall be provided and shall be mounted directly to the body wheel well liner.</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. 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. 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>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>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>COMPARTMENT CUBIC FOOTAGE</u> There shall be an itemized list listing each compartment and the total usable space within each compartment.</p>		

Specifications

Bidder Complies

Yes No

SECTION VI PUMP & WATER TANK

WATER TANK

Water Tank: 3,000 gallon capacity

Tank shall be a round tank. There shall be no flat surfaces for water to slap against. Center sections of baffles are to be removable for full service access. The relief vent must be loaded from an auxiliary source. It shall allow the tank to fill completely. The vent discharge must be located so as not to interfere with fire operations. The vent valve shall be electrically controlled from the cab. There shall be one (1) liquid level indicator with three (3) four LED light legends, one (1) at rear, one (1) each side at pump panel, 12" high. Tank shall have one primary shut off in the hatch lid and one secondary shut off. There shall be (2) 1 2" pressure relief valves and a glycerin filled vacuum/pressure gauge. A 20" diameter access hatch shall be located on top front of the tank. The tank shall be mounted to the chassis by spring loaded brackets. Tank interior shall be coated with substance to limit interaction of potentially contaminated water and the tank material. Tank shall also contain two (2) nine pound anode bars for electrolysis protection.

VACUUM/PRESSURE SYSTEM

Vacuum/Pressure system shall consist of the following:

One (1) PTO driven Series V vacuum/pressure pump installed so as to provide visibility and serviceability to oil and vane check points. Pump shall be equipped with eight (8) phenolic, heat resistant vanes and oil catch muffler. The pump shall be capable of achieving 28" hg. Vacuum and able to draw water up to 25 foot vertical lift up to 2000 feet above sea level and pressure the tank up to 15 psi for moving water through large diameter hose.

The drive line shall be 1 1/4" solid shaft with 2 pillow block bearings. Drive line shall have a 4 groove pulley with belts which drive the vacuum pump. There shall be one (1) centrifugal action oil catch muffler with drain valve install in the vacuum system. A 1/4" flush valve shall be installed on the vacuum/pressure system for maintenance. The pump shall be electrically controlled and indicated from the cab. A means of disconnecting the system shall be incorporated so the vacuum/pressure pump can be operated manually. An over speed system shall be installed to protect against over speeding the vacuum/pressure pump.

DUMP/FILL SYSTEM

There shall be three (3) 6" dump/fill port (one each side and one at rear) with an air operated 6" butterfly valve and aluminum camlock fitting and caps. Each valve tube shall be equipped with a 3/4" air bleed valve.

Specifications	Bidder Complies	
	Yes	No
<p><u>SYSTEM CONTROLS</u></p> <p>Controls and indicators for the vacuum system will be located on a console in the cab. All controls shall be accessible to driver and passenger. NOTE: All vacuum/pressure operations will be controlled from inside the cab.</p> <p>1 -PTO rocker switch for vacuum/pressure pump, 1 - Overspeed indicator light, 1 - Vacuum/pressure control switch with indicator lights for load, unload and neutral, 1 - Switch for each air load/unload valve (Open/closed), 1- Tank vent control switch with indicator light, 1 - Level indicator mini 4 light.</p> <p><u>FIRE PUMP</u></p> <p>Hale MBP, 1000 GPM single stage; Super Silent; Helical gear transmission. Extruded aluminum pump enclosure; 18" wide. Black heat bonded pump panel each side. No suction tubes.</p> <p>(2) 2 1/2" discharge LH side, 30 degree elbow and drain. (1) 3" discharge RH side, 4" FNST X 5" Storz 30 degree</p> <p>(1) 4" tank suction with check valve; interlocked with vent on vacuum tank. Pump shift is on pump panel to engage hot shift PTO.</p> <p>MC water level gauge; display mounted above pump panel each side and top rear of tank; 12" high X 2" deep X 4" wide; 170 degree visibility.</p> <p>(1) FRC Incontrol pressure governor to include oil pressure, engine temperature, voltage, RPM monitors and pump master pressure and compound gauges.</p> <p>(1) Master drain.</p> <p>Two (2) crosslays for 250 feet 1 3/4" hose above pump: 2- 2" gauge and drain One (1) crosslay for 200' 2.5" hose above pump: 1- 2" gauge and drain</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 (1000 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 a 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" 		

Specifications	Bidder Complies	
	Yes	No
<ul style="list-style-type: none"> • 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 property damage combined. <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.</p> <p>A label shall be provided on the pump operator's panel that states the following:</p> <p>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>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>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 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></p>		

Specifications	Bidder Complies	
	Yes	No
<p>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>INTAKE RELIEF VALVE</u> An Elkhart relief valve shall be installed on the suction side of the pump preset at 125 psig.</p> <p>Relief valve shall have a working range of 75 psig to 250 psig.</p> <p>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.</p> <p>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> 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. One (1) priming control shall both open the priming valve and start the priming motor. Primer shall be an 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>		

Specifications	Bidder Complies	
	Yes	No
<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><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.</p> <p><u>PUMP CONTROL PANEL</u> The gauge and control panels shall be designed for ease of maintenance.</p> <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 		

Specifications	Bidder Complies	
	Yes	No
<p>- Tachometer: Electric - Master Pump Drain Control</p> <p>- Voltmeter - Check Transmission Warning Indicator Light</p> <p>- Stop Engine Warning Indicator Light</p> <p>- Check Engine Warning Indicator Light.</p> <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. The gauges shall be a minimum of 4.00" in diameter and shall have white faces with black lettering, with a pressure range of 30.00"-0-600#. Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut. 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>PUMP PANEL ILLUMINATION</u> Illumination of the pump operator's panel shall be accomplished with the compartment interior lighting.</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 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>STANDARD GAUGES</u></p>		

Specifications	Bidder Complies	
	Yes	No
<p>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>CROSSLAY COVER</u> A vinyl cover shall be provided. The cover shall be black.</p> <p style="text-align: center;"><u>SECTION VII</u> <u>EQUIPMENT</u></p> <p><u>EQUIPMENT</u></p> <p>Delivered apparatus shall be equipped with following equipment:</p> <p>Four (4) - 15 foot X 6" light weight hard suction; 6" camlock couplings.</p> <p>(1) 10 foot X 6" hard suction. (Kochek)</p> <p>(1) Bag of fasteners.</p> <p>(1) Floating strainer (6" with camlock coupler).</p> <p>Two (2) Zico model # SAC-44 chocks shall be supplied. They shall be mounted one on each side of the apparatus.</p> <p>One (1) - 3,000 gallon folding water tank; aluminum frame with two (2) positive catch devices to keep it secured to the vehicle.</p>		
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Specifications

**Bidder
Complies**

Yes No

SECTION VIII **PAINT & STRIPING**

FINISH

White PPG Concept polyurethane system paint to match cab to include tank and compartments.

The lettering shall be 3" Scotchlite letters including shading and outline per letter. The City will provide a digital picture for the required graphics.

REAR TANK SCOTCHLITE STRIPING

Chevron striping shall be provided on the rear of the apparatus. The striping shall consist of 6" yellow/red alternating stripes in an "A" pattern. The striping shall be located on the rear facing tank as applicable.

Compartment interiors are matte (textured black) maintenance free finish. 6" reflective stripe shall be located on each side as per NFPA.

PAINT

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

1. **Manual Surface Preparation** - All exposed metal surfaces on the custom cab and body shall be thoroughly cleaned and prepared for painting. Surfaces that shall not be painted include all chrome plated, polished stainless steel, anodized aluminum and bright aluminum treadplate. Each imperfection on the exterior metal surface shall be removed or filled and then sanded smooth for a smooth appearance. All seams shall be sealed before painting.

2. **Chemical Cleaning and Treatment** - The metal surfaces shall be properly cleaned using a high pressure and high temperature acid etching system. Surfaces are chemically cleaned to remove all dirt, oil, grease and metal oxides to ensure the subsequent coatings bond well. An ultra pure water final rinse shall be applied to all metal surfaces, excluding undercarriage components, at the conclusion of the metal treatment process.

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

Specifications	Bidder Complies	
	Yes	No
<p>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><u>PAINT - ENVIRONMENTAL IMPACT</u> Contractor shall meet or exceed all current State of Connecticut 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 State of Connecticut 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 white to match the exterior truck color. The rear dual wheel shall only have the outside surface of the exterior wheel painted white. The interior dual wheel shall not be painted white.</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. (Drakeville Engine 35)</p> <p>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 lime yellow diamond grade The second color shall be red diamond grade 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> <p><u>LETTERING</u> Forty-one (41) to sixty (60) 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. (TK-38)</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. The graphics supplied by the Drakeville Fire Department will be applied by the manufacturer. There shall also be a pair of decals representing the City of Torrington provided by the City of Torrington to be applied.</p>		

Specifications

Bidder Complies

Yes No

Equipment Supplied by the Torrington/Drakeville Fire Departments:

All hose will be supplied by the Torrington/Drakeville Fire Departments, as well as all loose tools, extinguishers.

The Torrington Fire Department will be responsible for mounting their equipment.

Any equipment that needs to be supplied with the vehicle shall be specified in this bid.