TOWN OF GUILFORD, CONNECTICUT 06437

THE OLD STONE HOUSE

REQUEST FOR PROPOSAL RFP# 3 - 1112

CLASS A PUMPING ENGINE

ISSUED: July 26, 2011

DUE: September 6, 2011

SUBMIT PROPOSALS TO:

OFFICE OF THE FIRST SELECTMAN
TOWN OF GUILFORD
31 PARK STREET
GUILFORD CT 06437

Tel. #: 203-453-8015
www.ci.guilford.ct.us

TOWN OF GUILFORD
REQUEST FOR PROPOSAL
RFP #3-1112
CLASS A PUMPING ENGINE
CONTENTS

REQUIREMENTS

1)	**Certificate of Insurance**	**_Yes__** ***upon rfp award***
2)	**Bid Bond/cashier's check**	**_Yes_** ***include in bid proposal***
3)	**100% Performance Bond**	**_Yes__** ***upon rfp award***
4)	**Labor & Materials Bond**	**_NO**
5)	**Vendor References**	**_Yes__** ***include in bid proposal***
6)	**Descriptive Literature**	**_Yes** ***Include in bid proposal***
7)	**See above for Required Statements**	***include in bid proposal***

LEGAL NOTICE
TOWN OF GUILFORD
REQUEST FOR PROPOSAL #3 - 1112
CLASS A PUMPING ENGINE

The Town of Guilford, on behalf of the Fire Department, is seeking competitive bids for one Class A Pumping Engine. **Sealed proposals,** labeled "Class A Pumping Truck RFP #3-1112", will be due no later than September 6, 2011 at 11:00 AM ***at the Guilford Fire Department***, 390 Church Street, Guilford, Ct. 06437 at which time they will be opened in public. Bids received after this date and time will be rejected. Request for Proposal packages may be obtained at the Office of the First Selectman, 31 Park Street, Guilford, CT 06437 or may be accessed from the Town of Guilford's website at www.ci.guilford.ct.us.

Any questions regarding the Class A Pumping Engine specifications shall be submitted in writing to Charles E. Herrschaft, Jr., Guilford Fire Chief at gfd10@guilfordfire.com or by facsimile at 203-453 8005 with a copy to millmanp@ci.guilford.ct.us

Each bidder will be required to submit to the Office of the First Selectman, their original proposal with two (2) copies and a Bid Bond, Cashier's or Certified Check in the amount of 10% of the base bid. Each bidder shall honor the bid price for ninety (90) business days from the date of the bid opening, without modification. Upon award of the RFP, the winning bidder shall be bound by the proposal price throughout the contract period.

The Town of Guilford reserves the right to reject any or all proposals; or to waive defects in same, if it deems such to be in the best interest of the Town.

_____
Joseph S. Mazza
First Selectman

Publish one time only in the New Haven Register under LEGAL NOTICES on July 26, 2011.

TOWN OF GUILFORD
GENERAL CONDITIONS AND INSTRUCTIONS TO BIDDERS

The general rules and conditions outlined below apply to all purchases authorized by the Town of Guilford. The conditions outlined become a formal part of each Invitation to Bid unless otherwise specified. All Bidders are expected to fully inform themselves as to the conditions, requirements and specifications before submitting bids. Failure to do so will be at the Bidder's own risk. The term bidder and bid shall have the same meaning as respondent and RFP and are used interchangeably throughout the RFP document.

The terms and conditions outlined in the Request for Proposal become part of the formal contract following award, unless specified otherwise. ***In the event of any conflict between the terms of the General Conditions and Instructions to Bidders and the terms of the Fire Department Supplemental Instructions to Bidders, the Fire Department Supplemental Instructions to Bidders shall control.***

1. BIDDING PROCEDURE

1.1 Bidder shall submit three (3) complete sets of the bid documents and all supporting material, unless otherwise stated in the Invitation to Bid. All appropriate blanks shall be completed. The signer of the bid shall initial any interlineations, alteration or erasure on the specification document. Bidders shall not change the Proposal Form nor make additional stipulations on the specifications document.

1.2 Bid prices shall be submitted on the Proposal Form included in the bid document.

1.3 The Base Bid is the sum stated in the bid for which the Bidder offers to perform the work or provide merchandise or equipment described in the bid package as the base, to which work or materials may be added or from which work or materials may be deleted from sums stated in alternate bids.

1.4 Conditional bids are subject to rejection in whole or in part. A conditional bid is defined as one which limits or modifies any of the terms and conditions and/or specifications of the Invitation to Bid.

1.5 Alternate bids will not be considered unless specifically requested in the original bid package. An alternate bid is defined as one which is submitted in addition to the Bidder’s Base Bid set forth in the Invitation to Bid. Town shall have the right to accept alternates in any order or combination, unless otherwise specifically provided in the bid documents, and to determine the low Bidder on the basis of the sum of the Base Bid and alternates accepted.

1.6 Unit prices will not be considered unless specifically requested in the original bid package. Unit price is defined as an amount proposed by Bidders, stated on the Proposal Form, as a price per unit of measurement for material or services added to or deducted from the base bid by appropriate modification, if estimated quantities of work required by the contract documents are increased or decreased.

1.7 Each bid must be legible (no pencil), include the full name, business and e-mail address, and telephone number of the Bidder and be signed in ink by the Bidder.

1.8 A bid by a firm or organization other than a corporation must include the name and address of each member.

1.9 A duly authorized representative of a Bidder entity must sign the bid and any applicable bond(s) in the name of such entity. Such representative must attest that he/she is duly authorized to bind such entity or submit a corporate resolution or limited liability/partnership consent evidencing such authority.

1.10 Bids received after the time and date established for receiving bids will be rejected.

1.11 At bid opening all bids are publicly opened and received. The bids will be considered unverified and subject to further review for acceptance/disqualification. Upon determination of acceptable bids to be considered for award, the Town shall prepare a bid summary by the Town of Guilford, which summary shall be available to all Bidders upon their request.

1.12 Estimated quantities may be listed as part of a bid package in order to assist Bidders, but Bidders are reminded that actual quantities ordered may vary from figures listed and the Town will not be held liable for any difference. On "as required" bids, acceptance of this bid will bind the Town to pay for, at unit price only, quantities ordered and delivered. The Town will not be required to accept delivery of any balances unordered as of the contract expiration date.

1.13 Bidders shall submit catalogues, descriptive literature and detailed drawings, fully detailing features, designs and construction necessary to fully describe the material or work proposed in the bid.

2. BIDDER'S SECURITY

2.1 Bid Security, as a guarantee of good faith, in the amount of ten percent (10%) of the base bid in the form of a certified check, cashier's check, or Bidder's bond, shall be required to be submitted with the bid package for all bids.

2.2 Such bid security will be returned to the unsuccessful Bidders when the award of bid is made.

2.3 Bid security will be returned to the successful Bidder as follows:

2.3.1 For bids with specified quantities for which the awarded bid package and delivery of award notice constitute the contract; upon the delivery of all equipment or merchandise (and/or performance of services, if applicable), and upon final acceptance by the Town.

2.3.2 For all other contracts; upon receipt by the Town of the executed contract and applicable bonds, if any.

2.4 Town shall have the right to retain the bid security of Bidders to whom an award is being considered until either:

2.4.1 A contract has been executed and bonds have been furnished.

2.4.2 The specified time has elapsed so that the bids may be withdrawn.

2.4.3 All bids have been rejected.

2.5 Bid security will be forfeited to the Town as full liquidated damages, but not as a penalty, for any of the following reasons:

2.5.1 If the Bidder fails to deliver the equipment or merchandise in full compliance with the accepted proposal and specifications.

2.5.2 If the Bidder fails or refuses to enter into a contract on forms provided by the Town, and/or if the Bidder fails to provide sufficient bonds or insurance within applicable time periods set forth in the bid package.

2.6 The surety company executing the bond must be licensed to do business in the state, or the bond must be countersigned by a company so licensed. The bond must be signed by an official of the surety company and corporate seal must be affixed over his/her signature. Signatures of two witnesses for both the principal and surety must appear on the bond, if required by law. A power

of attorney for the official signing the bond for the surety company must be submitted with the bond.

3. CLARIFICATION OF SPECIFICATIONS/ADDENDA

3.1 Bidders shall promptly notify the Purchasing Agent of any ambiguity, inconsistency or error, which they may discover upon examination of the specification documents.

3.2 Bidders desiring clarification or interpretation of the specification documents shall make a written request which must reach the Purchasing Agent at least three (3) business days prior to the date and time for receipt of bids. Failure to request a clarification or interpretation within said time frame shall be deemed a waiver of the right to assert these issues and claims in the future.

3.3 Interpretations, corrections and changes made to the specification documents will be made by written addenda.

3.4 Oral interpretations or changes to the specifications documents made in any other manner, will not be binding on the Town and Bidders will not rely upon such interpretations or changes.

3.5 Addenda are written instruments issued by the Town prior to the bid opening date, which modify or interpret the specification document by addition, deletion, clarification or correction.

3.6 It is the Bidder's responsibility to check for addenda prior to submitting proposals.

3.7 Copies of addenda will be made available for inspection at the office of the Purchasing Agent and on the Town website www.ci.guilford.ct.us .

3.8 No addenda will be issued later than forty-eight (48) hours prior to the bid opening date, except addenda withdrawing the Invitation to bid or addenda which includes postponement of the bid.

3.9 Bidders shall ascertain prior to submitting their bid that they have received all addenda issued, and they shall acknowledge receipt of addenda on the Proposal Form.

4. BIDDER REPRESENTATION

4.1 Each Bidder by signing and submitting a bid, represents that the Bidder has read and understands the specifications documents, and the bid has been made in accordance therewith.

4.2 Each Bidder for services further represents that the Bidder has visited the site and has become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance, furnishing and completion of the services. Bidder acknowledges that it is solely responsible for investigating and satisfying itself as to all actual and existing site conditions.

4.3 Bidder recognizes and agrees that the Town is subject to the Freedom of Information Act of the Connecticut General Statutes and, as such, any information contained in or submitted with or in connection with Bidder's bid is subject to disclosure if required by law or otherwise. Bidder expressly waives any claims that Bidder or any of its successors and/or assigns has or may have against the Town or any of its directors, officers, employees or authorized agents as a result of any such disclosure.

5. SUBSTITUTIONS

5.1 Wherever in the specifications or Bid Proposal form brand names, manufacturer, trade name, or catalog numbers are specified, it is for the purpose of establishing standard of required function, dimension, appearance and quality to be met by any proposed substitution.

5.2 No substitution will be considered prior to receipt of bids unless written request for approval has been received by Town at least five (5) business days prior to date of receipt of bids. It is the Bidder's responsibility to identify any alternate items offered in the bid, and prove to the satisfaction of the Town that said item is equal to, or better than, the product specified. Bidder shall identify the manufacturer and brand name of each proposed alternate, plus a complete description of the alternate items including illustrations, performance test data and any other information necessary for an evaluation. The Bidder must indicate any variances by item number from the specification document. Bidder must fully explain the variances from the specification document, since brochure information may not be sufficient. Town reserves the right to approve as an equal or to reject as not being equal any article the Bidder proposes to furnish which contains major or minor variations from the specifications requirements. Any deviation from the Town's specifications not previously submitted as required by the above will be grounds for rejection of the material and/or equipment.

6. SAMPLES

6.1 When samples are required from Bidders, the samples may be retained by the Town of Guilford until the delivery of contracted items by the awarded Bidder; and, with respect to the rejected Bidders, upon notification of such rejection. Bidders shall be responsible for delivery and removal of samples, at Bidders' sole cost. All samples are to be marked samples and delivered to Guilford. The package must indicate the name of the Bidder, item enclosed and bid number. Failure to adequately identify samples as indicated may be considered sufficient grounds for rejection of the bid.

7. BID AWARD

7.1 The signed bid proposal shall be considered an offer on the part of the Bidder. Such offer shall be deemed accepted upon (i) receipt of proper Town authorization from the Board of Selectmen; and (ii) delivery by the Town of a notice of award letter to the winning bidder, or if applicable, execution by the Town and Bidder of a separate contract, in the form included in the bid package, or if not included in the bid package, in a form mutually acceptable to both parties. In either case the terms and provisions of the Town's bid package shall be deemed incorporated into the contract. *Notwithstanding anything to the contrary stated herein, the contract shall be deemed executory only to the extent of appropriation available to each agency for the purchase of such articles/services, if the purchase is to be funded by such appropriation and not otherwise through Town bond authorization. The Town's extended obligation on those contracts which envision extended funding, through successive fiscal periods shall be contingent upon actual appropriations for the following year. In the event that funding is not available at the time of award and/or execution of the contract and/or if the Town budget is approved for the fiscal year in which the contract is to be performed after contract execution or time of award but prior to the performance of the contract, the Town reserves the right to cancel the contract.*

7.2 Contracts shall be executed by the Bidder and delivered to the Town for counter-execution within five (5) business days of award notification.

7.3 No bid shall be modified or withdrawn for a period of ninety (90) calendar days after the time and date established for receiving bids, and each Bidder so agrees in submitting the bid. Upon award of the bid, the winning bidder shall be bound by the bid proposal price throughout the contract period.

7.4 If two or more Bidders submit identical bids and are equally qualified, the decision of the Town to make award to one or more of such Bidders shall be final

7.5 The contract will be awarded to the lowest responsible Bidder complying with all the provisions of the invitation, provided the bid price is reasonable and in the best interest of the Town of Guilford to accept it. The Town reserves the right to reject any or all bids. The Town specifically reserves the right to reject the low Bidder.

In determining responsibility the following qualifications in addition to price will be considered.

a. The ability, capacity and skill of the Bidder to perform required services.

b. The ability of the Bidder to perform the contract or provide the service promptly within the time specified.

c. The quality of performance of previous contracts or services, including, without limitation, the safety record of the Bidder.

d. The previous and existing compliance by the Bidder with laws and ordinances relating to the contract or services.

e. The sufficiency of the financial resources and ability of the Bidder to perform the contract or provide the service.

f. The quality, availability and adaptability of the supplies or contractual services to the particular use required.

g. The ability of the Bidder to provide future maintenance and service for the use of the material and/or equipment.

7.6 The Town reserves the right to reject all bids or any part of a bid, to waive defects in bids, and to re-bid at anytime prior to the bid award if to do so is deemed to be in the best interest of the Town. The Town reserves the right to waive irregularities and technicalities in bids, such as shall best service the requirement and interest of the Town. Clerical errors detected at the bid opening will be corrected and initialed by the Selectman, Bidder and a witness if present.

8. TERMS OF PAYMENT

8.1 Prepayment discounts for early payment are preferred. All others to be Net 30 days unless otherwise specified.

8.2 The Town is exempt from state and local taxes.

8.3 A contract shall be deemed executory only to the extent of appropriation available to each agency for the purchase of such articles. The Town's extended obligation on these contracts

which envision extended funding, through successive fiscal periods shall be contingent upon actual appropriations for the following year.

9. PERFORMANCE/LABOR AND MATERIALS BOND

9.1 If required by the bid specifications, the successful Bidder shall supply an original performance bond and labor and materials bond in the amount of 100% of the total awarded bid amount within five (5) business days of the award notification. The provisions of Section 2.6 above shall apply to the bonds required by this Section 9.1.The bonds shall remain in effect for one year from the date of delivery of the bonds to the Town. Should the Town elect to renew the terms of the accepted proposal, if applicable, then the bonds shall be extended for the period of such renewal period and the performance bond shall be increased to the full amount of the revised contract price, if applicable.

10. INSURANCE REQUIREMENTS

10.1 The successful Bidder shall, at its own expense and cost, obtain and keep in force during the duration of the work/project the insurance set forth below covering the Bidder and its agents, employees and subcontractors and other providers of services and shall name the Town of Guilford and its employees and agents as "Additional Insureds" on a primary and non-contributory basis to the Bidder's Commercial General Liability and Automobile Liability Certificate of Insurance**.**

10.2 Insurance shall be written with Carriers approved in the State of Connecticut and with a minimum Best's Rating of A-. In addition, all Carriers are subject to approval by the Town of Guilford.

10.3 The Town reserves the right to require additional coverages than those listed below, including, without limitation, Builder's Risk insurance for construction projects and Owner's Protective Liability, if desirable.

10.4 The required coverages are as follows:

a. **Worker's Compensation Insurance:** (i) statutory coverage, (ii) employer's liability and (iii) $100,000 each accident/ $500,000 disease-policy limit/$100,000 disease each employee. (Coverage is to be extended for USL&H benefits and include coverage for Jones Act where work is adjacent to or on the water.)

b. **Commercial General Liability** (on an occurrence basis)**:** (i) including premises & operations, products and completed operations, personal and advertising injury, contractual liability and independent contractors, (ii) limits of liability for bodily injury and property damage each occurrence $1,000,000, aggregate $2,000,000 (to be applied separately to each job), and (iii) waver of subrogation shall be provided.

c. **Automobile Insurance:** (i) including all owned, hired, borrowed and non-owned vehicles and (ii) limit of liability for bodily injury and property damage per accident $1,000,000.

The Bidder shall provide a Certificate of Insurance to the Town within five (5) business days after receipt of notice of award. The Certificate shall specify that the Town of Guilford shall receive thirty (30) days advance written notice of cancellation or non-renewal. The Certificate shall evidence all required coverage including the Additional Insured and Waiver of Subrogation. Notwithstanding the forgoing, in the event that any State laws or regulations require additional coverage and/or higher coverage amounts, State laws and regulations shall control.

11. WARRANTIES AND MAINTENANCE

11.1 Copies of manufacturer's warranties and maintenance policies and associated costs shall accompany the bid proposal for items being bid.

11.2 At a minimum the Bidder shall warrant that any defective components discovered within a one year period after the date of installation/delivery shall be replaced at no expense to the Town, unless otherwise specified. Bidder shall pay the cost of all shipping with regard to such defective parts (both return and purchase of replacement parts.)If the bid specifications require a longer or more extensive warranty, the specifications shall control.

12. INDEMNIFICATION

12.1 The Bidder shall indemnify and hold harmless the Town, its agents and employees from and against all claims, damages, losses and expenses, including attorney's fees arising out of, in whole or in part, the performance of the contract, or any negligent or willful act or omission of the Bidder, its subcontractors, employees or agents, including, without limitation, claims, damages, loss and expense attributable to bodily injury, sickness, disease or death or injury to or destruction of tangible property, including the loss of use resulting there from or attributable to any type of pollution and/or environmental impairment or release into or upon land, the atmosphere, or any course or body of water that is above or below ground. The indemnification obligation under 12.1 shall not be limited in anyway by any limitation of the amount or type of damages, compensation or benefits payable by or for the Bidder, its subcontractors, agents or employees under worker's compensation, disability benefit acts or other employee benefit acts. This indemnity shall survive the expiration or early termination of the contract.

13. MISCELLANEOUS CONTRACT TERMS

13.1 **Delivery.** Bidder shall state on its Proposal Form the date upon which it can make delivery of all equipment or merchandise. Time is of the essence. All bids shall be based upon inside delivery of the equipment or merchandise F.O.B. at the location specified by the Town. The Town reserves the right to cancel orders or any part thereof, without obligation, if delivery is not made within the time(s) specified on the proposal form. Such failure to deliver shall authorize the Town to purchase replacement articles of comparable grade from third party supplier(s). On all such purchases, Bidder shall reimburse the Town, within a reasonable time as specified by the Town, for any expenses incurred in excess of contract prices or the Town may deduct such amount from amounts owed the defaulting contractor. Such substitute purchases shall be deducted from contract quantities. If in the best interest of the Town, the Town reserves the right

to use or consume articles delivered which are substandard in quality, subject to an adjustment in price to be determined by the Town.

13.2 **Termination of Contract**. Contracts shall remain in force for the period within which the Bidder must perform as set forth in the proposal, unless (i) there have been satisfactory deliveries prior to expiration; or (ii) an extension has been agreed upon as evidenced by a contract extension executed by Bidder and the Town; or (iii) the Contract executed by the awarded bidder and the Town expressly states otherwise.

13.3 **Assignment.** Bidder shall not assign or transfer this contract or its obligations hereunder without the consent of the Town, which consent may be withheld in the Town's sole discretion.

13.4 **Default.** The contract may be terminated by the Town by written notice of default to the contractor upon non-performance or breach of the contract terms. The awarded Bidder shall be obligated to pay the Town for all losses, damages, costs and expenses, including the cost of re-procurement, and attorney's fees incurred defending claims arising from such default and in seeking recovery of all such costs and expenses from Bidder and/or its surety. Upon a termination for cause, the Town shall have no further obligation to issue payments to the Contractor until resolution of the dispute.

14. COMPLIANCE WITH LAWS

14.1 The Bidder shall comply with all federal, state and local laws and regulation and shall procure all necessary license and permits, pay all charges and fees and give all notice necessary and incident to the due and lawful performance of the contract and bid process. Such laws shall include, without limitation, the following:

a. **Non-Discrimination and Affirmative Action.** Contractor, in performing under this contract, shall not discriminate against any worker, employee or applicant, or any member of the public, because of race, creed, color, age, marital status, sexual orientation, national origin, ancestry, sex, metal retardation or physical disability, including but not limited to blindness, unless it is shown by the contractor that such disability prevents performance of the work involved in any manner prohibited by the laws of the United States or the State of Connecticut, nor otherwise commit an unfair employment practice. Contractor further agrees that this article, (and any additional provisions required by law), will be incorporated by contractor in all contracts entered into with suppliers of materials or services contractors and sub-contractors and all labor organizations, furnishing skilled, unskilled and craft union skilled labor or who may perform any such labor or services in connection with this contract. The following principles and requirements of Equal Opportunity and Affirmative Action, as incorporated herein, will be incorporated into "Equal Opportunity - Non-Discrimination Clause" to be included in all bid documents, purchase orders, lease and contracts. The principles of Affirmative Action are addressed in the 13th, 14th and 15th Amendments of the United States Constitution, Civil Rights Act of 1964, Equal Pay Act of 1963, Title VI and VII of the 1964 United States Civil Rights Act, Presidential Executive Orders 11246, 11375, 11478 (nondiscrimination under federal contracts), Act 1, Section 1 and 20 of the Connecticut Constitution, Governor Grasso's Executive Order Number 11, Governor O'Neill's Executive Order Number 9, the Connecticut Fair Employment Practices Law (Sec. 46a-60-69) of the Connecticut General Statutes, Connecticut Code of

Fair Practices (46a-70-81), Deprivation of Civil Rights (46a-58 (a)(d)), Public Accommodations Law (46a-63-64), Discrimination against Criminal Offenders (46a-80), definition of blind (46a-51(1)), definition of Physically Disabled (46a-51 (15)), definition of Mentally Retarded (46a-51-13), cooperation with the Commission of Human Rights and Opportunities (46a-77), Sexual Harassment (46a-60 (a)-8), Connecticut Credit Discrimination Law (360436 through 439), Title 1 of the State and the Local Fiscal Assistance Act 1 1972. Every contract to which the State is party must contain the nondiscrimination and affirmative action provisions provided in the Connecticut General Statutes Section 4a-60a.

b. **Executive Orders.** The contract is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgate June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgate February 15, 1973, concerning the listing of employment opening and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a part of the contract as if they had been fully set forth in it. The contract may also be subject to Executive Order No. 7C of Governor M. Jodi Rell, promulgated July 13, 2006, concerning contracting reforms and Executive Order No. 14 of Governor M. Jodi Rell, promulgate April 17, 2006, concerning procurement of cleaning products and services, in accordance with their respective terms and conditions.

c. **Connecticut's Prevailing Wage Law Provision.** If applicable, the contractor must be in full compliance with Connecticut General Statutes Section 31-53 and 31-53(a) which applies to each contract for the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration, or repair of any public works project by the state or its agents, or by any political subdivision of the State of Connecticut General Statutes, Section 31-53 (g) provides monetary thresholds which must be met before the law is applicable. The contractor should familiarize themselves with all aspects of the provisions under state law in order to ensure full compliance.

d. **Occupational Safety and Health Administration Requirements.** According to Connecticut General Statutes, Section 31-53b (a) each contract entered into on or after July 1, 2007, for the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public building project by the state or any of its agents, or by a political subdivision of the state or any of its agents, where the total cost of all work to be performed by all contractors and subcontractors in connection with the contract is at least one hundred thousand dollars shall contain a provision requiring that, not later than thirty days after the date such contract is awarded, each contractor furnish proof to the Labor Commissioner that all employees performing manual labor on or in such public building , pursuant to such contract, have completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, in the case of telecommunications employees, have completed at least ten hours of training in accordance with 29 CFR 1910.268. The contractors should familiarize themselves with all aspects of state law and any applicable regulations pertaining to these requirements in order to ensure full compliance.

In addition, Bidder has not been cited for three or more willful or serious violations of OSHA, or any standard, order or regulation promulgated pursuant to such Act, during the three year period preceding the bid, which violations were cited in accordance with the provisions of any State Occupational Safety and Health Act or the Occupation Safety and Health Act of 1970 and which were not abated within the time fixed by the citation; which citation has not been set aside following appeal to the appropriate agency or court having jurisdiction. The foregoing is meant to comply with Section 31-57b of the Connecticut General Statutes.

FIRE DEPARTMENT SPECIFICATIONS

The Class A Pumping Engine has the following critical overall dimensions. All bidders must comply with these Critical Dimensions.

CRITICAL VEHICLE DIMENSIONS:

Maximum permissible vehicle length: 30'
Maximum permissible vehicle height: 10'-8"

Bidder Complies YES_____ NO_____

OVERALL VEHICLE DIMENSIONS:

The proposed vehicle has the following overall dimensions:

Overall vehicle length:
Overall vehicle height:

Bidder Complies YES_____ NO_____

BODY CONSTRUCTION:

EXTERIOR, STAINLESS STEEL BODY CONSTRUCTED OF 304 L STAINLESS STEEL AND, APPROXIMATELY 152" IN LENGTH. RESCUE STYLE BODY ON DRIVER SIDE AND STANDARD HIGH SIDE COMPARTMENT ON OFFICER SIDE. THE FRONT COMPARTMENT DOORS SHALL BE SINGLE DOORS. THE OVER THE WHEEL COMPARTMENTS SHALL HAVE TWO VERTICLE HINGE DOORS. THE REAR COMPARTMENT DOOR WILL BE DUTCH DOORS. ALL DOORS SHALL BE STAINLESS STEEL. THE DRIVER SIDE FRONT COMPARTMENT DOOR SHALL BE REVERSE HINGE.

Bidder Complies YES_____ NO_____

EXTERIOR COMPARTMENT DOORS: VERTICALLY HINGE

Bidder Complies YES_____ NO_____

HANSEN LOCKING "D" RING COMPARTMENT HANDLES:

All compartment door handles shall be Stainless Steel, Hansen 6" Bent D-Ring handles. The handles shall have a spring return built-into handle to allow handle to return to resting position. The handle shall activate the steel rods as described or equivalent.

All primary latching compartment doors shall utilize two automotive rotary latches. Inside releases on the known latching secondary door of double door compartments is not acceptable. All latches shall be activated by corrosion resistant steel rods with adjustable ball joint swivel ends. All rods shall include an anti-rattle device to prevent noise.

Bidder Complies YES_____ NO_____

CLEVELAND DOOR STAY ARMS
All hinged compartment doors shall incorporate a Cleveland style door opening and stay-arm assembly.

The door holder shall be attached to a structural angle attached to the upper door header.

Bidder Complies YES_____ NO_____

DOUBLE DOOR COMPARTMENT DOOR HANDLES:

Each exterior compartment door shall have exterior release handle. Double door compartments shall only have one exterior release handle. The secondary door shall open without any other handles. This eliminates the need to reach inside to release the second opening door. (INSIDE RELEASE HANDLE ARE NOT ACCEPTABLE).

Bidder Complies YES_____ NO_____

ALL COMPARTMENT DIMENSIONS ARE APPROXIMATE FOR GUIDELINE PURPOSES ONLY. ALL MANUFACTURERS ARE TO SUPPLY THE SIZES OF THEIR COMPARTMENTS.

EXTERIOR COMPARTMENT CONSTRUCTION, HEAVY DUTY:

The exterior compartments shall be fabricated from stainless steel. All compartments shall have its own independent unit with two sides, rear, top, and bottom and not share a common wall with an adjoining compartment. The walls of the compartment shall be 304 -L Stainless Steel.

Bidder Complies YES_____ NO_____

COMPARTMENT MATERIAL, STAINLESS STEEL:

The material used for the compartment construction shall be as follows: The walls of the compartment shall be Stainless Steel. The top and floors shall be Stainless Steel.

Bidder Complies YES_____ NO_____

COMPARTMENT VENTING:

All exterior compartments shall be vented utilizing a minimum of one stainless steel louver vents in each compartment. Each vent shall be placed to prevent water splash or be baffled to eliminate any entry of water into the compartment.

Bidder Complies YES_____ NO_____

DRI-DEK MATTING (BLACK):

Dri-Dek material shall be installed on all shelves , trays and all compartment. The dri-dek shall be custom cut to fit each compartments, shelves and trays.

Bidder Complies YES_____ NO_____

BLACK RUBBER RUB RAILS, UPPER:

The side compartments shall be protected with a black 1.50" thick x 3.00" high plastic rub rail. .50" rubber spacers shall be included between the rubrail and the body.

Rubrails shall be fastened to the sides of the body with 1/2" stainless bolts and washers on a minimum of 12" centers.

Rubrails shall be tapered on each end of the body and run the full length.

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

The intermediate rubrail shall be located above the body doors rain drip area. The upper rubrail shall be located up high just below the roof extrusions

Bidder Complies YES_____ NO_____

BLACK RUBBER RUB RAILS, LOWER:

Heavy duty rubber rub rails shall be installed on the lower body skirt panels under the door line.

The body shall be protected with a black 1.50" thick x 3.00" high plastic rub rail. .50" rubber spacers shall be included between the rub rail and the body.

Rub rails shall be fastened to the sides of the body with 1/2" stainless bolts and washers on a minimum of 12" centers.

Rub rails shall be tapered on each end of the body and run the full length.

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

The intermediate rub rail shall be located above the body doors rain drip area. The upper rub rail shall be located up high just below the roof extrusions

Bidder Complies YES_____ NO_____

RUBBER MUD FLAPS, FRONT, REAR:

Rubber mud flaps shall be provided behind the front and rear wheels of the vehicle. They shall be Heavy Duty Truck type and bolted to the inner fender liners of the modular body, behind the rear tires.

Bidder Complies YES_____ NO_____

FUEL FILL HOUSING WITH DOOR:

A polished aluminum fuel filler housing shall be installed. The housing shall incorporate the proper fuel filler design. The fuel filler shall have a brushed aluminum spring loaded door to conceal the fuel filler cap.

Bidder Complies YES_____ NO_____

ALTERNATING ELECTRONIC HEAD LIGHT FLASHER:

A Heavy Duty Electronic Flasher shall be installed in the power distribution panel. Whelen WHF-2150A

Bidder Complies YES_____ NO_____

The vehicle shall be equipped with Federal Signal Delta Ray Traffic Clearing Light warning light. Federal

Signal # 425100-43

Quantity: (1).
Location: To be determine.
Color: Red/Red.

Bidder Complies YES_____ NO_____

DRIVER AND PASSENGER SIDE BROW LIGHT, CONTROL

The driver side brow light of the vehicle shall function by the relay controlled circuit activated by the right flood lighted switch in the drivers console

Bidder Complies YES_____ NO_____

RIGHT SIDE FLOOD LIGHT, CONTROL:

The right side flood lights of the vehicle shall function by the relay controlled circuit activated by the right flood lighted switch in the drivers console.

Bidder Complies YES_____ NO_____

LEFT SIDE FLOOD LIGHT, CONTROL:

The left side flood lights of the vehicle shall function by the relay controlled circuit activated by the left flood lighted switch in the drivers console.
Rear Flood Lights on w/Reverse
REAR FLOOD LIGHTS: **Bidder Complies YES_____ NO_____**

The rear flood lights shall automatically activate when the vehicle is placed in reverse. All flood light circuits shall be relay controlled.

Bidder Complies YES_____ NO_____

REAR FLOOD LIGHT SWITCH:

The rear flood lights mounted on the rear of the vehicle shall be controlled "on-off" by a single pole lighted switch located in the driver's console. The rear flood light switch shall override both back-up function and the flood lights "on" with the door open function and shall not be affected by those circuits.

Bidder Complies YES_____ NO_____

REAR FLOOD LIGHTS:

The lights shall illuminate to provide better side illumination when backing up the vehicle during periods of darkness. The circuit shall be relay controlled, without the use of voltage reducing diodes or rectifiers. All flood and reverse circuits shall function independently when the vehicle is not in reverse. The rear flood lights shall have capability of being shut off even if in reverse.

Bidder Complies YES_____ NO_____

EXTERIOR COMPARTMENT LIGHTS:

The exterior compartments as listed shall be lighted by Weldon 2010-1170-30 lights. Individual compartment door post switches shall activate the compartment lighting relays. Each door post switch shall only activate one relay and pair of compartment lights. This is done to minimize the draw on the

electrical system. The door post switch shall not carry the current of the compartment lights.

Bidder Complies YES_____ NO_____

MISCELLANEOUS 12 VOLTS ELECTRICAL

TRAILER ELECTRICAL CONNECTION:

The vehicle shall be equipped with a male and female (7) pin trailer connector located under the rear bumper of the vehicle. All connectors shall be waterproof and not impose any undue electrical load on the cab Stop/Tail/Back-up Directional electrical circuits. All wires shall be properly tagged and identified for installation on trailer to be towed.

Towing system includes:
(1) Seven pin mating connector.

Bidder Complies YES_____ NO_____

120/240 VOLT AC ELECTRICAL:

The vehicle shall include a 120/240 volt AC Electrical system separate and distinct from the vehicles 12 volt electrical system.

The entire system shall be designed and tested to meet the requirements of the National Fire Protection Association (NFPA) and National Electrical Code (NEC) where applicable and use the balance of the NEC for general practices and procedures associated with high voltage 120/240 volt AC Electrical wiring and devices.

Bidder Complies YES_____ NO_____

120/240 VOLT AC WIRING:

All wiring shall be three (3) conductor 10 GA, 12 GA or 14 GA stranded copper cable as required by the circuit requirements. All conductors shall have 105 degree Celsius rated insulation, tinned conductors and be rated at 600 volt. All cable wiring shall be encased in high temperature protective loom where exposed. In any location where the wiring may be exposed to the exterior or underside of the body, it shall be encased in weatherproof conduit and junction boxes.

Bidder Complies YES_____ NO_____

ELECTRIC CABLE REEL: ECR 1624-17-18, 240V, 4 cond

A Hannay Electric Cable Reel Model ECR 1624-17-18, with four conductor capacity, for 240 volt, shall be installed in the vehicle as listed below. The reel shall include electric rewind motor activated by a push button momentary switch. The switch shall activate a heavy duty 70 amp battery solenoid and include an independent 25 amp circuit breaker for each reel. The reel shall include a full length stainless steel roller guide assembly and a ball stop clamped to the cable. The reel shall include a double pole GFI circuit breaker in the power distribution panel to power the reel and cord assembly.

Bidder Complies YES_____ NO_____

YELLOW SAFETY CABLE:

The 240 volt cable reel shall be equipped with 200 feet of 8 Gauge, 4 conductor cable. The cable shall be safety yellow. The circuit shall have a 30 amp capacity with a 30 amp double pole circuit breaker.

Quantity: (1).
Location: To be determine

)Includes 200 feet of 8 Gauge, 4 conductor safety yellow cable.
Reel includes stainless steel roller guide.
.

Bidder Complies YES_____ NO_____

BATTERY CONDITIONER/POWER SUPPLY:

The vehicle shall be equipped with a Kussmaul 1200, Model 091-187-12-Remote battery conditioner **to charge the vehicle batteries when plugged into the external shoreline. The battery conditioner shall be a fully automatic controlled taper charger and provide no charge when the batteries are completely charged. The Conditioner shall be a heavy duty, continuous duty, solid state unit. The use of heavy inefficient transformer type units is unacceptable.**

Bidder Complies YES_____ NO_____

PAINTING PROCESS:

Paint finish shall be provided with a four (4) year warranty supported by the manufacturer.

Bidder Complies YES_____ NO_____

PAINT COLOR AND FINISH, TWO (2) COLOR,

The box and chassis shall be white on top and red on the bottom. The paint scheme shall match the current apparatus.

Bidder Complies YES_____ NO_____

PAINT AND FINISH WARRANTY:

Paint and Finish shall be warranted for four (4) years.

Bidder Complies YES_____ NO_____

VEHICLE LETTERING:

Lettering shall match current apparatus lettering.

The lettering shall be finalized at the pre-construction conference prior to construction.

Bidder Complies YES_____ NO_____

NFPA REFLECTIVE STRIPE:

A straight 8" wide white vinyl reflective tape stripe shall be installed on the sides and rear body of the vehicle. The stripe shall be custom cut around all doors and equipment. The stripe shall be free from air

bubbles and defects.

Bidder Complies YES_____ NO_____

COMMUNICATION RADIO MOUNTING AND POWER:

The bidder shall supply 12 Volt power leads and mount a self-contained radio in the vehicle, the equipment shall be provided by end user and include the listed equipment only.

The wiring shall include BATTERY B+ stud and GROUND STUD and a IGNITION STUD. All studs shall be rated for 60 amps. Studs shall be located behind officers seat.

Bidder Complies YES_____ NO_____

ZICO WHEEL CHOCK WITH HORIZONTAL MOUNTING BRACKET:

Two (2) Ziamatic Co. Folding Wheel Chocks Model SAC-44, with Model SQCH-44-H Horizontal mounting bracket for each shall be provided and installed as listed.

Location: Under left body skirt behind rear wheel.

Bidder Complies YES_____ NO_____

HYDRAULIC HOSE REEL:
The following hydraulic hose reel shall be provided and installed:

Quantity: (2).
Location: To be determined.
Hydraulic Hose Reel
Hannay EF2016-17-18,
100' Hose, (1) Orange, (1) Green.
Electric Rewind.
Reel includes stainless steel roller guide.

Bidder Complies YES_____ NO_____

A custom length jumper hose shall be included for use between the hydraulic hose reel and the power unit.

The following hydraulic power unit shall be provided.

The pump will be secured to tray. The pump will be filled with the proper hydraulic fluid. An electrical outlet is specified for the pump, the electrical cord will be run, secured and be plugged into an electrical outlet. All components for the system will be run, purged, filled and tested for proper operation.

Quantity: (2).
Location: To be determine.

Bidder Complies YES_____ NO_____

HURST PUMP
One Hydraulic Power Unit

Hurst Model #JL-AC-SI-220, Part #363R309
Simultaneous dual line electric power unit shall be provided.

Mounting shall be determine

Bidder Complies YES_____ NO_____

HURST SPREADER

One (1) Hurst Model KL32, Part # 362R522

Bidder Complies YES_____ NO_____

HURST CUTTER

One (1) Hurst Model JL 500 cutter , Part # 362R513

Bidder Complies YES_____ NO_____

EXTREME DUTY TILT CAB CHASSIS:

SINGLE SOURCE MANUFACTURER:

Bids shall only be accepted from a single source apparatus manufacturer. The definition of single source is a manufacturer that designs and manufactures their products using an integrated approach, including the chassis, cab and body being fabricated and assembled on the bidder's premises. The warranties relative to the chassis and body design (excluding component warranties such as engine, transmission, axles, pump, etc.) must be from a single source manufacturer and not split between manufacturers (i.e. body and chassis). The bidder shall provide evidence that they comply with this requirement.

Bidder Complies YES_____ NO_____

EXHAUST EXTENSION:

The vehicle exhaust shall exit the right side of the vehicle and modified for Plymovent exhaust system. Chassis Preparation, component relocation

Bidder Complies YES_____ NO_____

COMPONENT RELOCATION:

All components as necessary shall be relocated from behind the cab to allow for the vehicle body to be mounted. Items to be relocated shall be components which interfere with mounting of the body etc.

Bidder Complies YES_____ NO_____

TRAINING:
Upon completion and delivery of the vehicle, training will be provided on the proper and safe use of the vehicle. By factory train technicians.

Bidder Complies YES_____ NO_____

ENGINEERING BLUEPRINTS:

Production drawings will be supplied prior to the pre-construction conference.

Bidder Complies YES_____ NO_____

EXTREME DUTY CHASSIS SPECIFICATION:

DELIVERY
Apparatus, to ensure 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.

Bidder Complies YES_____ NO_____

INFORMATION REQUIRED
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 and drive axle.

Bidder Complies YES_____ NO___

PERFORMANCE TESTS AND REQUIREMENTS
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:

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.

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.

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.

D) The apparatus, fully loaded, shall be capable of obtaining a speed of 70 mph on a level concrete highway with the engine not exceeding its governed rpm (full load).

Bidder Complies YES_____ NO___

FAILURE TO MEET TEST

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. **Bidder Complies YES_____ NO___**

GENERAL CONSTRUCTION

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.

Bidder Complies YES_____ NO___

NFPA CURRENT STANDARDS

This unit must comply with the NFPA standards effective January 1,2009.

Certification of slip resistance of all stepping, standing and walking surfaces must be supplied with delivery of the apparatus.

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.

The manufacturer shall have programs in place for training, proficiency testing and performance for any staff involved with certifications.

An official of the company shall designate in writing who is qualified to witness and certify test results.

Bidder Complies YES_____ NO___

NFPA COMPLIANCY

Apparatus proposed by the bidder shall meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in current edition at time of contract execution.

Bidder Complies YES_____ NO___

GENERATOR TEST

The generator shall be tested, approved, and certified by Underwriters Laboratories at the manufacturer's expense. The test results shall be provided.

Bidder Complies YES_____ NO___

CHASSIS

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

Bidder Complies YES_____ NO___

SEATING CAPACITY

The seating capacity in the cab shall be six (6).

Bidder Complies YES_____ NO___

WHEELBASE

The wheelbase of the vehicle shall be no greater than 190.00".

Bidder Complies YES_____ NO___

GVW RATING
The gross vehicle weight rating shall be 53,000 Lb

Bidder Complies YES_____ NO___

FRAME RAIL WARRANTY
The frame rails shall be guaranteed for the life of the vehicle, which is the 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.

Bidder Complies YES_____ NO___

FRONT AXLE
The front axle capacity shall be minimum of 22,000 Lb.

Bidder Complies YES_____ NO___

WARRANTY, FRONT NON DRIVE AXLE
The non drive axle system shall have a minimum of a three (3) year parts and labor warranty.

Bidder Complies YES_____ NO___

REAR AXLE
The rear axle shall be a Meritor™, the capacity of the axle shall be 31,000lb.

Bidder Complies YES_____ NO___

REAR AXLE WARRANTY
The Meritor™ three (3) year parts and labor warranty shall be provided with this axle, plus an additional two (2) years of parts only coverage. Meritor™ shall also provide a one (1) year parts and labor warranty for wheel seals. The seal warranty shall apply to standard Meritor™ wheel seals and shall not apply to another specified seal. If other seals are specified, the warranty shall be parts only.

Bidder Complies YES_____ NO___

TOP SPEED OF VEHICLE
A rear axle ratio of 4.89 shall be furnished to allow the vehicle to reach a approximate top speed of 70 mph. The Diesel Engine will be programmed to limit top speed in 6Th gear and allow the unit to operate at highway speeds at reduced engine rpm.

Bidder Complies YES_____ NO___

OIL SEALS
Oil seals shall be provided on the front and rear axle. The front oil seals shall have window for viewing

Bidder Complies YES_____

NO___

SUSPENSION REAR
The rear suspension shall be springs. **Bidder Complies YES_____ NO___**

ANTI-LOCK BRAKE SYSTEM
The vehicle shall be equipped with a Wabco 4S4M, anti-lock braking system. The ABS shall provide a four (4) channel anti-lock braking control on both the front and rear wheels. It shall be a digitally controlled system that utilizes microprocessor technology to control the anti-lock braking system. Each wheel shall be monitored by the system. When any particular wheel begins to lockup, a signal shall be sent to the control unit. This control unit then shall reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.

Bidder Complies YES_____ NO___

ANTI-LOCK BRAKE SYSTEM WARRANTY
The Wabco ABS system shall come with a three (3) year or 300,000 mile parts and labor warranty provided by Meritor Wabco Vehicle Control Systems. Bidder Complies YES_____ NO___

BRAKES
The service brake system shall be full air type.

The front brakes shall be Knorr/Bendix disc type with a 17.00" ventilated rotor for improved stopping distance.

The brake system shall be certified, third party inspected, for improved stopping distance.

The rear brakes shall be Meritor™ 16.50" x 7.00" cam operated with automatic slack adjusters.

Bidder Complies YES_____ NO___

ENGINE BRAKE
A Jacob's engine brake is to be installed with the controls located on the instrument panel within easy reach of the driver.

The driver shall be able to turn the engine brake system on/off and have a high, medium and low setting.

The engine brake shall be installed in such a manner that when the engine brake is slowing the vehicle thee brake lights are activated.

The ABS system shall automatically disengage the auxiliary braking device, when required.

Bidder Complies YES_____ NO___

AIR COMPRESSOR, BRAKE SYSTEM
The air compressor shall be a Bendix BA-921 or equivalent with 15.8 cubic feet per minute output at 1250 RPM.

Bidder Complies YES_____ NO___

BRAKE SYSTEM
The brake system shall include:

- Bendix-Westinghouse or equivalent dual brake treadle valve with vinyl covered foot surface.

- A heated automatic moisture ejector on air dryer.
- Total air system capacity of 4,362 cubic inch.

- Two (2) air pressure gauges with red warning light and audible alarm, that activates when air pressure falls below 60 p.s.i.

- MGM spring set parking brake system or equivalent.

- Parking brake operated by a Bendix-Westinghouse PP-1 control valve or equivalent.

- A parking "brake on" indicator light on instrument panel.

- Bendix-Westinghouse SR-1 valve, or equivalent in conjunction with a double check valve system, shall be provided with an automatic spring brake application at 40 p.s.i.

- Wabco System Saver 1200 air dryer or equivalent.

BRAKE LINES
Color coded nylon brake lines shall be provided. The lines shall be wrapped in a heat protective loom where necessary in the chassis.

Bidder Complies YES_____ NO___

AIR INLET
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 step well inside the cab on the driver side. 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.

Bidder Complies YES_____ NO___

ALL WHEEL LOCK-UP
An all wheel lock-up system shall be installed which applies air to the front brakes and uses the spring brake at the rear.

Bidder Complies YES_____ NO___

ENGINE
The chassis shall be powered by a Diesel electronically controlled engine as described below:

- Model Detroit Diesel DD-13 or Cummins ISX engine shall be 500 Horse power

Bidder Complies YES_____ NO___

ENGINE WARRANTY
The engine shall come with a five (5) year or 100,000 mile warranty provided by the Diesel Engine Manufacturer.

Bidder Complies YES_____ NO___

ENGINE INSTALLATION CERTIFICATION
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.

There shall be no exception to any portion of the engine installation certification. Nonconformance shall lead to immediate rejection of bid.

Bidder Complies YES_____ NO___

CONTROLS AND INDICATOR LIGHTS
The following amber indicator lights shall be located on the driver's side of the cab to denote engine information:
- Diesel Particulate Filter (DPF)
- High Exhaust Temperature (HET)
- Malfunction Indicator Lamp (MIL)

A switch to initiate the diesel particulate filter regeneration cycle shall be located on the driver's side instrument panel.

Bidder Complies YES_____ NO___

ENGINE AIR INTAKE

The air intake with Ember Separator shall be mounted high to prevent road dirt and recirculating hot air from entering the engine.

The Ember Separator shall be easily accessible.

.

Bidder Complies YES_____ NO___

EXHAUST SYSTEM

The exhaust system shall be stainless steel from the turbo to 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. An insulation wrap shall be provided on the exhaust pipe between the turbo and DPF for reduction of heat to the cab. A heat deflector shield shall be provided where the tailpipe is routed under any side compartment.

Bidder Complies YES_____ NO___

ENGINE HEATER

A 1000 watt, 120 volt, immersion type engine heater shall be installed. The engine heater shall be wired to the shoreline and be active whenever the shoreline is connected.

Bidder Complies YES_____ NO___

CLUTCH FAN

A fan clutch shall be provided. The fan clutch shall be automatic when the pump transmission is in "Road" and "Pump" position.

Bidder Complies YES_____ NO___

HIGH IDLE

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.

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".

Bidder Complies YES_____ NO___

FUEL TANK

A 65-gallon fuel tank shall be provided and mounted at the rear of the chassis. The tank shall be constructed of 12-gauge, hot rolled steel. It shall be equipped with swash partitions and a vent. To eliminate the effects of corrosion, the fuel tank shall be mounted with stainless steel straps. (no exception).

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

A fill inlet shall be located on the driver's side of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Ultra Low Sulfur - Diesel Fuel Only."

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

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

All fuel lines shall be provided as recommended by the engine manufacturer.

Bidder Complies YES_____ NO___

DIESEL EXHAUST FLUID TANK

A diesel exhaust fluid (DEF) tank shall be provided and mounted in the driver's side body forward of the rear axle.

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

A fill inlet shall be located on the driver's side of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Diesel Exhaust Fluid Only".

The tank shall meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing.

The tank shall include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.

Bidder Complies YES_____ NO___

FUEL SHUTOFF

A shutoff valve shall be installed in the fuel line, at the fuel tank.

Bidder Complies YES_____ NO___

FUEL COOLER

An air to fuel cooler shall be installed in the engine fuel return line.

Bidder Complies YES_____ NO___

COOLANT LINES

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

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

Bidder Complies YES_____ NO___

RADIATOR

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.

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.

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.

Bidder Complies YES_____ NO___

TRANSMISSION

Allison Gen IV, model EVS 4000P, electronic, torque converting, automatic transmission shall be provided.

Two (2) PTO openings should be located on left side and top of converter housing (positions 8 o'clock and 1 o'clock).

A transmission temperature gauge with red light and buzzer shall be installed on the cab instrument panel.

Bidder Complies YES_____ NO___

TRANSMISSION, SHIFTER

A six (6)-speed push button shift module with the 4 + 2 "Mode" button shall be mounted to right of driver on console. Shift position indicator shall be indirectly lit for after dark operation.

The Allison shifter shall be a "double-digit" display model.

The transmission ratio shall be 1st - 3.51 to 1.00, 2nd - 1.91 to 1.00, 3rd - 1.43 to 1.00, 4th - 1.00 to 1.00, 5th - 0.75 to 1.00, 6th - 0.64 to 1.00, R - 4.80 to 1.00.

Bidder Complies YES_____ NO___

TRANSMISSION COOLER

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

Bidder Complies YES_____ NO___

TRANSMISSION WARRANTY

The transmission shall have a five (5) year/Unlimited mileage warranty covering 100% parts and labor. The warranty to be provided by Allison Transmission and not apparatus builder.

Bidder Complies YES_____ NO___

TRANSMISSION FLUID

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

Bidder Complies YES_____ NO___

TIRES

Front tires shall be radials either Goodyear or Michelin highway tread matching axle requirements (NO EXCEPTIONS). The tires shall be mounted on steel disc-type wheels painted red same color as the apparatus.

Rear tires shall be four Goodyear or Michelin radials, all season tread matching axle requirements (NO EXCEPTIONS) The tires shall be mounted on steel disc-type wheels painted red same color as the apparatus..

Bidder Complies YES_____ NO___

EXTREME DUTY-CAB

The cab shall be designed specifically for the fire service and shall be a minimum of 62 inches and not to exceed 67 inches, measure from the center of the front wheel.

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

The cab shall be a full tilt cab style. The engine shall be easily accessible and capable of being removed

with the cab tilted. The cab shall be capable of tilting 45 degrees and 90 degrees with crane assist.

The cab shall be tilted by a hydraulic pump connected to two (2) cab lift cylinders. The cab shall then be locked down by a two (2)-point automatic locking mechanism that actuates after the cab has been lowered.

The lower exposed step area at each door location shall be trimmed with aluminum treadplate and have a grip strut insert in the bottom step.

A chrome handrail shall be provided inside each front cab door, for ease of entry.

All cab and crew cab entry doors shall have power windows.

Flush mounted, chrome plated paddle type door handle shall be provided on the exterior of the cab doors.

All interior cab door handles shall also have flush paddle handles.

The cab doors shall be provided with both interior (rotary knob) and exterior (keyed) locks as required by FMVSS 20. The locks shall be capable of activating when the doors are open or closed. The doors shall remain locked if locks are activated when the doors are opened, then closed.

The door hinge shall be a stainless steel piano type or equivalent.

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

The engine hood shall be insulated for protection from heat and sound. The noise insulation keeps the DBA level within the limits stated in the current NFPA series 1900 pamphlet.

Treadplate shall be overlayed on the outside rear wall of the crew cab except for areas that are not typically visible when the cab is lowered.

All cab glass shall be tinted.

Two (2) sunvisors shall be provided. The sunvisors shall be located above the windshield with one (1) mounted on each side of the cab.

Two (2) Electric windshield wipers with washer shall be provided that meet FMVSS and SAE requirements.

The washer reservoir shall be provided.

A glove box shall be installed in the front dash panel in front of the officer's position.

All cab doors shall have red flashing LED located so that on coming traffic can see them when the cab doors are open. The LED shall be tied to the door open switch.

All cab doors shall have twelve (12") inch reflective stop signs located in manner that on coming traffic can observe them.

All cab doors shall have brush aluminum panel on the interior of the doors.

Bidder Complies YES_____ NO___

<u>CREW CAB WINDOWS</u>

On each side of the crew cab, a window with tinted glass shall be provided.

Bidder Complies YES_____ NO___

DRUG STORAGE COMPARTMENT

A storage compartment shall be provided in the crew cab. This compartment will require two separate doors with different key locks. The placement of this compartment will be determined during pre build conference.

Bidder Complies YES_____ NO___

CAB LIFT

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

The hydraulic pump shall have a manual override for backup in the event of electrical failure.

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

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

Bidder Complies YES_____ NO___

INTERLOCK, CAB LIFT TO PARKING BRAKE

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

Bidder Complies YES_____ NO___

MIRRORS

The .357 Magnum polished mirror, 7.00" x 16.00", shall be mounted on cab doors, one (1) on each side. 8" convex mirrors will also be provided.

Each mirror shall be heated and adjustable with remote controls convenient to the driver.

One 8" K-10 eye ball mirror with bracket shall be provided and mounted on cab roof on officer side.

Bidder Complies YES_____ NO___

DOOR JAMB SCUFFPLATES

All cab doors shall be furnished with a polished stainless steel scuffplate mounted on the striker side of the jamb.

Bidder Complies YES--------NO--------

BUMPER
A one (1) piece, eight (8) gauge, steel bumper, a minimum 10.00" high shall be attached to a bolted modular extension frame constructed of 50,000 psi tensile steel "C" channel mounted directly behind it to provide adequate support strength. The bumper shall be painted red same as the cab.

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.

Bidder Complies YES_____ NO___

MECHANICAL SIREN, (Auxiliary)
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 on the left side. The siren shall be supported y the bumper framework.

The mechanical siren shall be actuated by two (2) foot switches, one (1) located on the officer's side and one (1) on the driver's side.

Bidder Complies YES_____ NO___

AIR HORN Two (2) Grover air horns shall be provided and located, in the front bumper, recessed on the outside of the 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 loss of air, in the air brake system.

AIR HORN CONTROL
Two (2) lanyard rope pull controls shall be provided, one (1) within reach of the driver and one (1) within reach of the officer. A floor switch shall be provided on the officer side. The floor switch shall have a guard on it so the switch cannot be activated accidentally.

Bidder Complies YES_____ NO___

LIFT AND TOW

The finished apparatus must be capable of being lifted by the towing devices specified without structural damage to the chassis extension frame rails.

The lift and tow mounts shall be painted the same color as the frame.

Bidder Complies YES_____ NO___

CAB INTERIOR
The cab dash fascias shall be a flat faced design to provide easy of maintenance and shall be constructed out of painted aluminum.

The engine tunnel shall be padded and covered with a vinyl resistant to oil, grease and mildew.

The headliner shall be installed in both forward and rear cab sections. Headliner material shall be vinyl. A sound barrier shall be part of its composition. Material shall be installed and securely fastened to interior cab ceiling.

Forward portion of cab headliner shall provide easy access for servicing electrical wiring or for other maintenance needs without removing the entire unit.

Bidder Complies YES_____ NO___

CAB FLOOR

The cab and crew cab floor areas shall be aluminum diamond plate,

Bidder Complies YES_____ NO___

CAB DOOR HANDRAILS

The handrails at each cab door shall be recessed into the side of the cab. At a minimum, the handrails shall be flush with the side of the cab.

Bidder Complies YES_____ NO___

CAB INTERIOR UPHOLSTERY

The cab interior upholstery shall be determined.

Bidder Complies YES_____ NO___

INTERIOR PAINT (Cab)

The cab interior metal surfaces shall be painted color to be determined, vinyl texture paint.

Bidder Complies YES_____ NO___

GRAB HANDLE

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.

A long rubber grab handle shall be mounted on the dash board in front of the officer.

Bidder Complies YES_____ NO___

CAB SEATING

A Seats Inc. #911 "or equivalent scissors-action" air-ride high-back style seat 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 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.

The seat back shall be removable for ease of access to components located behind the driver seat.

Bidder Complies YES_____ NO___

SEAT, OFFICER

A Seats Incorporated 911 SCBA or equivalent seat with high-back shall be provided in the cab for the officer. The SCBA cavity shall be adjustable front to rear in 0.50" increments to accommodate different size SCBA bottles.

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.

Bidder Complies YES_____ NO___

HAND HELD SPOTLIGHT

A Collins Pulsar 750 hand held spot/floodlight shall be installed on the officer's side dashboard. The light shall be furnished with a 9.00 foot coil cord and a momentary switch.

Bidder Complies YES_____ NO___

RADIO COMPARTMENT

A radio compartment shall be provided under the officer's seat.

The inside compartment dimensions shall be approximately 14.25" deep x 15.75" across x 8.75" 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.

Bidder Complies YES_____ NO___

SEATING (Rear Facing Crew Cab)
Two (2) rear facing Seats Incorporated 911 SCBA Seats or equivalent shall be provided in the outboard positions in crew cab. The SCBA cavity in each seat shall be adjustable front to rear in 0.50" increments to accommodate different size SCBA bottles.

Moving the SCBA cavity shall be accomplished by unbolting, relocating and rebolting in the desired location.

Seats 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.

SEATING (Forward Facing Crew Cab)
Two (2) forward facing, Seats Incorporated 911 SCBA seats or equivalent shall be provided in the center positions against the cab rear wall. The SCBA cavity in each seat shall be adjustable front to rear in 0.50" increments to accommodate different size SCBA bottles.

Moving the SCBA cavity shall be accomplished by unbolting, relocating and rebolting in the desired location.

Seats shall be furnished with three (3) point shoulder type seat belts. The seat belts shall be furnished with automatic retractors. Extensions shall be provided with the seat belts so the male end can be easily grasped and the female end easily located while sitting in a normal position.

Bidder Complies YES_____ NO___

SEAT UPHOLSTERY

All seats upholstery shall be either Durawear or Turnout Tuff the color of the upholstery will be determine during preconstruction conference.

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Bidder Complies YES_____ NO___

SEAT BELTS (red)
All seating positions in cab and crew cab shall have red seat belts.

Bidder Complies YES_____ NO___

AIR BOTTLE HOLDERS
All SCBA type seats in the cab shall have a "Hands-Free" SMART DOCK auto clamp style bracket in its backrest. For efficiency and convenience, the bracket shall include an automatic spring clamp that allows the occupant to store the SCBA bottle by simply pushing it into the seat back. For protection of all occupants in the cab, in the event of an accident, the inertial components within the clamp shall constrain the SCBA bottle in the seat and shall exceed the NFPA standard of 9G. Bracket designs with manual

restraints (belts, straps, buckles) that could be inadvertently left unlocked and allow the SCBA to move freely within the cab during an accident, shall not be acceptable.

There shall be a quantity of five (5) SCBA brackets.

Bidder Complies YES_____ NO___

SHOULDER HARNESS HEIGHT ADJUSTMENT

All seating positions furnished with three (3)-point shoulder type seat belts, will include a height adjustment. This adjustment will optimize the belts effectiveness and comfort for the seated firefighter.

Bidder Complies YES_____ NO___

CAB SAFETY SYSTEM

The cab shall be provided with a safety system designed to protect occupants in the event of a side roll or frontal impact, and shall include the following:

- **A supplemental restraint system (SRS) sensor shall be installed on a structural cab member behind the instrument panel. The SRS sensor shall perform real time diagnostics of all critical subsystems and shall record sensory inputs immediately before and during a side roll or frontal impact event.**
- **A slave SRS sensor shall be installed in the ceiling of the cab to provide capacity for six (6) crew cab seating positions.**
- **A fault-indicating light shall be provided on the vehicle's instrument panel allowing the driver to monitor the operational status of the SRS system.**
- **Air curtains shall be provided in the outboard bolster of outboard seat backs to provide a cushion between occupant and the cab wall.**
- **Suspension seats shall be provided with devices to retract them to the lowest travel position during a side roll or frontal impact event.**
- **Seat belts shall be provided with pre-tensioners to remove slack from the seat belt during a side roll or frontal impact event.**

ADVANCED SIDE ROLL PROTECTION PACKAGE

An advanced side roll protection system shall be provided. The system shall be a supplemental restraint system designed for use with seat belts. The system shall be designed for a fast or slow vehicle 90-degree roll to the side, where the vehicle comes to rest on its side. The system shall consist of the following key components:

Side air bags shall only be provided outboard of the driver and officer forward positions. The side air bag shall be a tubular structure that extends diagonally across the width of the side window to help keep the occupant's head inside the vehicle and away from the window opening.

An integral suspension seat safety system shall be installed on the driver's seat. When activated, this system shall remove excess slack from the seat belt and retract the seat to its lowest travel position.

Seat belt pretensioners shall be provided in the remaining seating positions. When activated, these pretensioners shall remove excess slack from the seat belt.

Side wall impact-absorbing cushions shall be provided outboard of the crew cab seating positions.

The apparatus shall have four (4) crew seats in the crew cab.

Bidder Complies YES_____ NO___

CAB WARRANTY

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 exceptions)

Bidder Complies YES_____ NO___

CAB INTERIOR LIGHTING

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

- One (1) Clear Dome Light: Located in the center, controlled by automatic door switches.

- Two (2) Adjustable Map Lights: With switches mounted on the cab ceiling.

- A Courtesy Light at Each Door Opening: Controlled by automatic door switches.

Bidder Complies YES_____ NO___

CAB INTERIOR LIGHTING

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

- Two (2) LED, Red/Clear dome light located, one (1) on the officer side and one (1) on the driver side, controlled by the following:

Clear forward light controlled by the door switch and the lens switch.
Red rearward light controlled by the lens switch.

- Two (2) Adjustable Map Lights: With switches mounted on the cab ceiling.

Bidder Complies YES_____ NO___

CREW CAB INTERIOR LIGHTING

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

- Four (4) LED, Red/Clear dome lights located two (2) each side, controlled by the following:

Clear forward lights controlled by the door switch and the lens switch.
Red rearward lights controlled by the lens switch.

- A courtesy light at each door opening, controlled by automatic door switches

Bidder Complies YES_____ NO___

STEP LIGHTS

For reduced overall maintenance costs compared to incandescent lighting, there shall be four (4) LED step lights provided. The lights shall be installed at each cab and crew cab door, one (1) per step, in the driver side front doorstep, driver side crew cab doorstep, passenger side front doorstep and passenger side crew cab doorstep.
The lights shall be activated when the adjacent door is opened.

Bidder Complies YES_____ NO___

CAB DEFROSTER

There shall be a defroster in the cab located under the engine tunnel or equivalent.

The defroster ventilation shall be built into the design of the cab dash instrument panel and shall be easily removable for maintenance.

The defroster shall have a three (3) speed blower, and temperature controls accessible to the driver and officer.

The defroster ducts shall be designed to provide maximum defrosting capabilities for the front cab windows.

Bidder Complies YES_____ NO___

CAB/CREW CAB HEATER

Auxiliary heater shall be provided in the cab. The heaters shall have a three (3) speed blower, and temperature controls accessible to the driver and officer. There shall also be louvers located below the rear facing seat riser and below the driver and officer positions for air flow or equivalent.

Bidder Complies YES_____ NO___

AIR CONDITIONING

A high performance air conditioning system shall be furnished inside the cab and crew cab.

The air conditioning system shall perform as follows:

In 100 degree Fahrenheit ambient temperature with 50 percent relative humidity and at maximum compressor speed, the cab and crew cab shall cool down to 75 degrees Fahrenheit within 30 minutes. Actual test results of the air conditioning system, verifying this performance requirement, shall be submitted at delivery or equivalent.

A 19.1 cubic inch compressor shall be installed on the engine.

There shall be air flow outlets located in the following locations or equivalent locations:

- Two (2) in the front of the cab for the driver and the officer
- Six (6) in the crew cab, mounted in ceiling, positioned to maximize cooling

The evaporator units shall have an adequate BTU rating to meet the performance specifications.

The air conditioning system shall have adjustable air outlets incorporated into the cab ceiling at both the driver, officer, and crew cab positions.

The air conditioner refrigerant shall be R-134A, installed by a certified technician.

Bidder Complies YES_____ NO___

INTERIOR CAB INSULATION

The cab and crew cab walls shall be insulated with 2.00" insulation where possible and the roof with 1.00" insulation to aid in cooling.

The insulation shall be covered with a vinyl liner or a metal panel painted to match the interior.

Bidder Complies YES_____ NO___

CAB INSTRUMENTATION

Instrument panel controls and switches shall be identified to function by imprinted word(s) adjacent to each item. Actuation of the headlight switch shall illuminate ("back-lite") wording for after dark operation. Turn signal and high beam headlight indicator lights shall also be provided.

To avoid confusion, warning indicators shall be (where possible) the "dead front" type, meaning the warning light and word identification of the same, does not show up unless it is necessary. The built-in emergency light switch panel shall have a master switch plus individual switches for selective control.

The switch panel shall be located on top of the engine tunnel within easy reach of the driver.

Switches shall be rocker type containing an indicator light, which is an integral part of the switch. The emergency switch control panel configuration shall be as such that the driver's shall be the primary user. Instrument panel gauges, vehicle lights and other electrical accessories shall have proper size wiring to accommodate the expected current load. Wiring shall meet SAE J-1128 specifications for high temperature (250 degrees Fahrenheit minimum) conditions and shall be color, number and function coded.

Cab instruments and controls shall be conveniently located within the forward cab section. Gauges and emergency vehicle switches shall be installed on removable panels for ease of service. The following gauges and controls shall be furnished:

- Speedometer/Odometer: Electric

- Tachometer: Electric

- Hourmeter for Engine

- Engine Oil Pressure Gauge: Red warning light and an audible alarm

- Engine Coolant Temperature Gauge: Red warning light and an audible alarm

- Automatic Transmission Oil Temperature Gauge: Red warning light and an audible alarm
- Engine Oil Pressure Gauge: Red warning light and an audible alarm

- Engine Coolant Temperature Gauge: Red warning light and an audible alarm

- Automatic Transmission Oil Temperature Gauge: Red warning light and an audible alarm

- Two (2) Air Pressure Gauges: Red warning lights and an audible alarm

- Voltmeter: Warning light and audible alarm indicating high or low voltage

- Low Coolant Indicator Light (amber): Audible alarm

- Fuel Gauge

- Low Fuel Indicator Light: Audible alarm

- Ignition Switch: Green indicator light

- Starter Control

- Heater Controls

- Headlight Switch

- Self Canceling Turn Signal Switch (arm): Visual indicators

- Headlight Dimmer and Hazard Switch: Incorporated into turn signal arm

- Warning Light Switch Control Panel

- Parking Brake Control: Red indicator light

- Horn Button: Center of the steering wheel (for dual electric horns)

- Control to Check Engine Warning System Indicators.

- High Air Restriction Warning Indicator Light (electronic).

- One two (2)-speed Windshield Wiper Control with Intermittent Feature. The control shall also have a "return to park" provision, which allows the wipers to return to the stored position when the wipers are not in use

- Windshield Washer Controls.

Bidder Complies YES_____ NO___

RADIO ANTENNA MOUNT

Eight (8) antenna mounting bases, with coax cable and weatherproof cap shall be provided for a two way radio.

The mount shall be located during preconstruction meeting by Guilford Fire Department..

The cable shall be routed to the officer side seat box with enough cable for customer to route to the instrument panel if needed.

Bidder Complies YES_____ NO___

SWITCH PANELS

The built-in emergency light switch panel shall have a master switch plus individual switches for selective control. The switch panel shall be located in the "overhead" position above the windshield on the driver's side to allow for easy access. Switches shall be rocker type with an indicator light, of which is an integral part of the switch.

Bidder Complies YES_____ NO___

ELECTRICAL POWER CONTROL SYSTEM

A compartment shall be provided in or under the cab to house the vehicles electrical power and signal circuit protection and control components. The power and signal protection and control compartment shall contain circuit protection devices and power control devices. Power and signal protection and

control components shall be protected against corrosion, excessive heat, excessive vibration, physical damage and water spray.

Serviceable components shall be readily accessible.

Circuit protection devices, which conform to SAE standard, shall be utilized to protect each circuit. All circuit protection devices shall be sized to prevent wire and component damage when subjected to extreme current overload. General protection circuit breakers shall be Type-I automatic reset (continuously resetting) and conform to SAE J553 or J258. PTO power circuits shall be protected by Type III manual reset non-cycling circuit breakers conforming to SAE J553 or J258 which remain open until manually reset. When required, automotive type fuses conforming to SAE J554, J1284, J1888 or J2077 shall be utilized to protect electronic equipment.

Power control relays and solenoids shall have a direct current (dc) rating of 125 percent of the maximum current for which the circuit is protected.

Visual status indicators will be supplied to identify control safety interlocks and vehicle status. In addition to visual status indicators, audible alarms designed to provide early warning of problems before they become critical will be used.

Bidder Complies YES_____ NO___

VOLTAGE MONITOR SYSTEM

A voltage monitor system shall be provided to indicate the status of each battery system connected to the vehicles electrical load. The monitor system shall provide visual and audio warning when the system voltage is above or below optimum levels.

Bidder Complies YES_____ NO___

POWER AND GROUND STUD

Three (3) forty (40) amp 12-volt power stud and a grounding stud shall be provided in the electrical component compartment for 2-way radio equipment.

Bidder Complies YES_____ NO___

EMI/RFI PROTECTION

The electrical system proposed shall include means to control undesired electromagnetic and radio frequency emissions. State of the art electrical system design and components shall be used to insure radiated and conducted EMI (electromagnetic interference) and RFI (radio frequency interference) emissions are suppressed at their source.

The apparatus proposed shall have the ability to operate in the electromagnetic environment typically found in fire ground operations. The contractor shall be able to demonstrate the EMI and RFI testing has been done on similar apparatus and certifies that the vehicle proposed meets SAE J551 requirements.

EMI/RFI susceptibility shall be controlled by applying immune circuit designs, shielding, twisted pair wiring and filtering. The electrical system shall be designed for full compatibility with low level control signals and high powered 2-way radio communication systems. Harness and cable routing shall be given careful attention to minimize the potential for conducting and radiated EMI-RFI susceptibility.

Bidder Complies YES_____ NO___

PERIMETER SCENE LIGHTS, CAB LED

There shall be grommet mount weatherproof LED light provided for each cab door. Lighting shall be designed to provide illumination on areas under the driver, officer, and crew cab riding area exits, which shall be activated automatically when the exit doors are opened and by the same means as the body

perimeter lights.

The lighting shall be capable of providing illumination at a minimum level of one (1) foot-candle on ground areas within 30.00" of the edge of the apparatus in areas which personnel climb in or out of the apparatus or descend from the apparatus to the ground level.

Bidder Complies YES_____ NO___

BODY PERIMETER SCENE LIGHTS LED

There shall be a total of six (6) LED grommet mount, weatherproof lights provided on the apparatus body. Each light shall consist of a weatherproof light, rubber mount and pigtail kit. The lights shall be mounted in the following locations: two (2) lights shall be under the rear step area, one (1) light shall be on each side of body under front compartment and one (1) light shall be on each side of the pump panel under the running boards.

The lighting shall be capable of providing illumination at a minimum level of one (1) foot candle on ground areas, within 30.00" of the edge of the apparatus, in areas designed for personnel to climb onto the apparatus or descend from the apparatus to the ground level.

The lights shall be activated by parking brake.

Bidder Complies YES_____ NO___

12 VOLT TO 120 VOLT INVERTER 1500 WATT

The manufacturer shall supply an inverter with two (2) 120 outlets to be located in cab. Location of both the inverter and outlets will be determined during pre-build conference.

Bidder Complies YES_____ NO___

ALTERNATOR

A C.E. Niehoff, model C 680-1,alternator shall be provided or equivalent. It shall have a rated output current of 430 amp as measured by SAE method 156. Also, it shall 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.

Bidder Complies YES_____ NO___

ELECTRONIC LOAD MANAGEMENT

A Kussmaul electronic load management (ELM) system shall be provided that monitors the vehicles 12-volt electrical system, and automatically reduces the electrical load in the event of a low voltage condition and by doing so, ensures the integrity of the electrical system.

The ELM shall monitor the vehicle's voltage while at the scene (parking brake applied). It shall sequentially shut down individual electrical loads when the system voltage drops below a preset value. Five (5) separate electrical loads shall be controlled by the load manager. The ELM shall sequentially re-energize electrical loads as the system voltage recovers.

The (ELM) also includes sequencer function for the five (5) managed loads and two (2) additional.

Bidder Complies YES_____ NO___

AMP DRAW REPORT

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.

The manufacturer of the apparatus shall provide the following:

1) **Documentation of the electrical system performance tests.**

2) A written load analysis, which shall include the following:

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.

All of the above listed items shall be provided by the bidder per the applicable NFPA 1901 or 1906 Current Edition).

Bidder Complies YES_____ NO___

EXTERIOR LIGHTING

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

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.

Five (5) LED clearance and marker lights shall be installed across the leading edge of the cab.

Bidder Complies YES_____ NO___

WARNING LIGHTS (Cab Face)

Four (4) Whelen Model 60*02F*R Super LED lights shall be installed on the cab face.

The outside flashing LEDs shall be red Super LED/clear lens.

The inside steady burning LEDs shall be red Super LED/clear lens.

All of these lights shall be activated by the same switch in the cab.

To meet NFPA requirements, the inside lights shall be disabled if clear when the parking brake is applied.

Bidder Complies YES_____ NO___

WATER TANK

Booster tank shall have a capacity of 750 gallons and be constructed of polypropylene plastic by United Plastic Fabricating, Incorporated.

Tank joints and seams shall be nitrogen welded inside and out.

Tank shall be baffled in accordance with NFPA Bulletin 1901 requirements.

Baffles shall have vent openings at both the top and bottom to permit movement of air and water between compartments.

Longitudinal partitions shall be constructed of .38" polypropylene plastic and shall extend from the bottom of the tank through the top cover to allow for positive welding.

Transverse partitions shall extend from 4.00" off the bottom of the tank to the underside of the top cover.

All partitions shall interlock and shall be welded to the tank bottom and sides.

Tank top shall be constructed of .50" polypropylene. It shall be recessed .38" and shall be welded to the tank sides and the longitudinal partitions.

Tank top shall be sufficiently supported to keep it rigid during fast filling conditions.

Construction shall include 2.00" polypropylene dowels spaced no more than 30.00" apart and welded to the transverse partitions. Two (2) of the dowels shall be drilled and tapped (.50" diameter, 13.00" deep) to accommodate lifting eyes.

Two sumps shall be provided at the bottom of the water tank located front and rear of the tank that are 8.00" long x 8.00" wide x 6.00" deep. The intent of this requirement is that no matter which angle the truck is at the entire tank of water can be removed while from the tank.

Sump shall include a drain plug and the tank outlet.

Tank shall be installed in a fabricated cradle assembly constructed of structural steel.

Mounting system shall be approved by the tank manufacturer.

Fill tower shall be furnished with a screen and a hinged cover.

An overflow pipe, shall be installed approximately halfway down the fill tower and extend through the water tank and exit to the rear of the rear axle.

Two (2) sleeves shall be provided in the water tank for plumbing to the rear.

Bidder Complies YES_____ NO___

HOSE BED

The hose body shall be fabricated of corrosion resistant, low carbon austenitic, brushed and painted 304L stainless steel. Due to superior corrosion resistance of 300 stainless grades, other grades of austenitic stainless steels, or any grade of ferritic or martensitic stainless, shall not be acceptable.

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

Hose body width shall be minimum of 68.00" inside.

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

The upper inside area of the beavertails shall be covered with brushed stainless steel to prevent damage to painted surface when hose is removed.

Flooring of the hose bed shall be removable aluminum grating with the top surface corrugated to aid in hose aeration. The grating slats shall be a minimum of .50" x 4.50" with spacing between slats for hose ventilation.

Hose bed shall accommodate Bed #1 300' of 2.5" Bed # 2 1000' of 4.00" Bed # 3 1000' of 4.00" Bed # 4 300' of 2.5”".

Three (3) adjustable hosebed dividers shall be furnished for separating hose.

Each divider shall be constructed of a .125" brushed aluminum sheet fitted and fastened into a slotted, 1.50" diameter radiused extrusion along the top, bottom, and rear edge.

Partition shall be fully adjustable by sliding in tracks, located at the front and rear of the hose bed.

Divider shall be held in place by tightening bolts, at each end.

Acorn nuts shall be installed on all bolts in the hose bed which have exposed threads.

A vinyl hose bed cover shall be provided.

Bidder Complies YES_____ NO___

HOSEBED HOSE RESTRAINT

The hose in the hosebed shall be restrained by a black nylon Velcro strap at the top of the hosebed. At the rear of the hosebed, 2.00" black nylon webbing with a 1.50" x 4.00" box pattern shall attach at the top rear outside corners with seat belt buckle fasteners. The webbing shall have straps connected with seat belt buckle fasteners located at the rear body sheet below the hosebed.

Bidder Complies YES_____ NO___

RUNNING BOARDS

Running boards shall be fabricated of .125" bright aluminum treadplate.

Each running board shall be supported by a welded 2.00" square tubing and channel assembly, which shall be bolted to the pump compartment substructure.

Running boards shall be 12.75" deep and spaced .50" away from the pump panel.

A splashguard shall be provided above the running board treadplate.

Bidder Complies YES_____ NO___

TAILBOARD

Rear step shall also be constructed of .125" bright aluminum treadplate and spaced .50" from the body, as well as supported by a structural steel assembly.

The rear tailboard shall be 16.00" deep.

The exterior side shall be flanged down and in.

Flanges shall not be notched.

Entire rear surface between the beavertails shall be covered with smooth aluminum.

Inside surface of each beavertail in the hose bed area shall be covered with stainless steel to protect the paint finish.

The remaining inside surface of the beavertails shall be covered with bright aluminum treadplate.

Bidder Complies YES_____ NO___

COMPARTMENTATION

Body and compartments shall be fabricated of corrosion resistant, low carbon austenitic, brushed and painted 304L stainless steel. Due to superior corrosion resistance of 300 stainless grades, other grades of austenitic stainless steels, or any grade of ferritic or martensitic stainless, shall not be acceptable.

Compartment flooring shall be of the sweep out design with the floor higher than the compartment door lip.

Bidder Complies YES_____ NO___

RUNNING BOARDS

Running boards shall be fabricated of .125" bright aluminum treadplate.

Each running board shall be supported by a welded 2.00" square tubing and channel assembly, which shall be bolted to the pump compartment substructure.

Running boards shall be 12.75" deep and spaced .50" away from the pump panel.

A splashguard shall be provided above the running board treadplate.

Bidder Complies YES_____ NO___

HITCH RECEIVER

A hitch receiver shall be installed at the rear of the apparatus.

The hitch shall be constructed of heavy steel tubing and reinforced to the truck framework, for the receiving portion. This shall be a Class III/IV trailer hitch. A class IV rating shall be obtained only when a weight distributing hitch is used.

Slide-in portion shall be held in place by one (1) safety pin with clip.

The trailer electrical connection shall be a seven (7)-way flat blade recreational vehicle connector for trailer wiring compatible with electric brake systems, and a second connector with inverted ground meeting SAE J560 standards providing an auxiliary connection for warning devices.

Bidder Complies YES_____ NO___

COMPARTMENTATION, DRIVER'S SIDE

A full height, vertically hinged, single door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be approximately 34.50" wide x 67.63" high x 25.75" deep. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment should be approximately 30.00" wide x 63.00" high.

A vertically hinged, Double doors compartment over the rear wheels shall be provided. The interior dimensions of this compartment should be approximately 66.50" wide x 32.88" high x 25.75" deep. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment should be approximately 59.50" wide x 28.25" high.

A positive door holder shall be furnished with this compartment There shall be a field adjustable, three-position bracket mounted on the vertical side door opening that shall allow the door to be held open at 87°, 90°, or 93°.

Closing of the door shall not require releasing, unlocking, or unlatching any mechanism.

A full height, vertically hinged, double door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment should be approximately 47.50" wide x 67.63" high x 25.75" deep. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment should be approximately 46.00" wide x 63.00" high.

A positive door holder shall be furnished with this compartment.

Bidder Complies YES_____ NO___

COMPARTMENTATION, PASSENGER'S SIDE

A vertically hinged, single door compartment in the lower area ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 34.50" wide x 47.13" high x 25.88" deep in the lower 26.00" of the compartment and 12.00" deep in the remaining upper portion. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 30.00" wide x 42.50" high.

A positive door holder shall be furnished with this compartment.

A three-quarter broom compartment with one horizontally hinged, drop-down door in the area above the rear wheels shall be provided. The interior dimensions of this compartment shall be 66.50" wide x 12.38" high x 12.00" deep. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 59.50" wide x 7.75" high. The drop-down door shall be furnished with two chain-style door holders with a plastic covering around the chain. Closing of the door shall not require releasing, unlocking, or unlatching any mechanism.

A vertically hinged, double door compartment in the lower area behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 47.50" wide x 47.13" high x 25.88" deep in the lower 26.00" of the compartment and 12.00" deep in the remaining upper portion. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 46.00" wide x 42.50" high.

A positive door holder shall be furnished with this compartment

Bidder Complies YES_____ NO___

DOORS, SIDE COMPARTMENT

All hinged compartment doors shall be lap style with double panel construction and shall be a minimum of 1.50" thick.

Doors shall be fabricated of corrosion resistant, low carbon austenitic, brushed and painted 304L stainless steel. Due to superior corrosion resistance of 300 stainless grades, other grades of austenitic stainless steels, or any grade of ferritic or martensitic stainless, shall not be acceptable. Outer panel shall be made of 14-gauge and a full interior panel shall be made of 16-gauge. To provide additional door strength a "C" section reinforcement shall be installed between the outer and interior panels.

Doors shall be provided with a closed cell rubber gasket around the surface that laps onto the body. A second heavy-duty automotive rubber molding with a hollow core shall be installed on the door framing that seals onto the interior panel, to ensure a weather resisting compartment.

All compartment doors shall have polished stainless steel continuous hinge with a pin diameter of .25" that is bolted or screwed on with stainless steel fasteners. (Hinges which are welded on shall not be acceptable.)

All door lock mechanisms shall be fully enclosed within the door panels to prevent fouling of the lock in the event equipment inside shifts into the lock area.

Doors shall be latched with recessed, polished stainless steel Hansen 6” Bent"D" ring handles.

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All doors should utilize automotive rotary latches. Inside release on the inside door is not expectable. All latches shall be activated by corrosion resistant steel rods with adjustable ball joint swivel ends. All rods shall include an anti-rattle device to prevent noise.

To prevent corrosion caused by dissimilar metals, compartment door handles shall not be attached to outer door panel with screws. A rubber gasket shall be provided between the "D" ring handle and the door.

Bidder Complies YES_____ NO___

COMPARTMENTATION, REAR

A dutch door compartment above the rear tailboard shall be provided. Interior dimensions of this compartment shall be 40.00" wide x 40.75" high x 25.88" deep. Depth of the compartment shall be calculated with the compartment door closed.

Rear compartment shall be open into the rear side compartments.

Clear door opening of this compartment shall be 34.50" wide x 40.00" high.

A louvered, removable access panel shall be furnished on the back wall of the compartment.

Door shall be a single pan bright aluminum treadplate dutch style with a drop-down upper section.

A Hannay booster reel model # EF-28-23-24-RT shall be provided in this compartment. The reel will not be plumbed but 12volt DC power shall be provided for the reel in this compartment.

Bidder Complies YES_____ NO___

VERTICAL DOUBLE DOOR MODIFICATION

The locking compartment doors shall be supplied with a slam style latch at both the top and bottom of the door. The free door shall not be supplied with a latch. Both doors must open with a single exterior "D" ring handle. Configurations that require the door to be unlatched from the interior of the door are not acceptable.

The following compartment doors shall be supplied with the special latch all side compartment

A total of six (6) doors shall be supplied with this special latch style.

Bidder Complies YES_____ NO___

REVERSE HINGED DOOR

One (1) compartment door, located on compartment D3, shall have the hinge at the rear of the door.

Bidder Complies YES_____ NO___

PULL-OUT TRAY

There shall be two (2) slide-out trays with 2.00" sides and a minimum capacity of 500 pounds provided. Capacity rating shall be in the extended position.

Slides shall be General Device ball bearing type for ease of operation and years of dependable service.

Automatic locks shall be provided for both the "in" and "out" positions. The trip mechanism for it shall be located at the front of the tray for ease of use with a gloved hand.

Tray location shall be One (1) each in compartment D1 and D3.

Heavy-duty steel angle iron assembly shall support the body under the compartment floor. It shall be attached to the chassis frame for load transfer and to reduce stress on body.

Bidder Complies YES_____ NO___

SLIDE-OUT/TILT-DOWN TRAY

There shall be one (1) slide-out tray provided.

The capacity rating (in the extended position) shall be 215 pounds minimum.

Approximately two-thirds of the tray shall slide-out from its stored position and shall tilt 30 degrees down from horizontal. The vertical position within the compartment shall be adjustable.

Construction shall consist of .188" thick aluminum for the tray bottom and end, and special aluminum extrusions for the tray sides, front and tracks.

The tray corners shall be welded for strength and rigidity.

The tray shall be equipped with ball bearing rollers for smooth operation.

Two spring loaded locks shall be provided at the front of the tray, one on each end.

Rubber padded stops shall be provided for both the in out tray position.

The tray(s) shall be located in compartment D2.

Bidder Complies YES_____ NO___

RUB RAIL

The side and rear of the compartments shall be protected with a black 1.50" thick x 2.50" high plastic rub rail. .50" rubber spacers shall be included between the rubrail and the body.

A quantity of one (1) rub rails shall be provided located at the bottom edge of the body sides.

Rubrails shall be fastened to the sides of the body with 1/2" stainless bolts and washers on a minimum of 12" centers.

Rubrails shall be tapered on each end of the body and run the full length.

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

The intermediate rubrail shall be located high on the break between the body and hatch compartments.

Bidder Complies YES_____ NO___

AGGRESSIVE WALKING SURFACE

All exterior surfaces designated as stepping, standing, and walking areas shall comply with the required average slip resistance of the current NFPA standards.

Bidder Complies YES_____ NO___

TREADPLATE TRAY

A bright aluminum treadplate box shall be provided on top of the passenger side compartmentation. The tray shall be approximately 3.00" high x 152.00" long. The tray shall have four seat belt style straps. The floor of the tray shall have aluminum grating slats with spacing provided for aeration. Drain holes shall be provided.

Bidder Complies YES_____ NO___

ADJUSTABLE SHELVES

There shall be six (6) shelves, with a minimum capacity of 215 pounds provided. The shelf construction shall consist of stainless steel with 2.00" sides. Each shelf shall be infinitely adjustable by means of a threaded fastener, which slides in a track.

The location of the six (6) shelves shall be to be determined at plan review.

Bidder Complies YES_____ NO___

MOUNTING TRACKS

There shall be five (5) sets of tracks for mounting shelf(s) in compartments D1,D2,D3,P1,P3. These tracks shall be installed vertically to support the adjustable shelf(s).

Bidder Complies YES_____ NO___

BODY FENDER CROWNS

Stainless steel fender crowns shall be provided around the rear wheel openings. These fender crowns must be wide enough to prevent splashing onto the body from the 315/80R22.5 tires on a 31,000 lb rear axle.

A rubber welting shall be provided between the body and the crown to seal the seam and restrict moisture from entering.

A dielectric barrier shall be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.

Bidder Complies YES_____ NO___

HARD SUCTION HOSE

Three (3) lengths of 6.00" clear corrugated PVC hard suction hose, 10' in length, shall be provided. The hose shall be equipped with a long handle female coupling on one (1) end and a rocker lug male coupling on the other end. Couplings shall be hard coated aluminum.

Bidder Complies YES_____ NO___

HOSE TROUGHS

Hard suction hose shall be carried above the left compartment in V-shaped troughs and held in place by chrome plated, quarter turn, spring loaded clamps.

Troughs shall be constructed of steel and painted job color.

The size and length of the hard suction hose that shall be carried is 6" x 10'.

Bidder Complies YES_____ NO___

HOSE TROUGH

One (1) trough for hard suction hose storage shall be installed on the hose bed side of hydraulic ladder rack system. The trough shall be constructed of aluminum and painted job color. The length of hard suction hose that shall be carried on the rack shall be 6" x 10'.

The hard suction hose shall be held in place by velcro straps.

Bidder Complies YES_____ NO___

HANDRAILS

The handrails shall be 1.25" diameter anodized aluminum extrusion, with a ribbed design, to provide a positive gripping surface.

Chrome plated end stanchions shall support the handrail. Plastic gaskets shall be used between end stanchions and any painted surfaces.

Drain holes shall be provided in the bottom of all vertically mounted handrails.

- Four (4) handrails shall be provided, two above each side pump panel.

- One (1) vertical handrail shall be provided on the driver's side body, on the front bulkhead door frame.

- One (1) full width horizontal handrail shall be provided below the hose bed at the rear of the apparatus.

Bidder Complies YES_____ NO___

EXTENSION LADDER

There shall be a 24', two (2) section, aluminum, Duo-Safety, Series 900-A extension ladder provided.

Bidder Complies YES_____ NO___

ROOF LADDER

There shall be a 14' aluminum, Duo-Safety, Series 775-A roof ladder provided.

Bidder Complies YES_____ NO___

FOLDING LADDER

One (1) 10' aluminum, Series 585-A Duo-Safety folding ladder shall be installed on the hydraulic ladder rack.

Bidder Complies YES_____ NO___

LADDER RACK

Ground ladders shall be mounted above right side of body compartments in a Zico Quic-Lift electric ladder lowering system. The ladder rack mounts shall be powered by two (2), 12-volt electric actuators.

The electric controls shall be located in such a manner to allow the operator full view of the area in which the ladders shall be lowered.

The electric actuator control shall have a master switch and be interlocked to prevent operation should a compartment door, in the travel area of the ladder bracket, be in the open position.

A three tube pike pole holder shall be a part of the ladder rack.

Bidder Complies YES_____ NO___

LADDER RACK INTERLOCK AND NOT STOWED INDICATOR LIGHT

An interlock shall be provided to prevent operation of the ladder rack unless the apparatus parking brake has been activated.

A steady red indicator light shall be located on the cab instrument panel and illuminated when the ladder rack is not in the stowed position. The light shall be labeled "Ladder Rack". In addition, the "Do Not Move Apparatus" light located in the cab shall be activated when the ladder rack is not in the stowed position.

Bidder Complies YES_____ NO___

LIGHTS, FLASHING, LADDER RACK

Flashing amber lights facing the front and rear shall be provided on the ladder rack and activated whenever the rack is in the down position.

Bidder Complies YES_____ NO___

PIKE POLE COMPARTMENT

A pike pole compartment shall be provided and located at the passenger side of the vehicle.

The compartment shall be built into the upper section of the body compartments and shall have three (3) aluminum tubes for pike pole storage.

Access to the poles shall be at the rear of the truck through a stainless steel drop-down door.

Bidder Complies YES_____ NO___

REAR FOLDING STEPS

Bright finished, non-skid folding steps with a luminescent coating that is rechargeable from any light source and can hold a charge for up to 24 hours shall be provided at the rear. Each step shall incorporate an LED light to illuminate the stepping surface. The steps can be used as a hand hold with two openings wide enough for a gloved hand.

Bidder Complies YES_____ NO___

MIDSHIP FIRE PUMP

Midship fire pump shall be a Hale QMAX-150, 1500 gpm single (1) stage midship mounted centrifugal type.

Pump shall be the class "A" type.

Pump shall deliver the percentage of rated discharges at the pressures indicated below:

- **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.**

Entire pump and both suction and discharge passages shall be hydrostatically tested to a pressure of 500 psi.

Pump shall be fully tested at the pump manufacturer's factory to the performance requirements as outlined by the current NFPA 1901 standards and shall be free from objectionable pulsation and vibration.

Pump body and related parts shall be of fine grain, alloy cast iron with a minimum tensile strength of 30,000 psi (2041.2 bar).

All moving parts in contact with water shall be of high quality bronze or stainless steel. Pumps utilizing castings made of lower tensile strength cast iron shall not be acceptable.

Pump body shall be horizontally split, on a single plane in two (2) sections, for easy removal of entire impeller assembly, including wear rings and bearings from beneath the pump, without disturbing pump piping or the mounting of the pump in the chassis.

Pump shall have one (1) double suction impeller. The pump body shall have two (2) opposed discharge volute cutwaters to eliminate radial unbalance.

Pump impeller shall be hard, fine grain bronze of the mixed flow design, accurately machined, hand-ground, and individually balanced. The vanes of the impeller intake eyes shall be hand-ground and polished to a sharp edge. They shall be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.

Impeller clearance rings shall be bronze and easily renewable without replacing impeller or pump volute body. They shall be of the wrap-around double labyrinth design for maximum efficiency.

Pump shaft shall be electric furnace heat-treated, corrosion resistant stainless steel. It shall be super-finished under packing with galvanic corrosion (zinc separators in packing) protection for longer shaft life. Pump shaft shall be sealed with double oil seal to keep road dirt and water out of drive unit.

Pump shaft shall be rigidly supported by three (3) bearings for minimum deflection. A high lead bronze sleeve bearing shall be located immediately adjacent to the impeller (on the side opposite of the drive unit). The sleeve bearing shall be automatically oil lubricated and pressure balanced to exclude foreign material. The remaining bearings shall be heavy-duty, deep groove ball bearings in the gearbox and shall be splash lubricated.

Pump shaft shall have one (1) packing gland located on inlet side of the pump, and shall be of the split design for ease of repacking.

Packing gland shall be a full-circle threaded design to exert uniform pressure on packing and prevent "cocking" and uneven packing load when it is tightened --(No exceptions).

The packing gland shall be easily adjusted by hand (with a rod or screwdriver), no special tools or wrenches required.

Packing rings shall be of a unique, permanently lubricated, long-life graphite composition, and have sacrificial zinc foil separators to protect the pump shaft from galvanic corrosion.

Bidder Complies YES_____ NO_____

PUMP TRANSMISSION

The drive unit shall be cast and completely manufactured and tested at the pump manufacturer's factory. The pump drive unit shall be of sufficient size to withstand up to 16,000 foot/pound of torque from the engine in both road and pump operating conditions. The drive unit shall be designed with ample lubrication reserve to maintain the proper operating temperature.

The gearbox drive shafts shall be of heat treated chrome nickel steel and at least 2.75 inches in diameter, on both the input and output drive shafts. They shall be designed to withstand the full torque of the engine in both road and pump operating conditions. All gears, both drive and pump, shall be of the highest quality, electric furnace, chrome nickel steel. Bores shall be ground to size and teeth integrated,

crown-shaved and hardened, to give an extremely accurate gear for long life, smooth, quiet running and higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrust.

The pump ratio shall be selected by the apparatus manufacturer to provide the maximum performance with the engine and transmission selected. Three (3) green warning lights shall be provided to indicate to the operator(s) when the pump has completed the shift from Road to Pump position. Two (2) lights shall be located in the truck driving compartment and one (1) light on pump operator's panel, adjacent to the throttle control.

Bidder Complies YES_____ NO_____

AIR PUMP SHIFT

Pump shift engagement shall be made by a two (2) position sliding collar, actuated pneumatically (by air pressure), with a three (3) position air control switch located in the cab. A manual back-up shift control shall also be located on the drivers side pump panel.

Two (2) indicator lights shall be provided adjacent to the pump shift inside the cab. One (1) green light shall indicate the pump shift has been completed and be labeled "pump engaged". The second green light shall indicate when the pump has been engaged and the chassis transmission is in pump gear. This indicator light shall be labeled "OK to pump".

Another green indicator light shall be installed adjacent to the hand throttle on the pump panel and indicate either the pump is engaged and the road transmission is in pump gear, or the road transmission is in neutral and the pump is not engaged. This light shall be labeled "Warning: Do not open throttle unless light is on".

The pump shift control in the cab shall be illuminated to meet NFPA requirements.

Bidder Complies YES_____ NO_____

TRANSMISSION LOCK-UP

The direct gear transmission lock-up for the fire pump operation shall engage automatically when the pump shift control, in the cab, is activated.

Bidder Complies YES_____ NO_____

AUXILIARY COOLING SYSTEM

A supplementary heat exchange cooling system shall be provided to allow the use of water from the discharge side of the pump for cooling the engine water. Heat exchanger shall be cylindrical type and shall be a separate unit. It shall be installed in the pump or engine compartment with the control located on the pump operator's control panel. Exchanger shall be plumbed to the master drain valve.

Bidder Complies YES_____ NO_____

INTAKE RELIEF VALVE

A relief valve shall be installed on the suction side of the pump preset at 125 psig.

Relief valve shall have a working range of 50 psig to 250 psig.

Outlet shall terminate below the framerails with a 2.50" National Standard hose thread adapter and shall have a "do not cap" warning tag.

Bidder Complies YES_____ NO_____

PRESSURE GOVERNOR

This apparatus shall be equipped with a FRC Pump Boss engine/pump governor/throttle system that is connected directly to the Electronic Control Module (ECM) mounted on the engine. The Pump Boss is to operate as a pressure sensor (regulating) governor (PSG). THE THROTTLE CONTROL KNOB SHALL OPERATE IN THE COUNTER CLOCKWISE WHEN INCREASING RPMs.

Bidder Complies YES_____ NO_____

HALE ESP PRIMING PUMP

Pump primer shall be a positive displacement vane type, electrically driven, and conforming to standards outlined in NFPA pamphlet #1901.

A push-pull control shall be located at the pump operator's panel. This valve shall utilize a switch arrangement so that as the valve is manually opened, a plunger closes the switch and the primer motor is energized.

A second priming valve and push-pull control shall be plumbed to the front suction piping. The second control shall be located at the pump operator's panel.

Primer motor shall be environmentally safe, self lubricating style.

Bidder Complies YES_____ NO_____

PUMP MANUALS

one (1) pump manuals from the pump manufacturer shall be furnished in compact disc format with the apparatus. Manuals shall cover pump operation, maintenance, and parts.

Bidder Complies YES_____ NO_____

PLUMBING

All inlet and outlet plumbing, 3.00" and smaller, shall be plumbed with either stainless steel pipe or synthetic rubber hose reinforced with high-tensile polyester braid. If hose is used, it must have a minimum burst rating of 1,000 psi and be equipped with high pressure couplings. Larger inlets and outlets shall be threaded or welded black iron pipe. Small diameter secondary plumbing such as drain lines shall be stainless steel, brass or hose.

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.

All lines to drain through either 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.

All water carrying gauge lines shall be of flexible polypropylene tubing.

Bidder Complies YES_____ NO_____

MAIN PUMP INLETS

A 6.00" pump manifold inlet shall be provided on each side of the vehicle. The suction inlets shall include removable die cast zinc screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.

The main pump inlets shall have National Standard Threads with a long handle chrome cap.

The cap shall be the VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected. (no exception)

Bidder Complies YES_____ NO_____

VALVES

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.

Valves shall have a ten (10) year warranty.

Bidder Complies YES_____ NO_____

INLET (Left side)
On the left side pump panel shall be one (1) 2.50" auxiliary suction, terminating in 2.50" National Standard Hose Thread. The auxiliary suction shall be provided with a strainer, chrome swivel and plug.

Bidder Complies YES_____ NO_____

INLET (Right side)
On the right side pump panel shall be one (1) 2.50" auxiliary suction, terminating in 2.50" National Standard Hose Thread. The auxiliary suction shall be provided with a strainer, chrome swivel and plug.

Inlet valve location shall be outside of the pump panel.

Bidder Complies YES_____ NO_____

ANODE, INLET
A pair of sacrificial zinc anodes shall be provided in the water pump inlets to protect the pump from corrosion.

Bidder Complies YES_____ NO_____

THERMAL PROTECTION

A thermal relief valve shall be provided on the pump to monitor pump water temperature. This valve shall automatically relieve water from the pump and dump to ground when the temperature of the pump water exceeds the temperature setting of the valve.

Bidder Complies YES_____ NO_____

INLET CONTROL
Control for the side auxiliary inlet(s) shall be located at the inlet valve.

Bidder Complies YES_____ NO_____

INLET (Front)
A 6.00" inlet front inlet with die cast zinc screens shall be provided using 5.00" stainless steel pipe and a 5.00" butterfly valve. Only radiused elbows shall be used in the piping, no mitered joints.

Drains are furnished in all the low points of piping and have .75" valves with swing handle.

A bleeder valve shall be located at the threaded connection.

The front suction shall be located on the passenger side through the bumper.

The front suction shall be electrically operated valve with an electric control at the pump operator's panel. The control shall be momentary to allow the valve to be gated for ease of operation. Indicator lights shall be provided to show if the valve is open or closed.

Bidder Complies YES_____ NO_____

INTAKE RELIEF VALVE
An intake relief valve, preset at 125 psig, shall be installed on the inlet side of the valve.

Relief valve shall have a working range of 50 psig to 250 psig.

Outlet shall terminate below the framerails.

The front inlet shall have National Standard hose threads with a long handle chrome plated cap.

The cap shall be the VLH, which incorporates an exlusive thread design to automatically relieve stored pressure in the line when disconnected. (no exception)

The front suction shall have a chromed 6.00" swivel with National Standard hose threads and a long handle chromed plated cap.

The swivel shall have a smooth surface chrome finish.

Bidder Complies YES_____ NO_____

PRESSURE CONTROLLER

A Fire Research Pump Boss Model PBA200 pressure governor shall be provided.

A pressure transducer shall be installed in the water discharge manifold on the pump.

The display panel shall be located at the pump operator's panel

Bidder Complies YES_____ NO_____

INLET BLEEDER VALVE

A .75" bleeder valve shall be provided for each side gated inlet. The valves shall be located behind the panel with a swing style handle control extended to the outside of the 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. The water discharged by the bleeders shall be routed below the chassis frame rails.

Bidder Complies YES_____ NO_____

TANK TO PUMPS

The booster tank shall be connected to the intake side of the pump, with heavy-duty piping and a quarter turn 3.00" full flow line valve, and with the control remotely located at the operator's panel. The tank to pump line shall run straight (no elbows) from the pump into the front face of the water tank and down into the tank sump. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing.

A second tank to pump line shall be provided with heavy-duty piping and a quarter turn 3.00" full flow valve. The second tank to pump line control shall be located at the pump operator's panel. This tank to pump line shall come off an inlet manifold and into the tank face. The piping shall then curve down into a second sump in the water tank. The second sump shall be located to the rear of the water tank. A rubber coupling shall be installed within this line to prevent damage from vibration or chassis flexing.

A check valve shall be provided in both tank to pump supply lines to prevent the possibility of "back filling" the water tank.

Bidder Complies YES_____ NO_____

TANK REFILL

A 1.50" combination tank refill and pump re-circulation line shall be provided, using a quarter-turn full flow ball valve controlled from the pump operator's panel.

Bidder Complies YES_____ NO_____

DISCHARGE OUTLETS (Left Side)

There shall be two (2) discharge outlets with a 2.50" valve on the left side of the apparatus, terminating with a male 2.50" National Standard hose thread adapter.

Bidder Complies YES_____ NO_____

DISCHARGE OUTLETS (Right Side)

There shall be two (2) discharge outlets 2.50" valve on the right side of the apparatus, terminating with a male 2.50" National Standard hose thread adapter.

Bidder Complies YES_____ NO_____

DISCHARGE OUTLET, 5.00"

There shall be a 5.00" discharge outlet with a 4.00" Akron valve installed on the right side of the apparatus, terminating with male a 5.00" National Standard hose thread. The discharge outlet shall be actuated with a handwheel control and position indicator at the pump operator's control panel.

Bidder Complies YES_____ NO_____

DISCHARGE OUTLET (Rear)

There shall be two (2) discharge outlets piped to the rear of the hose bed, installed so proper clearance is provided for spanner wrenches or adapters. Plumbing shall consist of 2.50" piping along with a 2.50" full flow ball valve with the control from the pump operator's panel.

Bidder Complies YES_____ NO_____

DISCHARGE CAPS

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

The caps shall be the VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected. (no exception)

Bidder Complies YES_____ NO_____

OUTLET BLEEDER VALVE

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.

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.

Bidder Complies YES_____ NO_____

ELBOWS, LEFT SIDE OUTLETS

The 2.50" discharge outlets, located on the left side pump panel, shall be furnished with a 2.50"(F) National Standard hose thread x 2.50"(M) National Standard hose thread, chrome plated, 45 degree elbow.

The elbow shall be a VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected. (no exception)

Bidder Complies YES_____ NO_____

ELBOWS, RIGHT SIDE OUTLETS

The 2.50" discharge outlets, located on the right side pump panel, shall be furnished with a 2.50"(F) National Standard hose thread x 2.50"(M) National Standard hose thread, chrome plated, 45 degree elbow.

The elbow shall be the VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected. (no exception)

Bidder Complies YES_____ NO_____

ELBOWS, REAR OUTLETS

The 2.50" discharge outlets, located at the rear of the apparatus, shall be furnished with a 2.50"(F) National Standard hose thread x 2.50"(M) National Standard hose thread, chrome plated, 45 degree elbow.

The elbow will be a VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected. (no exception)

Bidder Complies YES_____ NO_____

ELBOW, 5.00" OUTLET

The 5.00" outlet shall be furnished with a 5.00"(F) National Standard hose thread x 4.00" Storz elbow adapter with Storz cap.

There shall be two (2) adapters with 2.50" FNST x 1.50" MNST threads and a 1.50" chrome plated cap installed on one (1) outlet on each side pump panel.

Bidder Complies YES_____ NO_____

DISCHARGE OUTLET CONTROLS

The discharge outlets shall incorporate a quarter-turn ball valve with the control located at the pump operator's panel. The valve operating mechanism shall indicate the position of the valve.

If a handwheel control valve is used, the control shall be a minimum of a 3.9" diameter chrome plated handwheel with a dial position indicator built in to the center of the handwheel.

Bidder Complies YES_____ NO___

DELUGE RISER

A 3.00" deluge riser shall be installed above the pump in such a manner that a monitor can be mounted and used effectively. Piping shall be installed securely so no movement develops when the line is charged. The riser shall be gated and controlled at the pump operator panel.

Bidder Complies YES_____ NO_____

TELESCOPIC PIPING

. The deluge riser piping shall include an 18.00" Task Force Model XG18 Extend-A-Gun extension.

This extension shall be telescopic to allow the deluge gun to be raised 18.00" increasing the range of operation.

A position sensor shall be provided on the telescopic piping that shall activate the "do not move vehicle" light inside the cab when the monitor is in the raised position.

Bidder Complies YES_____ NO___

MONITOR MOUNTING BASE

An Elkhart Model 8298 deck mount base for an Elkhart "Stinger" monitor shall be properly installed on the deluge riser. This base shall be painted to match the body.

Bidder Complies YES_____ NO_____

CROSSLAY HOSE BEDS (DOUBLE TIER 7” PER CROSSLAY).

Three (3) crosslays with 1.50" outlets shall be provided. All three crosslays must have an interior diameter that is a minimum of 7.0" wide and shall be plumbed with 2.00" i.d. pipe and gated with a 2.00" quarter turn ball valve.

Outlets to be equipped with a 1.50" National Standard hose thread 90 degree swivel located in the hose bed so that hose may be removed from either side of apparatus.

The crosslay controls shall be at the pump operator's panel.

The center crosslay dividers shall be fabricated of .25" aluminum and shall provide adjustment from side to side. The divider shall be unpainted with a brushed finish.

Vertical scuffplates, constructed of stainless steel, shall be provided at the front and rear ends of the bed on each side of vehicle.

Crosslay bed flooring shall consist of removable perforated brushed aluminum.

SINGLE STACKING OF THE 1:75" IS NOT ACCEPTABLE.

Bidder Complies YES_____ NO_____

CROSSLAY/DEADLAY HOSE RESTRAINT

Elastic netting shall be provided across the top and ends of three (3) crosslay/deadlay opening(s) to secure the hose during travel. The netting shall be permanently attached at the top center of the crosslay/deadlay bed and removable on each end.

Bidder Complies YES_____ NO_____

CROSSLAY

The crosslays shall be no more than 75-1/2" from the ground.

Bidder Complies YES_____ NO_____

PUMP COMPARTMENT

The pump compartment shall be separate from the hose body and compartments so that each may flex independently of the other. It shall be a fabricated assembly of steel tubing, angles and channels which supports both the fire pump and the side running boards.

The pump compartment shall be mounted on the chassis frame rails with rubber biscuits in a four point pattern to allow for chassis frame twist.

Pump compartment, pump, plumbing and gauge panels shall be removable from the chassis in a single assembly.

Bidder Complies YES_____ NO_____

PUMP MOUNTING

Pump shall be mounted to a substructure which shall be mounted to the chassis frame rail using rubber isolators. The mounting shall allow chassis frame rails to flex independently without damage to the fire pump.

Bidder Complies YES_____ NO_____

PUMP CONTROL PANELS (Side Control)

All pump controls and gauges shall be located at the left (driver's) side of the apparatus and properly marked.

The pump panel on the right (passenger's) side shall be removable with lift and turn type fasteners. The left (driver's) side is fastened with screws.

The gauge and control panels shall be two (2) separate panels for ease of maintenance.

The side gauge panel shall be hinged with a full length stainless steel hinge. The fasteners used to hold the panel in the upright position shall be quarter turn type. Vinyl covered cable or chains shall be used to hold the gauge panel in the dropped position.

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.

The identification tag for each valve control shall be provided

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.

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.

Bidder Complies YES_____ NO_____

PUMP PANEL CONFIGURATION

The pump panel configuration shall be neat and orderly.

Bidder Complies YES_____ NO_____

PUMP AND GAUGE PANEL

The pump and gauge panels shall be constructed of aluminum and covered with abrasive resistant material. A polished aluminum trim molding shall be provided on both sides of the pump panel.

The gauge panel shall be hinged with a full length stainless steel hinge. The fasteners the hold the panel in the up right position shall be quarter-turn style. Vinyl covered chains shall be used to hold the panel in the dropped position.

The passenger's side pump panel shall be removable.

On the front of the pump house structure, provisions shall be provided for access to the pump.

Bidder Complies YES_____ NO_____

PUMP PANEL GAUGES AND CONTROLS

The following shall be provided on the pump and gauge panels in a neat and orderly fashion. These gauges shall be in addition to what is provided with the pressure controller.

- Engine Oil Pressure Gauge: With visual and audible warning

- Engine Water Temperature Gauge: With visual and audible warning

- Tachometer: Electric

- Master Pump Drain Control

- Voltmeter

Bidder Complies YES_____ NO_____

GAUGES, VACUUM and PRESSURE

The pump vacuum and pressure gauges shall be silicone filled and manufactured by Class 1, Inc or equivalent.

The gauges shall be a minimum of 4.50" in diameter and shall have white faces with black lettering, with a pressure range of 30.00"-0-600#.

The pump pressure and vacuum gauges shall be installed adjacent to each other at the pump operator's control panel.

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.

Bidder Complies YES_____ NO_____

PRESSURE GAUGES

The individual "line" pressure gauges for the discharges shall be interlube filled and manufactured by Class 1 or equivalent.

The gauges shall be a minimum of 3.00" in diameter and shall have white faces with black lettering.

Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.

Gauges shall have a pressure range of 30"-0-400#.

The individual pressure gauge shall be installed as close to the outlet control as practical.

This gauge shall include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.

Bidder Complies YES_____ NO_____

WATER LEVEL GAUGE

An electronic water level gauge shall be provided on the operator's panel that registers water level by means of five colored LED lights. The lights shall be durable, ultra-bright five LED design viewable through 180 degrees. The water level indicators shall be as follows:

- 100% = Green

- 75% = Yellow

- 50% = Yellow

- 25% = Yellow

- Refill = Red

The light shall flash when the level drops below the given level indicator to provide an eighth of a tank indication. To further alert the pump operator, the lights shall flash sequentially when the water tank is empty.

The level measurement shall be based on the sensing of head pressure of the fluid in the tank.

The display shall be constructed of a solid plastic material with a chrome plated die cast bezel to reduce vibrations that can cause broken wires and loose electronic components. The encapsulated design shall provide complete protection from water and environmental elements. An industrial pressure transducer shall be mounted to the outside of the tank. The field calibratable display measures head pressure to accurately show the tank level.

Bidder Complies YES_____ NO_____

AIR HORN SWITCH

An air horn control switch shall be provided at the pump operator's control panel. This switch shall be red and properly labeled. The button shall be located within easy reach of the operator in the electrical switch panel.

Bidder Complies YES_____ NO_____

LIGHT SHIELD

Illumination shall be provided by, LED lights for controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus and the equipment provided on it. External illumination shall be a minimum of five (5) foot-candles on the face of the device. Internal illumination shall be a minimum of four (4) footlamberts.

Lights shall be installed under a shield. A light shall come on above the pump panel light switch when the parking brake is set. This is to afford the operator some illumination when first approaching the control panel. A green pump engaged indicator shall come on at the operator's panel when the pump is shifted into gear from inside the cab. The remaining lights to be actuated from a switch located on the pump panel.

Bidder Complies YES_____ NO_____

ADDITIONAL LIGHT SHIELD

An additional , LED light shield shall be provided above passenger's side pump panel. The pump panel shall be illuminated by Night Stick, LED lights installed under the light shield.

The lights shall be operated from a switch on the pump panel.

Bidder Complies YES_____ NO___

ELECTRICAL HARNESSING INSTALLATION

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

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

Wiring shall be run in loom where exposed, and have grommets or other edge protection where wires pass through metal. Automatic reset circuit breakers shall be provided which conform to SAE standards. 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 enclosed within 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:

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. All holes made in the roof shall be caulked with silicon. (no exception). Large fender washers, liberally caulked, shall be used when fastening equipment to the underside of the cab roof. Any electrical component that is installed in an exposed area shall be mounted in a manner that shall not allow moisture to accumulate in it. Exposed area shall be defined as any location outside of the cab or body. For low cost of ownership, electrical components designed to be removed for maintenance shall be quickly accessible. For ease of use, a coil of wire shall be provided behind the appliance to allow them to be pulled away from the mounting area for inspection and service work. Corrosion preventative compound shall be applied to non-waterproof electrical connectors located outside of the cab or body. All non-waterproof connections shall require this compound in the plug to prevent corrosion and for easy separation of the plug. Any lights containing non-waterproof sockets in a weather-exposed area shall have corrosion preventative compound added to the**

socket terminal area. All electrical terminals in exposed areas shall have DOW 1890 protective Coating applied completely over the metal portion of the terminal. Rubber coated metal clamps shall be used to support wire harnessing and battery cables routed along the chassis frame rails. Heat shields shall be used to protect harnessing in areas where high temperatures exist. Harnessing passing near the engine exhaust shall be protected by a heat shield.

All braided wire harnesses shall have a permanent label attached for easy identification of the harness part number and fabrication date.

Bidder Complies YES_____ NO___

BATTERY CABLE INSTALLATION

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

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

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

1. **All battery cables and battery harnesses shall have a permanent label attached for easy identification of the harness part number and fabrication date. Splices shall not be allowed on battery cables or battery cable harnesses. For ease of identification and simplified use, battery cables shall be color coded. All positive battery cables shall be red in color or wrapped in red loom the entire length of the cable. All negative battery cables shall be black in color. For ease of identification, all positive battery cable isolated studs throughout the cab and chassis shall be red in color.**

   For increased reliability and reduced maintenance, all electrical buss bars located on the exterior of the apparatus shall be coated to prevent corrosion.

Bidder Complies YES_____ NO___

ELECTRICAL COMPONENT INSTALLATION

1. **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. All lights and reflectors, required to comply with Federal Vehicle Safety Standard #108, shall be furnished. Rear identification lights shall be recessed mounted for protection. Lights and wiring mounted in rear bulkheads shall be protected from damage by installing a false bulkhead inside the rear compartments.**

An operational test shall be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order. The results of the tests shall be recorded and provided to the purchaser at time of delivery.

Bidder Complies YES_____ NO___

CAB SWITCHING INSTALLATION

All emergency light switches shall be mounted on a separate panel installed in the cab. A master warning light switch and individual switches shall be provided to allow pre-selection of emergency lights. The light switches shall be rocker type with an internal indicator light to show when switch is energized. All switches shall be properly identified and mounted in a removable panel for ease in servicing. Identification of the switches shall be done by either printing or etching on the switch panel. The switches and identification shall be illuminated.

Bidder Complies YES_____ NO___

STEP LIGHTS

Four (4) Ri-Tar, Model M27HW2 Super LED or equivalent, step lights shall be provided. One (1) step light shall be provided on each side, on the front compartment face and two (2) step lights at the rear to illuminate the tailboard.

These step lights shall be actuated with the pump panel light switch.

All other steps on the apparatus shall be illuminated per the current edition of NFPA 1901.

Bidder Complies YES_____ NO___

REAR FMVSS LIGHTING

The rear stop/tail and directional lighting shall consist of the following:

Two (2) Whelen model 60R00BRR red LED stop/tail lights.

Two (2) Whelen, Model 60A00TAR, amber LED populated arrow turn light.

These lights shall be installed at the rear of the truck in a polished housing.

Four (4) red reflectors shall be provided.

A lighted, license plate bracket shall be mounted on the driver's side.. .

Two (2) Whelen, Model: 60J000CU backup lights shall be provided.

Bidder Complies YES_____ NO___

REAR ID/MARKER DOT LIGHTING

There shall be one (1) Truck-Lite Model 15050R or equivalent three (3) LED light kit used as identification lights located at the rear of the apparatus per the following:

- 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.

There shall be two (2) Ri-Tar LED lights installed at the rear of the apparatus used as clearance lights located at the rear of the apparatus per the following:

- To indicate the overall width of the vehicle.

- One (1) each side of the vertical centerline.

- As near the top as practical.

- Red in color.

- To be visible from the rear.

There shall be two (2) Ri-Tar LED or equivalent lights installed on the side of the apparatus as close to the rear as practical per the following:

- To indicate the overall length of the vehicle.

- One (1) each side of the vertical centerline.

- As near the top as practical.

- Red in color.

- To be visible from the side.

Per FMVSS 108 and CMVSS 108 requirements.

Bidder Complies YES_____ NO___

LIGHT, INTERMEDIATE

There shall be one (1) pair, of Truck-Lite, Model: 60115Y or equivalent, 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.

Bidder Complies YES_____ NO___

"DO NOT MOVE APPARATUS" INDICATOR

A flashing red indicator light, located in the driving compartment, shall be illuminated automatically per the current NFPA requirements. The light shall be labeled "Do Not Move Apparatus If Light Is On."

The same circuit that activates the Do Not Move Apparatus indicator shall activate a pulsing alarm when the parking brake is released.

Bidder Complies YES_____ NO___

OPEN DOOR INDICATOR LIGHT

One (1) red indicator lightss shall be provided and located in clear view of the driver, warning of an open passenger or equipment compartment doors.

Bidder Complies YES_____ NO___

COMPARTMENT LIGHTING

There shall be seven (7) compartments with LED compartment light strips. The strips shall be centered vertically along each side of the door framing. The compartments with these strip lights shall be located all compartments.

Any remaining compartments shall include 6.00" diameter Truck-Lite, Model: 79384 or equivalent, lights in each enclosed compartment. Each light shall have a number 1076 one filament, two wire bulb.

Opening the compartment door shall automatically turn the compartment lighting on.

Bidder Complies YES_____ NO___

PUMP COMPARTMENT LIGHT

A pump compartment light shall be provided inside the right side pump enclosure and accessible through a door on the pump panel.

A weep hole shall be provided in each light lens, preventing moisture retention.

Bidder Complies YES_____ NO___

CAB PERIMETER SCENE LIGHTS
There shall be four (4) Truck-lite, Model 44308C, or equivalent 4.00" white LED lights with Model 40700 grommets provided for the cab and crew cab doors.

These lights shall be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body perimeter scene lights.

Bidder Complies YES_____ NO___

PERIMETER SCENE LIGHTS, BODY
There shall be four (4) Truck-Lite, Model 44308C, or equivalent 4.00" white LED lights with Model 40700 grommets provided on the apparatus.

The lights shall be mounted in the following locations:

- **One (1) light shall be provided under the left rear step area shining to the rear.**
- **One (1) light shall be provided under the right rear step area shining to the rear.**
- **One (1) light shall be provided under the left pump panel running board.**
- **One (1) light shall be provided under the right pump panel running board.**

The lights shall be activated by a one (1) switch within reach of the driver, one (1) switch within reach of the officer, and one (1) switch located at the pump panel.

Bidder Complies YES_____ NO___

12 VOLT LIGHTING
There shall be two (2) Whelen Pioneer PCP2, 12 volt LED combination spotlight and floodlight(s) provided on the front visor, one (1) on the driver's side and one (1) on the passenger's side.

The light shall be controlled by the following:

a switch at the driver's side switch panel

a switch at the passenger's side switch panel

a switch at the pump operator's panel

These light(s) may be load managed when the parking brake is set

Bidder Complies YES_____ NO___

12 VOLT LIGHTING
There shall be one (1) Whelen Model PFP1, 12 volt LED floodlight(s) installed in semi-recessed housing(s) Model PBA103 located on the upper rear bulkhead on the DS.

The light(s) selected above shall be controlled by the following:

a switch at the driver's side switch panel

a switch at the passenger's side switch panel

a switch at the rear of apparatus on the driver's side

a switch at the pump operator's panel

These light(s) may be load managed when the parking brake is set

12 VOLT LIGHTING

There shall be one (1) Whelen Model PFP2, 12 volt LED floodlight(s) installed in semi-recessed housing(s) Model PBA203 located above the taillight bezel on the PS.

The light(s) selected above shall be controlled by the following:

a switch at the driver's side switch panel

a switch at the passenger's side switch panel

a switch at the rear of apparatus on the driver's side

a switch at the pump operator's panel

These light(s) may be load managed when the parking brake is set

12 VOLT LIGHTING

There shall be two (2), 12 volt DC, light head(s) shall be a Whelen, Model PCP2 LED combination floodlight and spotlight,, with pull up pole(s) installed outside of the , the dunnage area. One (1) light on each side. A polished stainless steel guard shall be provided to cover the light pole for a telescoping floodlight. This guard shall provide protection for the pole from any damage that may be caused by the hose couplings during removal of hose from the crosslay hose beds.

There shall be a total of two (2) guards provided.

The light control for the light(s) selected above shall be the following:

a switch at the driver's side switch panel .

a switch at the pump operator's panel .

a switch at the passenger's side switch panel .

no additional switch location .

The light(s) shall be connected to the "Do Not Move Truck" indicator.

The light(s) may be load managed when the parking brake is set.

Bidder Complies YES_____ NO___

DECK LIGHTS

Two (2)-6.00" Unity AG deck lights with swivel mount shall be provided at the rear of the hose bed, one (1) each side.

One (1) light shall be furnished with a 160,000 candle power halogen spot bulb and the other shall be furnished with a 6,000 candle power halogen flood bulb.

Bidder Complies YES_____ NO___

HAND HELD LIGHT

There shall be four (4) 12v Streamlight, Fire Vulcan, Model #44451, lights mounted in a location to be determined at final inspection.

Each light housing shall be orange in color and be provided with a C4 LED and two (2) "ultra bright blue tail light LEDs" The tail light LEDs shall have a dual mode of blinking or steady.

Vehicle mount with 12VDC direct wire charging rack.

Quick release buckle strap shall be included.

Bidder Complies YES_____ NO___

AIR HORN SYSTEM
Two (2) Grover air horns shall be provided and located, in the front bumper, recessed outside the frame rails. The horn system shall be piped to the air brake system wet tank utilizing 0.38" tubing. A pressure protection valve shall be installed in-line to prevent loss of air in the air brake system.

AIR HORN CONTROL
Two (2) lanyard rope pull controls shall be provided, one (1) within reach of the driver and one (1) within reach of the officer.

Bidder Complies YES_____ NO___

ELECTRONIC SIREN
A Whelen, Model 295HFS3, electronic remote siren with bail mount control head and noise canceling microphone shall be provided.

Electronic siren head shall be located in the center console.

Siren shall be actuated by a foot switch on the officer's side and 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.

SPEAKER
A Whelen, Model SA122FMA, cast aluminum, 100-watt, flange mount with natural aluminum finish. The speaker shall be connected to the siren amplifier.

The speaker shall be recessed in the center of the front bumper.

Bidder Complies YES_____ NO___

MECHANICAL SIREN, (Auxiliary)
A Federal Q2B siren shall be furnished. A siren brake button shall be installed on the switch panel.

The control solenoid shall be powered up after the emergency master switch is activated.

The mechanical siren shall be recessed in the front bumper on the left side. The siren shall be supported by the bumper framework.

The mechanical siren shall be actuated by two (2) foot switches, one (1) located on the officer's side and one (1) on the driver's side.

Bidder Complies YES_____ NO___

LIGHTBAR
There shall be one (1) 82.00" Whelen Freedom, model FNQLED, LED lightbar mounted on the cab roof.**

The lightbar shall include the following:

- **Eight (8) red flashing LED modules facing forward.**
- **Two (2) white flashing LED modules facing forward.**
- **Two (2) red flashing corner LED modules, one in each front corner**
- **One (1) red flashing LED module facing the driver side.**
- **One (1) red flashing LED module facing the passenger side.**
- **One (1) GTT model 795 LED Opticom™ with National standard priority.**

The color of the lenses shall be clear.

Two (2) switches located on a cab switch panel shall control this lightbar.

- **One (1) switch shall control all the warning lights.**
- **One (1) switch shall control the traffic light controller.**

The white warning lights and the traffic light controller shall be disabled when the parking brake is applied.

Bidder Complies YES_____ NO___

ADDITIONAL LIGHTBARS, (CAB ROOF SIDES)

Two (2) 24" Whelen, Freedom Mini LED lightbars shall be mounted on the roof, one (1) on each side, over the cab doors.

Each lightbar shall include the following:

Two (2) red flashing corner LED modules.

Two (2) red flashing LED modules.

These lightbars shall be activated with the roof light.

The lens colors shall be clear

To meet NFPA, these lightbars may be load managed when the parking brake is applied.

Bidder Complies YES_____ NO___

HEADLIGHT FLASHER
The high beam headlights shall flash alternately between the left and right side, with a control switch located on the cab instrument panel.

The flashing shall automatically cancel when the headlight switch is activated or when the parking brake is set.

Bidder Complies YES_____ NO___

SIDE ZONE LOWER LIGHTING
Six (6) flashing Whelen Super 600 LED lights shall be located at the following positions:

Two (2) lights, one (1) each side on the front cab corner - split red/clear Super LED/clear lens both sides.

Two (2) lights, aft of the crew cab doors - split red/clear Super LED/clear lens both sides.

Two (2) lights, located in the wheel wells - split red/clear Super LED/clear lens both sides.

The lights shall be controlled by a lighted switch on the cab instrument panel.

These lights shall be installed with three (3) pairs of flange kits.

Bidder Complies YES_____ NO___

INTERIOR CAB DOOR WARNING LIGHTS
Four (4) Whelen 500 LED flashing lights shall be provided. One (1) light shall be located inside of each cab and crew cab door pan. Each light shall be activated by the door jam switch of the associated

door. The color of the lights shall be red. The lights shall alternately flash whenever the corresponding door is open. These lights shall be mounted in a Whelen flange.

Bidder Complies YES_____ NO___

WARNING LIGHTS (Side)
One (1) pair of Whelen, Model 60*02F*R, LED flashing lights shall be provided.

The lights shall be located on the doors of compartments D3 and P3.

The color of the lights shall be split red/clear Super LED/clear lens, one (1) each side.

The light shall be with a flange.

The light shall be activated with the side warning switch.

Bidder Complies YES_____ NO___

REAR ZONE LOWER LIGHTING
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 requirements of NFPA.

The color of these lights shall be red Super LED/clear lens.

One (1) switch in the cab on the switch panel shall control these lights.

These lights shall be installed without a flange.

Bidder Complies YES_____ NO___

WARNING LIGHTS (Rear)
There shall be one (1) pair of Whelen 60*02F*R flashing Super LED lights provided.

The color of the lights shall be red Super LED/clear lens.

These lights shall be located at the rear of the body each side below the hosebed, and activated with the rear upper warning switch

These lights shall be installed with a flange.

Bidder Complies YES_____ NO___

WARNING LIGHTS (Rear of Hose Bed)
Two (2) Whelen model B6MMP Super LED beacon with lower Super LED flashing warning lights shall be provided at the rear of the truck, one (1) each side.**

Each light shall include a Super LED flashing beacon and a model 70*02F*R Super LED flashing light, mounted in a polished aluminum housing.

The beacons shall have red LEDs and be provided with both domes red.

The color of the LED flashing lights shall be amber Super LED/clear lens.

A switch shall be provided in the cab, on the switch panel to control the beacons. The lower Super 700 LEDs shall be activated with the rear upper warning switch.

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.

Bidder Complies YES_____ NO___

TRAFFIC DIRECTING LIGHT

There shall be one (1) Whelen model TAM85, 46.00" long x 2.84" high x 2.24" deep, amber LED traffic directing light installed at the rear of the apparatus.

The Whelen model TACTLD1 control head shall be included with this installation.

The auxillary warning mode shall be activated with the control head only.

This traffic directing light shall be recessed within a treadplate step at the rear of the apparatus.

The traffic directing light control head shall be located in the driver side overhead switch panel in the right panel position.

Bidder Complies YES_____ NO___

ELECTRICAL SYSTEM GENERAL DESIGN for ALTERNATING CURRENT

The following guidelines shall apply to the 120/240 VAC system installation:

General

Any fixed line voltage power source producing alternating current (ac) line voltage shall produce electric power at 60 cycles plus or minus 5 cycles.

Except where superseded by the requirements of NFPA 1901, all components, equipment and installation procedures shall conform to NFPA 70, National Electrical Code (herein referred to as the NEC).

Line voltage electrical system equipment and materials included on the apparatus shall be listed and installed in accordance with the manufacturer's instructions. All products shall be used only in the manner for which they have been listed.

Grounding

Grounding shall be in accordance with Section 250-6 "Portable and Vehicle Mounted Generators" of the NEC. Ungrounded systems shall not be used. Only stranded or braided copper conductors shall be used for grounding and bonding.

An equipment grounding means shall be provided in accordance with Section 250-91 (Grounding Conductor Material) of the NEC.

The grounded current carrying conductor (neutral) shall be insulated from the equipment grounding conductors and from the equipment enclosures and other grounded parts. The neutral conductor shall be colored white or gray in accordance with Section 200-6 (Means of Identifying Grounding Conductors) of the NEC.

In addition to the bonding required for the low voltage return current, each body and driving or crew compartment enclosure shall be bonded to the vehicle frame by a copper conductor. This conductor shall have a minimum amperage rating of 115 percent of the nameplate current rating of the power source specification label as defined in Section 310-15 (amp capacities) of the NEC. A single conductor properly sized to meet the low voltage and line voltage requirements shall be permitted to be used.

All power source system mechanical and electrical components shall be sized to support the continuous duty nameplate rating of the power source.

Operation

Instructions that provide the operator with the essential power source operating instructions, including the power-up and power-down sequence, shall be permanently attached to the apparatus at any point where such operations can take place.

Provisions shall be made for quickly and easily placing the power source into operation. The control shall be marked to indicate when it is correctly positioned for power source operation. Any control

device used in the drive train shall be equipped with a means to prevent the unintentional movement of the control device from its set position.

A power source specification label shall be permanently attached to the apparatus near the operator's control station. The label shall provide the operator with the information detailed in Figure 19-4.10.

Direct drive (PTO) and portable generator installations shall comply with Article 445 (Generators) of the NEC.

Overcurrent protection

The conductors used in the power supply assembly between the output terminals of the power source and the main over current protection device shall not exceed 144 inches. (3658 mm) in length.

For fixed power supplies, all conductors in the power supply assembly shall be type THHW, THW, or use stranded conductors enclosed in nonmetallic liquid tight flexible conduit rated for a minimum of 194 degree Fahrenheit (90 degrees Celsius).

For portable power supplies, conductors located between the power source and the line side of the main overcurrent protection device shall be type SO or type SEO with suffix WA flexible cord rated for 600-volts at 194 degrees Fahrenheit (90 degrees Celsius).

Wiring Methods

Fixed wiring systems shall be limited to the following:

- Metallic or nonmetallic liquid tight flexible conduit rated at not less than 194 degrees Fahrenheit (90 degrees Celsius)

or

- Type SO or Type SEO cord with a WA suffix, rated at 600 volts at not less than 194 degrees Fahrenheit (90 degrees Celsius)

Electrical cord or conduit shall not be attached to chassis suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components, or low voltage wiring. In addition the wiring shall be run as follows.

- Separated by a minimum of 12 inches (305 mm), or properly shielded, from exhaust piping

- Separated from fuel lines by a minimum of six (6) inches (152 mm) distance.

Electrical cord or conduit shall be supported within six (6) inches (152 mm) of any junction box and at a minimum of every 24 inches (610 mm) of continuous run. Supports shall be made of nonmetallic materials or corrosion protected metal. All supports shall be of a design that does not cut or abrade the conduit or cable and shall be mechanically fastened to the vehicle.

Wiring Identification

All line voltage conductors located in the main panel board shall be individually and permanently identified. The identification shall reference the wiring schematic or indicate the final termination point. When prewiring for future power sources or devices, the unterminated ends shall be labeled showing function and wire size.

Wet Locations

All wet location receptacle outlets and inlet devices, including those on hardwired remote power distribution boxes, shall be of the grounding type provided with a wet location cover and installed in accordance with Section 210-7 "Receptacles and Cord Connections" of the NEC.

All receptacles located in a wet location shall be not less than 24 inches (610 mm) from the ground. Receptacles on off-road vehicles shall be a minimum of 30 inches (762 mm) from the ground.

The face of any wet location receptacle shall be installed in a plane from vertical to not more than 45 degrees off vertical. No receptacle shall be installed in a face up position.

Dry Locations

All receptacles located in a dry location shall be of the grounding type. Receptacles shall be not less than 30 inches (762 mm) above the interior floor height.

All receptacles shall be marked with the type of line voltage (120-volts or 240-volts) and the current rating in amps. If the receptacles are direct current, or other than single phase, they shall be so marked.

Listing

All receptacles and electrical inlet devices shall be listed to UL 498, Standard for Safety Attachment Plugs and Receptacles, or other appropriate performance standards. Receptacles used for direct current voltages shall be rated for the appropriate service.

Electrical System Testing

The wiring and associated equipment shall be tested by the apparatus manufacturer or the installer of the line voltage system.

The wiring and permanently connected devices and equipment shall be subjected to a dielectric voltage withstand test of 900-volts for one (1)

minute. The test shall be conducted between live parts and the neutral conductor, and between live parts and the vehicle frame with any switches in the circuit(s) closed. This test shall be conducted after all body work has been completed.

Electrical polarity verification shall be made of all permanently wired equipment and receptacles to determine that connections have been properly made.

Operational Test per Current NFPA 1901 Standard

The apparatus manufacturer shall perform the following operation test and ensure that the power source and any devices that are attached to the line voltage electrical system are properly connected and in working order. The test shall be witnessed and the results certified by Underwriters Laboratories.

The prime mover shall be started from a cold start condition and the line voltage electrical system loaded to 100 percent of the nameplate rating.

The power source shall be operated at 100 percent of its nameplate voltage for a minimum of two (2) hours unless the system meets category certification as defined in the current NFPA 1901 standard.

Where the line voltage power is derived from the vehicle's low voltage system, the minimum continuous electrical load as defined in the current NFPA 1901 standard shall be applied to the low voltage electrical system during the operational test.

Bidder Complies YES_____ NO___

GENERATOR

The apparatus shall be equipped with a complete electrical power system. The generator shall be a 15.0 kW Hydraulic unit will be supply. Only a Harrison an Onan or Smart Power no other unit will be excepted. The wiring and generator installation shall conform to the present National Electrical Codes Standards of the National Fire Protection Association. The installation shall be designed for continuous operation without overheating and undue stress on components.

Generator Performance

- **Continuous Duty Rating: 15,000 watts**
- **Nominal Volts: 120/240**

- Amperage: 125 @ 120 volts, 62.5 @ 240 volts

- Phase: Single

- Cycles: 60 hertz

- Engine Speed at Engagement: Idle

- RPM range: 925 to 3,000 (hydraulic pump)

Generator Approximate Dimensions

- Length: 35.00 inches

- Width: 23.00 inches

- Height: 19.00 inches

- Weight: 455 pounds (dry)

The output of the generator shall be controlled by an internal hydraulic system. An electrical instrument gauge panel shall be provided for the operator to monitor and control all electrical operations and output.

The generator shall be driven by a transmission power take off unit, through a hydraulic pump and motor.

The generator shall include an electrical control inside the cab. The hydraulic engagement supply shall be operational only after the chassis parking brake is applied.

An electric/hydraulic valve shall supply hydraulic fluid to the clutch engagement unit provided on the chassis PTO drive.

Generator Instruments and Controls

To properly monitor the generator performance a digital meter panel shall be furnished and mounted next to the circuit breaker panel. The meter shall indicate the following items:

- Voltage

- Amperage for both lines

- Frequency

- Generator run hours

- Over current indication

- Over temperature indication

- "Power On" indication

- Two (2) fuse holders with two (2) amp fuses (for indicator light protection)

The meter and indicators shall be installed near eye level in the compartment. Instruments shall be flush mounted in an appropriate sized weatherproof electrical enclosure. All instruments used shall be accurate within two (2) percent.

Generator Wiring:

The system shall be installed by highly qualified electrical technicians to assure the required level of safety and protection to the fire apparatus operators. The wiring, electrical fixtures and components shall be to the highest industry quality standards available on the domestic market. The equipment shall be the type as designed for mobile type installations subject to vibration, moisture and severe continuous usage. The following electrical components shall be the minimum acceptable quality standards for this apparatus:

Wiring:

All electrical wiring shall be fine stranded copper type. The wire shall be sized to the load and circuit breaker rating; ten (10) gauge on 30 amp circuits, 12 gauge on 20 amp circuits and 14 gauge on 15 amp circuits. The cable shall be run in corner areas and extruded aluminum pathways built into the body for easy access.

Load Center:

The main load center shall be a Cutler Hammer with circuit breakers rated to load demand.

Circuit Breakers:

Individual breakers shall be provided for all on-line equipment to isolate a tripped breaker from affecting any other on-line equipment.

Bidder Complies YES_____ NO___

GENERATOR LOCATION

The generator shall be mounted in the passenger side dunnage area. The flooring in this area shall be either reinforced or constructed, in such a manner, that it shall handle the additional weight of the generator.

Bidder Complies YES_____ NO___

GENERATOR START

A switch shall be located on the cab instrument panel to engage the generator.

Bidder Complies YES_____ NO___

CIRCUIT BREAKER PANEL

The circuit breaker panel location shall be determined at plan review.

Bidder Complies YES_____ NO___

ELECTRIC CORD REEL

Furnished with the AC electrical system shall be a Hannay, series 1600, cord reel wired for a four (4) conductor cord. The reel shall be provided with a 12-volt electric rewind switch, that is guarded to prevent accidental operation and labeled for its intended use. The push button switch shall be protected with a fuse and installed at a height not to exceed 72 inches above the operators standing position.

The exterior finish of the reel(s) shall be painted job color matching the body exterior.

A captive roller assembly to be provided to aid in the payout and loading of the reel. A ball stop shall be provided to prevent the cord from being wound on the reel.

A label shall be provided in a readily visible location adjacent to the reel. The label shall indicate current rating, current type, phase, voltage and total cable length.

A total of one (1) cord reel shall be provided to be determined at plan review.

CORD

Provided for electric distribution shall be one (1) length installed on the reel of 200 feet of yellow 8/4 electrical cord. A Hubbell L14-30,30 amp, 120/240 volt, twist lock connector body shall be installed on the end of the cord. This cord shall be provided on one (1) cord reel

Bidder Complies YES_____ NO___

WOOD HEAD BOX (220 VOLT)

There shall be one (1) Daniel Woodhead 6-way junction box with six (6) 110V twist lock receptacles, five (5) 15 amp and one (1) 20 amp. The junction box shall have flip up covers lined with soft neoprene rubber at each outlet opening. Color shall be yellow.

30 AMP, 240-VOLT RECEPTACLE

Wired to the power supply shall be one (1) receptacle that are 240-volt, 30 amp, three (3)-wire twist-lock NEMA L6-30 type with a weather resisting cover located in a location to be determined at plan review.

Bidder Complies YES_____ NO___

HYDRAULIC REEL MOUNTING PROVISION

Brackets and the appropriate wiring shall be provided for the mounting and installed 5000 psi hydraulic reel.

A total of two (2) reels shall be installed. Location to be determined at plan review.

Bidder Complies YES_____ NO___

PAINT

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 cleaning 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 at the conclusion of the metal treatment process.

3. Primer/Surfacer Coats - A two (2) component urethane primer/surfacer shall be hand applied to the chemically treated metal surfaces to provide a strong corrosion protective base coat and to smooth out the surface.

4. Hand Sanding - The primer/surfacer coat shall be lightly sanded to an ultra smooth finish.

5. Sealer Primer Coat - A two (2) component sealer primer coat shall be applied over the sanded primer.

6. Topcoat Paint - Urethane base coat shall be applied to opacity for correct color matching.

7. Clearcoat - Two (2) coats of an automotive grade two (2) component urethane shall be applied. Lap style doors shall be clear coated to match the body. Roll-up doors shall not be clear coated and the standard roll-up door warranty shall apply.

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

The cab shall be two-tone, with the upper section painted White #10 along with a shield design on the cab face and lower section of the cab and body painted Red # 90.

Bidder Complies YES_____ NO___

PAINT CHASSIS FRAME ASSEMBLY

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.

Bidder Complies YES_____ NO___

PAINT, WHEELS

The outer wheel surfaces shall be painted job color Red to match the exterior truck color. The rear dual wheel shall only have the outside surface of the exterior wheel painted job color. The interior dual wheel shall not be painted job color.

The door pans on the body shall be unpainted and natural finished.

Bidder Complies YES_____ NO___

COMPARTMENT INTERIOR FINISH

The interior of the body compartments shall be left unpainted and have the natural finish.

Bidder Complies YES_____ NO___

REFLECTIVE BAND

An 8.00" white reflective band shall be provided across the front of the vehicle and along the sides of the cab and body.

The reflective band provided on the cab face shall be at the headlight level.

Bidder Complies YES_____ NO___

STOP SIGN, REFLECTIVE, CAB DOORS

A 12.00" x 12.00" reflective stop sign shall be provided on the interior of each cab door. The stop sign shall be located on the stainless steel door panel.

This sign shall meet the NFPA 1901 requirement.

Bidder Complies YES_____ NO___

LETTERING

The lettering shall be totally encapsulated between two (2) layers of clear vinyl.

LETTERING

Eighty-one (81) to one hundred (100) gold leaf lettering, 3.00" high, outlining and shading shall be provided.

Bidder Complies YES_____ NO___

ONE (1) YEAR MATERIAL AND WORKMANSHIP

Each new piece of apparatus shall be provided with a minimum one (1) year basic apparatus material and workmanship limited warranty. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package. (no exception).

Bidder Complies YES_____ NO___

ENGINE WARRANTY

A Detroit or Cummin Diesel five (5) year limited engine warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package.

Bidder Complies YES_____ NO___

FIFTY (50) YEAR STRUCTURAL INTEGRITY

The chassis frame shall be provided with a fifty (50) year material and workmanship limited warranty. The warranty shall cover the chassis frame as being free from defects in material and workmanship that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package. (no exception).

Bidder Complies YES_____ NO___

FRONT AXLE TWO (2) YEAR MATERIAL AND WORKMANSHIP WARRANTY

Independent front suspension shall be provided with a two (2) year material and workmanship limited warranty. The manufacturer's warranty shall provide that the front suspension and steering gears be free from any defect related to material and workmanship on the portion of the apparatus built by the manufacturer that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (No Exception).

Bidder Complies YES_____ NO___

REAR AXLE TWO (2) YEAR MATERIAL AND WORKMANSHIP WARRANTY

A Meritor™ Axle 2 year limited warranty shall be provided.

Bidder Complies YES_____ NO___

TEN (10) YEAR STRUCTURAL INTEGRITY

The new cab shall be provided with a ten (10) year material and workmanship limited warranty. The warranty shall cover such portions of the cab built by the manufacturer as being free from structural failures caused by defects in material and workmanship that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package (No Exception).

Bidder Complies YES_____ NO___

FOUR (4) YEAR PRO-RATED PAINT AND CORROSION

Each new piece of apparatus shall be provided with a four (4) year pro-rated paint and corrosion limited warranty on the apparatus cab. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package (No Exception).

Bidder Complies YES_____ NO___

TRANSMISSION WARRANTY

The transmission shall have a five (5) year/unlimited mileage warranty covering 100 percent parts and labor. The warranty is to be provided by Allison Transmission and not the apparatus builder.

Bidder Complies YES_____ NO___

LIFETIME MATERIAL AND WORKMANSHIP

The UPF poly water tank shall be provided with a lifetime material and workmanship limited warranty.

A copy of the warranty certificate shall be submitted with the bid package (No Exception).

Bidder Complies YES_____ NO___

TEN (10) YEAR STRUCTURAL INTEGRITY

Each new piece of apparatus shall be provided with a ten (10) year material and workmanship limited warranty on the apparatus body. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package (No Exception).

Bidder Complies YES_____ NO___

FIVE (5) YEAR MATERIAL AND WORKMANSHIP

The Hale pump shall be provided with a five (5) year material and workmanship limited warranty.

A copy of the warranty certificate shall be submitted with the bid package (No Exception).

Bidder Complies YES_____ NO___

PUMP PLUMBING WARRANTY

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)

Bidder Complies YES_____ NO___

TWO (2) YEAR GENERATOR MATERIAL AND WORKMANSHIP WARRANTY

A Harrison Hydra-Gen generator 2 year limited warranty shall be provided.

Bidder Complies YES_____ NO___

FOUR (4) YEAR PRO-RATED PAINT AND CORROSION

Each new piece of apparatus shall be provided with a four (4) year pro-rated paint and corrosion limited warranty on the apparatus body. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package (No Exception).

Bidder Complies YES_____ NO___

THREE (3) YEAR MATERIAL AND WORKMANSHIP

The gold leaf lamination shall be provided with a three (3) year material and workmanship limited warranty. The warranty shall cover the gold leaf lamination as being free from defects in material and workmanship that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package (No Exception).

Bidder Complies YES_____ NO___

ENGINE INSTALLATION CERTIFICATION

The fire apparatus manufacturer shall provide a certification, along with a letter from the engine manufacturer stating they approve of the engine installation in the bidder's chassis. The certification shall be provided at the time of bid.

Bidder Complies YES_____ NO___

CAB INTEGRITY CERTIFICATION

The cab shall exceed the strict and detailed requirements of the Economic Commission for Europe Structural Standard, ECE-29R. The test shall consist of an impact load test and a vertical load test to the cab.

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

- SAE J2420 COE Frontal Strength Evaluation - Dynamic Loading Heavy Trucks

- Roof Crush

The cab shall be subjected to a roof crush force of 65,000 lb. This value shall be 450 percent of the ECE 29 criteria, which must be equivalent to the front axle rating up to a maximum of ten (10) metric tons.

- Side Impact

The cab shall be subjected to dynamic preload with a 13,275-lb moving barrier is slammed into the side of the cab at 5.50 mph, striking with an impact of 13,000 ft-lb of energy. This test shall closely represent the forces a cab shall see in a rollover incident.

- Frontal Impact

The cab shall withstand a frontal force produced from 65,200 ft-lb of energy using a swing-bob type platen.

The same cab shall withstand all tests without any measurable intrusion into the survival space of the occupant area.

There shall be no exception to any portion of the cab integrity certification. Nonconformance shall lead to immediate rejection of bid.

Bidder Complies YES_____ NO___

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EXCEPTIONS TO THE SPECIFICATIONS

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)

(9)

(10)

(11)

(12)

(13)

(14)

(15)

(16)

OPTIONS

THE FOLLOWING EQUIPMENT AND APPLIANCE LISTED BELOW SHALL NOT BE PART OF THE BASE BID, BUT LISTED SEPARATELY FOR POSSIBLE PURCHASE BY THE GUILFORD FIRE DEPARTMENT.

OPTION1;

HALE FOAM MASTER E-SERIES 5.0 (SHALL BE COMPATIBLE WITH UNIVERSAL GOLD ATC)

The apparatus shall be equipped with an automatic, electronically controlled direct injection, rotary gear pump, and discharge side foam proportioning system. The operation of foam proportioning, shall be based on the direct measurement of water flow, and shall remain consistent within the specified flow and pressures.

SYSTEM REQUIREMENTS	
The complete foam proportioning system shall include the following components:	
A.	FOAM PUMP
B.	CONTROL SYSTEM
C.	TANK SELECTOR AND FLUSHING VALVES
D.	FOAM CONCENTRATE STRAINER
E.	INTEGRAL CHECK VALVE/INJECTOR FITTING
F.	FLOWMETER(S) AND FLOWMETER DISPLAY UNITS
G.	CONTROL CABLES
H.	LOW TANK LEVEL SWITCH(S)
I.	FOAM TANK(S)
J.	DOCUMENTATION

SYSTEM PERFORMANCE & OPERATION	
Foam Pump	- Rotary Gear
Foam Output	- 5.0 GPM (19 LPM)
System Operating Pressure	- 150 PSIG (10 BAR)
Maximum Operating Pressure	- 250 PSIG (17 BAR)
Maximum Operating Temperature	- 160 deg. F (71 deg. C)
Pump Motor	- 3/4 HP (0.5 kW) 12 Volt DC
Operating Amp Draw	- 20 Amps
Maximum Amp Draw	- 60 Amps

SYSTEM CAPACITY	
FOAM CONCENTRATION	WATER FLOW
0.1% @ 5000 GPM	(18927 LPM)
0.2% @ 2500 GPM	(9463 LPM)

0.3%	@ 1667 GPM	(6310 LPM)
0.5%	@ 1000 GPM	(3785 LPM)
1.0%	@ 500 GPM	(1893 LPM)
3.0%	@ 167 GPM	(632 LPM)
6.0%	@ 83 GPM	(314 LPM)

FOAM LOCATIONS

The foam system shall be piped to the following discharges:

Two (2) 1 3/4" crosslays
One (1) 2 ½" crosslay

Right side 2 1/2" discharge

WARRANTY

The foam proportioning system shall have a one- (1) year limited manufacturer warranty.

STAINLESS STEEL PUMP MANIFOLD

The auxiliary pump manifold shall be constructed of stainless steel.

FOAM PUMP

The foam proportioning system shall be compatible with Class A foam concentrates and most high viscosity normal hydrocarbon or polar solvent Class B foam concentrates. The foam proportioning system shall be capable of delivering the rated foam concentrate flow with the above-mentioned foam concentrate types.

The foam proportioning system shall be based on an electric motor driven, rotary gear foam concentrate pump, rated at 5.0 gallon per minute (19 liter per minute), foam concentrate flow rate with a maximum operating pressure of 250 PSIG (17 BAR). The electric motor shall be powered by 12 volts direct current with a 3/4 HP (0.5 kW) power rating at a maximum current draw of 60 amps.

The rotary gear pump shall be close coupled to the motor without an oil-filled gearbox. The foam concentrate pump and all wetted parts of the system shall be constructed of corrosion resistant materials compatible with all foam concentrates being used. The pump body, pump head, and pump cover shall be constructed of bronze with pump shaft, gears, and bearings constructed from stainless steel. There shall be a mechanical (pump shaft) seal provided to prevent foam concentrate from leaking around the rotating shaft. An internal (foam concentrate) relief valve constructed of stainless steel and preset at the factory for maximum system operating pressure shall be incorporated into the foam pump to protect the pump from over-pressurization. No components of the foam concentrate pump and foam system shall be manufactured from aluminum.

The foam pump motor assembly shall be permanently attached to the apparatus mountable base plate. The entire base plate mounted assembly shall have electrical components sealed to NEMA 4X for mounting in the apparatus pump compartment / suitable location on the apparatus.

There shall be a foam concentrate flowmeter integral to the foam concentrate pump. The foam concentrate flow meter shall provide a signal to the electronic control unit to make sure the proper amount of foam concentrate is injected into the discharge stream.

CONTROL SYSTEM

The system shall be equipped with an electronic control unit, suitable for installation on the pump operator's panel as the single point of operation for the foam proportioning system. Incorporated within the control unit shall be a microprocessor that receives input from water flowmeter(s) while receiving foam concentrate pump output information from the foam concentrate flowmeter.

The microprocessor, through constant comparison of the flow signals, ensures the operator of preset proportional amounts of foam concentrate injected into the discharge stream of the fire pump. The electronic control unit shall permit the pump operator to perform the following control and operation functions for the foam proportioning system:

Provide push button On/Off control of foam proportioning system.
Provide push button control of foam proportioning rates from 0.1% to 10.0% in 0.1% increments.
Show real time flow rate of water or foam solution.
Show total volume of water or foam solution discharged during and after foam operations.
Show foam concentrate injection rate.
Show total amount of foam concentrate consumed.
Permit resetting of totalized values for water and foam concentrate.
Simulate water flow rates for manual operation, calibration, and testing of foam system.

- Enable system setup and full range system diagnostic functions.
- Indicate on LED bar graph foam concentrate being injected and the foam system capacity.
- Store independent default values for Class A and Class B foam concentrate.
- Flash a "Low Concentrate" warning when the foam concentrate tank runs low.
- Flash a "No Concentrate" warning and shuts the system off when the foam tank is empty.
- Flash a "Low Battery" warning when battery voltage is low enough to affect system operation.
- Flash a "Hot" warning when the system is running hot due to low voltage or radiant heat.

There shall be a distribution box attached to the base plate to provide ease of installation. The distribution box shall be sealed to a NEMA 4 times or equal rating to permit the installation in the pump compartment.

Foam concentrate flow feedback shall be provided to the control unit through the distribution box by a sensor mounted in the foam pump body. Rotors in the foam discharge side of the foam pump shall provide the targets to pulse the sensor to generate a feedback signal.

DISTRIBUTION BOX

The distribution box shall receive 12-volt direct current power from the apparatus electrical system as the only source of power to operate the system and power component sensors. The control power shall be distributed to the control unit; flowmeter sensor and foam concentrate feedback sensor through a conductor in the 100% shielded cable set provided by the foam-proportioning manufacturer. The microprocessor in the control unit shall process input signals from the flowmeter sensor and foam feedback sensor to determine proper duty cycle for the electric motor to run. The distribution box shall provide power to the electric motor, based on signals received from the control unit, at a variable rate to ensure that the correct proportion of foam concentrate, preset by the pump operator on the control unit, is injected into the discharge stream. The distribution box shall have a main power control switch and over current protection for the foam proportioning system. All primary electrical wires for the foam concentrate system shall be type SXL OR GXL (SAE J1128) per NFPA requirements. Electrical connection shall be made using heavy-duty 5/16" diameter studs and nuts.

TANK SELECTOR AND FLUSHING VALVES - DUAL TANK

Dual concentrate tanks, when installed on the apparatus, shall have a dual tank switch over system installed to provide a rapid change over of foam concentrate reservoirs. The dual tank selector valves shall also have provision for connection of flushing water to prevent mixing of dissimilar, incompatible foam concentrates.

BY-PASS VALVE

When a manual dual tank selector, single tank flush valve or a single tank system, without flushing capabilities is installed, there shall be a three-way bypass valve provided on the discharge of the foam pump. This shall permit operation of the foam concentrate pump for test and calibration purposes without injecting foam concentrate into the water discharge. The bypass valve shall be capable of being panel mounted.

FOAM CONCENTRATE STRAINERS - FLUSHING SYSTEMS

There shall be a strainer body constructed of brass provided on this system, which is subject to flushing water pressure. The panel mounted, field serviceable, foam concentrate strainer rated at 500 PSIG (34 BAR) minimum shall be installed on the pump panel. The strainer body constructed of brass with chrome cap and an easily removable stainless steel mesh screen shall be provided. A 1-1/2" strainer with a 3/4" NPT connection ports shall be used for Class A foam concentrate and a 2-1/2" strainer with 1" NPT connection ports shall be used for Class B foam concentrate.

INTEGRAL CHECK VALVE/INJECTOR FITTINGS

There shall be integral check valves/ injector fittings installed to prevent contamination of the foam concentrate supply. The foam concentrate shall be injected into the water pumps discharge stream through this check valve/injector fitting. The check valve/injector fitting shall be of one-piece construction of brass and stainless steel.

WATERWAY CHECK VALVES

There shall be wafer type check valves installed in the water pump discharge piping prior to the foam injection point. This shall prevent the contamination of the water pump and the apparatus booster tank.

CONTROL CABLES

The cables for connection of the control unit, distribution box, flowmeter display units, pressure transducers, and feedback sensor shall be 100% electrically shielded, molded male by female cord sets. The cord sets shall have the ability to connect together and the total length shall not exceed forty (40') feet. The connections shall be keyed to prevent misconnect and improper system operation. Shielding shall be provided by an aluminized cord sets Mylar shield within the PVC outer jacket. A drain wire shall be tied to one of the pins on each end of the cable. No externally attached ferrite beads shall be installed for electrical shielding. Coupling nuts on the cord sets ends shall be constructed of nickel-coated brass. Once proper connection has been made, the connections shall be sealed to NEMA 4X or equal.

LOW TANK LEVEL SWITCH

A low tank level switch shall be installed in each foam concentrate tank that supplies the foam proportioning system. The low tank level sensor shall be connected to the foam proportioning system to provide protection against dry running of the foam pump. The low tank level sensor can be mounted on the side, bottom, or top of

the foam concentrate tank. The low tank level sensor and electrical connections shall be sealed to prevent infusion of foam concentrate into the wiring and possible short circuit of the tank level sensor.

FOAM TANK

The foam proportioning system shall be supplied from the foam storage tank(s). The tank(s) shall be constructed of material compatible with foam concentrates being used in the system. Provision shall be made for installation of low-level tank sensors, and routing of sensor wiring. Tank capacity, venting, fill opening and foam outlet plumbing connections shall be in accordance with NFPA requirements.

FOAM TANKS (2)

There shall be two (2) thirty (30) gallon foam tanks designed as an integral part of the water tank. The foam cells shall have a separate fill tower and include a pressure/vacuum vent (PVV). The tank shall be configured with appropriate inlets and outlets for the specified foam application.

TANK VISION GAUGE

There shall be two (2) Tank Vision Foam Gauges, Models WL2600-FER & WL2700-FER. They have 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 foam tank to determine the correct volume in the tank. One shall be labeled "Foam A" and the other shall be labeled "Foam B". A tank vent is provided with the system.

FLOWMETER AND FLOW METER DISPLAY UNIT

A paddlewheel type flowmeter shall monitor water flow in foam capable discharges. The flowmeter body shall be constructed of bronze and the sensor assembly is locked into the tee with a pin and screw on cap. The flowmeter shall have a 500 PSIG (34 BAR) pressure rating per NFPA requirements.

One (1) flowmeter is required for proper operation of the foam proportioning system. Power for the flowmeter sensor shall be provided through the electrically shielded cable set from the control unit. Flowmeter having NPT threaded and Victaulic connections shall be used in the water discharge piping. The flowmeter selected shall be sized to monitor the minimum and maximum flow expected in the foam capable discharges.

OPERATING INSTRUCTION/SYSTEM PLACARD

There shall be an operating instruction system placard installed on the pump panel. This placard shall be a schematic of the dual tank foam system, which has been installed.

DOCUMENTATION- FOAM MASTER SYSTEM

There shall be provided the following information upon delivery of the apparatus:

Foam Concentrate Compatibility List

- Two Description Manuals
- Two Installation Manuals
- Two Operation Manuals

FOAM CONCENTRATE PLATE

A permanently affixed plate shall be installed at or near any foam concentrate tank fill opening that reads "FOAM TANK FILL".

A permanently affixed plate shall be installed at or near any foam concentrate tank fill opening. This plate shall specify the type(s) of foam concentrate the system is designed to use, any restrictions on the types of foam concentrate that can be used with the system and a warning message that reads "WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM".

FOAM PROPORTIONING SYSTEMS - NFPA TEST

NFPA 1901 PERFORMANCE REQUIREMENTS

The proportioning system shall be capable of proportioning foam concentrate in accordance with the foam concentrate manufacturer's recommendation for the type of foam concentrate used in the system over the system's design range of flow and pressure. The foam proportioning systems water flow characteristics and the range of proportioning ratios shall be specified.

The foam system shall comply with NFPA 1901 Chapter 17.0 as it relates to the specified system.

FOAM TANK PIPING

The foam supply line shall be non-collapsible. There shall be a means provided to prevent water backflow in to the foam proportioning system and storage tank(s).

Either a filter or strainer provided on the foam concentrate supply side of the foam proportioning to prevent any debris that may affect the operation of the foam proportioning system from entering the system. The strainer assembly shall consist of a removable straining element, housing, and retainer. The strainer assembly shall allow full flow capacity of the foam supply line.

FLUSHING

Foam concentrate system flush line(s) shall be provided as required by the foam system manufacturer. The design shall incorporate a means to prevent water backflow into the concentrate tank or water tank during the flushing operation. Where the foam proportioning system is connected to more than one (1) foam storage tank, provisions shall be made to flush all common lines to avoid contamination of dissimilar foam concentrates.

CONTROLS FOR FOAM SYSTEM

The foam proportioning system operation controls shall be located at or near the pump operator's position and shall be clearly labeled.

All foam-proportioning systems that require flushing shall provide controls, which enable the operator to flush the system in accordance with the foam manufacturer's instructions.

Foam proportioning systems that incorporate foam concentrate metering valves shall have each metering valve calibrated to indicate the rate(s) of flow of the foam concentrate proportioning available as determined by the design of the system.

Foam proportioning systems that incorporate automatic proportioning features shall be equipped with controls, which enable the operator to isolate the automatic feature and operate the system in a manual mode.

NAMEPLATE, LABELS, INSTRUCTION SPECIFICATIONS

There shall be a nameplate provided that is clearly marked with the identification and function of each control gauge and indicator related to the foam proportioning system.

There shall be a label provided on the operator's panel that identifies the type(s) of foam concentrate(s) the system is designed to use. This label shall state the minimum/maximum foam-proportioning rate at the minimum/maximum foam proportioning rated system flow and pressure.

Foam proportioning system instruction plate shall be provided. This includes a minimum piping schematic of the system and basic operating instructions.

Two (2) copies of an operations and maintenance manual shall be provided. These manuals shall include a complete diagram of the system, along with operating instructions and details outlining all recommended maintenance procedures.

FOAM PROPORTIONING SYSTEM TESTING

The apparatus manufacturer shall test the accuracy of the foam proportioning system prior to delivery of the apparatus.

If the manufacturer's rated proportioning ratio is below 3%, the foam system shall proportion foam concentrate within 0% /+40% of the manufacturer's rated proportioning ratio across the manufacturer stated range of water flow and pressure.

If the manufacturer's rated proportioning ratio is above 3%, the foam system shall proportion foam concentrate within 0% /+40% of the manufacturer's rated proportioning ratio or 1 percentage point, whichever is less across the manufacturer's stated range of water flow and pressure.

OPTION 1: **Cost: $_____**

OPTION 2:

HALE FOAM LOGIX (OR EQUIVALENT)

Hale Foam Logix 1.7AHP foam injection system for Class A foam with full function digital control with a Class 1 Flowsensor. Shall be NFPA backflow compliant.

The system shall be connected to the Class A foam tank

OPTION 2: **Cost $_____**

OPTION 3:

STANDARD HIGH SIDE COMPARTMENTS (OFFICER SIDE)

The cost of providing standard high side compartment on officer side of apparatus. The bidders are required to give the inside and outside dimension of the high side compartments.

OPTION 3: **Cost $_____**

OPTION 4:

FOAM OUTLET'S A&B FOAM

There shall be two (2) foam outlet's installed on the driver's side pump panel. The outlet shall be piped to two 25 gallon foam tanks with 1.00" stainless steel pipe or flexible hose capable of resisting the corrosion caused by foam concentrates, and shall have a 1.00" inline ball valve with the control handle located adjacent to the foam outlet.

A .375" valve shall be provided adjacent to the foam outlet and shall be plumbed into the foam line, after the valve, to allow flushing of the outlet plumbing.

The outlet's shall terminate with a stainless steel quick disconnect male fitting with matching female stainless steel cap. A female stainless steel adapter shall be shipped loose for connection of the customer's foam eductor.

The plumbing for the class B foam tank shall be design to allow the use of Universal Gold ATC foam

OPTION 4: Cost $_____

OPTION 5:

TASK FORCE TIPS FOAM EDUCTOR

There shall be one (1) UE-095-NF foam eductor with flow capability of 95 GPM. The eductor shall be constructed of hard coat anodized aluminum material for maximum resistance to corrosion and ware. A 1 ½" full time swivel rocker lug inlet coupling and 1 ½" NH male outlet with extra large 36" pick up hose with stainless steel wand is included.

OPTION 5: Cost $_____

OPTION 6

HYDRAULIC LADDER RACK

There shall be a Ziamatic Model OALS hydraulic outside ladder system mounted horizontally on the right side of the apparatus body with dual 8" stroke cylinders installed one at each end. This system requires minimal space, 7" of width and 10" of depth on the inside wall, and 4-1/2" x 5" on the exterior wall. Two-(2) 2" x 4" heavy wall booms connect hydraulic cylinders to the custom rack with the power unit set at 1500 PSI for the stowed position and 2500 PSI in the down position. Pneumatic power clamps lock the booms in the stored position, payload varies with boom length. This unit is equipped with control and electrical panels requiring 125 amp electrical services.

The system has been cycle tested over more than 6000 operating cycles meeting NFPA current standards.

OPTION 6:

Cost $_____

OPTION 7

WILL-BURT LIGHT TOWER

Will-Burt Night Scan 3.0 four (4) head 6000 watt with four (4) FRC optimum quartz halogen. The bidders shall give price for installation on the cab roof of the engine. The price shall include all reinforcement of the cab and all wiring to operate the light tower.

OPTION 7: Cost $_____

OPTION 8

COMPARTMENT ON ROOF

All bidders are requested to give a price for a compartment to be mounted on the cab roof this compartment shall be constructed of bright aluminum raise diamond plate and have a cover. The dimension of this compartment is 52”3/4 long be 90 1/8” wide by 13” deep.

OPTION 8 : Cost $_____

OPTION 9

THERMAL IMAGER

All bidders are requested to provide cost for a Bullard T4 thermal imager with charger.

OPTION 9: Cost $_____

OPTION 10

TELESCOPIC PIPING
The deluge riser piping shall include an 18.00" Elkhart Electrically Actuated Extender.

This extension shall be telescopic to allow the deluge gun to be raised 18.00" increasing the range of operation.

A control shall be mounted on the pump operator’s panel to actuate the Extender. The wiring shall include a "Do not move vehicle" light inside the cab when the monitor is in the raised position.

MONITOR
An Elkhart Vulcan RF electric radio remote control waterway monitor shall be properly installed on the deluge riser.

This monitor shall include all electric 12 VDC controls for the monitor.

The monitor shall include the automatic stow feature.

A remote control shall be installed on the pump operator's panel and a wireless radio remote shall be furnished with loose equipment.

The monitor shall be painted to match the body.

NOZZLE
An Elkhart #SM-1250E electrically controlled Select-O-Matic master stream nozzle shall be provided.

The deluge riser shall have male National Pipe Threads for mounting the Vulcan monitor.

Elkhart ST-194 stacked tips and 283-A Stream Shaper shall also be provided.

OPTION 10: Cost $_____

OPTION 11

ANGUS SUPPLY HOSE

All bidders are requested to quote the price for 100' length of Angus HI-Vol 4" supply line yellow with locking coupling. The Guilford Department is we select this option well purchase a minimum of 2000 feet.

OPTION 11: Cost $_____

END OF OPTIONS

FIRE DEPARTMENT SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

1) The attached Class A Pumping Engine Specifications shall be considered as a minimum. Should the manufacturer's current published data on specifications exceed these, they shall be considered as minimum and shall be furnished.

2) The Fire Department shall be the sole judge as to whether any proposal complies with the intent of these Specifications, and as such, the Fire Department shall recommend the award of the contract to the manufacturer who offers the Class A Pumping Engine most advantageous to the needs of the Department. The Fire Chief and the Fire Commission shall review the bids and select a bidder to recommend to the Board of Selectmen (BOS). Upon bid award by the BOS, all bidders will be notified pursuant to Town procedures.

3) It is the intent of the Fire Department to recommend an award to the bidder who in the opinion of the Department complies with these specifications. Parts availability, service capability, and total life cost will be considered.

4) Questions regarding the specifications or the bidding procedure shall be directed *in writing only* to.

Charles E. Herrschaft Jr.
Chief of Department
Fax # 203-453-8005
E-mail gfd10@snet.net
Cc millmanp@ci.guilford.ct.us

5) The intent of these specifications to provide minimum requirements for the manufacturing of a Class A Pumping Engine vehicle. These specifications establish essential criteria for design, performance, equipment and appearance of the vehicle.

Does your bid comply? Yes____
No____

6) Only bids from manufacturers with local dealers will be accepted. The manufacturer shall be represented by a full-time dealer or sales agent. Bids from manufacturers with no local dealer or having only part-time dealers will be rejected.

Does your bid comply? Yes____
No____

10) The manufacturer and/or dealer will maintain a staffed service center within 50 miles of the purchaser. This service center shall be fully enclosed, heated and capable of repairing the vehicle.

Does your bid comply? Yes____
No____

11) In order to avoid divided warranty responsibility, only bids from manufacturers who build their own chassis and bodies will be considered. Manufacturers, who buy chassis or bodies from another manufacturer, whether in a finished or unfinished state, will be rejected. Bids based on existing stock units or demonstrator units will be rejected. The body must be built in exact accordance with the attached specifications. The body described herein has been designed by the Fire Department and represents the required compartment layout and placement of equipment to best suit their needs.

Does your bid comply? Yes____
No____

12) Only bids containing the following warranty program will be considered.

A) Body - including all, mechanical, cabinetry etc. - the entire body, including installation of same, shall be guaranteed for one (1) year from date of receipt, covering 100% parts and labor.

Does your bid comply? Yes____
No____

B) Structural Integrity - The structural integrity of the body shall be guaranteed for TEN (10) year.

Does your bid comply? Yes____
No____

C) Electrical System - shall be warranted for minimum of one (1) year.

Does your bid comply? Yes____
No____

D) Paint and Finish - shall be warranted for four years.

Does your bid comply? Yes____
No____

BIDDERS MUST INCLUDE STATEMENT OF WARRANTY POLICIES WITH BID.

Does your bid comply? Yes____
No____

13) Bidders are required to mark each paragraph of the purchasers specifications as to compliance or non- compliance, and return same with their bid.

Does your bid comply? Yes____
No____

14) During the course of construction, the builder will be required to make arrangements for two (2) inspection trips for three (3) members of the Fire Dept. to the factory. The cost of these trips shall be borne by the builder. If nothing is mentioned in the bid pertaining to the inspection trips, it will be assumed that bidder is taking exception and will be rejected. If manufacturer is within 200 miles, ground transportation is to be provided. Travel in excess of this will be Air transportation.

Does your bid comply? Yes____
No____

15) Exceptions to the construction methods or interior and exterior compartment layout will not be allowed. Exceptions to name brand items will be allowed. Brand name items mentioned in these specifications are used to establish the level of quality required and items of equal quality maybe substituted. It is the bidder's responsibility to explain all exceptions in detail on a separate sheet, indicating the paragraph in the purchaser's specifications where the manufacturer is taking exception and his reason for same. The Department shall be the judge as to whether or not the exception is, in fact, equal.

Does your bid comply? Yes____
No____

16) All bidders are required to include with their bid detailed CAD Blueprints of the unit they propose; showing the left, right and rear exterior; the left, right, front, and top views of interior. No exceptions. Bids not containing these Blueprints will be rejected. THESE BLUEPRINTS MUST BE PROVIDED BY THE MANUFACTURER TO INSURE FULL COMPLIANCE UNDERSTANDING OF THE COMPLEXITY OF THIS VEHICLE.

Does your bid comply? Yes____
No____

17) Bidders must submit complete detailed construction specifications covering products offered for vehicle as proposed. A general statement or letter stating that the bidder meets all specifications will not be sufficient evidence of bidder's intention, nor will a photo static copy of these specifications be acceptable.

Does your bid comply? Yes____
No____

18) All forms must be filled in and signed by the Bidder. Failure to comply will mean immediate rejection of the bid.

Does your bid comply? Yes____
No____

19) A Bidder must provide with the bid a list of at least 24 units of similar design delivered and in service. All bidders shall provide with their proposal a cost breakdown showing prices for all components, equipment and accessories.

Does your bid comply? Yes____
No____

20) The manufacturer must be engaged actively in the business of manufacturing emergency vehicles and submit proof of such for a period of not less than twenty prior years under the same name.

Does your bid comply? Yes____
No____
_

21) Time of delivery is of essence. Bidder shall state delivery time of the Class A Pumping Engine.

Does your bid comply? Yes____
No____

22) The Engine body shall be new custom built. Shall not be leftover, demonstrator, or prototype model.

Does your bid comply? Yes____
No____

23) Prior to the award of contract, any prospective bidder, upon request of the Department, shall provide a location of a similar unit for inspection and construction preview.

Does your bid comply? Yes____ No____

24) All bidders must submit as part of their bid proposal, a sample set of wiring diagrams showing their basic wiring system.

Does your bid comply? Yes____ No____

25) ALL EXCEPTIONS TO THESE SPECIFICATIONS SHALL be listed under EXCEPTIONS TO THE SPECIFICATIONS and any bid submitted without EXPLICIT DETAILED EXCEPTIONS will be required to meet every detail of these specifications, regardless of the cost to the bidder. A general exception cannot be taken for any paragraph, and full word for word WRITTEN COMPARISON for each component must be included within the body of the bid.

Does your bid comply? Yes____ No____

26) The Class A Pumping Engine shall meet or exceed all applicable State, Federal, and NFPA regulations and laws including weight and vehicle restriction in effect at the time the proposals are received.

Does your bid comply? Yes____ No____

27) The bid price shall not include any Local, State, or Federal taxes.

Does your bid comply? Yes____ No____

28) The Fire Department reserves the right to inspect the progress of the Class A Pumping Engine at any reasonable time during its manufacture.

Does your bid comply? Yes____ No____

29) The design of the apparatus must embody the latest approved automotive engineering practices. The workmanship must be of the highest quality in its respective field. Special consideration will be given to the following points: Accessibility of the various units which require periodic maintenance; ease of operation; and symmetrical proportions.

Does your bid comply? Yes____ No____

30) Welding shall not be employed in the assembly of the apparatus in a manner that will prevent the ready removal of any component part for service and repair.

Does your bid comply? Yes____ No____

31) The apparatus will be designed and the equipment mounted with due consideration to the distribution of load between the front and rear axles and left and right side of the Pumping Engine so that all specified equipment, full complement of personnel and equipment will be carried without damage to the apparatus.

Does your bid comply? Yes____
No____

FORM CONTRACT

AGREEMENT

This Agreement (the "Agreement") is entered into the ___ day of_____, 2011 ("Effective Date") by and between the Town of Guilford (the "Town") and _____ , a _____ located at _____, _____ (the "Contractor").

WHEREAS, the Town has issued an Invitation for Bid (the "IFB") for purchase and delivery of _____(the "Work"); and

WHEREAS, Contractor submitted its Bid to the Town on _____, for the Work in accordance with the requirements and specifications of the IFB; and

WHEREAS, the Town has awarded the BID to the Contractor and the Town and the Contractor desire to enter into a formal Agreement for the performance of the Work;

THEREFORE, in consideration of the recitals set forth above and the mutual promises by the parties below, the parties agree as follows:

1. General. The Contractor agrees to perform the Work in accordance with this Agreement, the General Specifications, the IFB and all other documents encompassing the Contract Documents, as listed and defined below. The Contract Documents represent the entire and integrated agreement between the Town and the Contractor and supersede all prior negotiations, representations or agreements, whether written or oral.

2. Duties. Contractor shall perform the Work described in the Contract Documents except for any work that is specifically prescribed in the Contract Documents to be the responsibility of another person. Contractor shall furnish all labor, equipment, trucks, materials, facilities, supplies, transport, and any other things necessary to carry out the terms of the Contract Documents. The Work shall be administered on behalf of the Town by _____. The Contractor shall follow any and all instructions, reviews, advice, approvals or directives issued by the _____.

3. Compliance with Laws. Contractor shall comply with all federal, state and local laws and regulations governing the Work, whether or not such laws and regulations are fully and properly reflected in the IFB.

4. Term. The term of this Agreement shall commence on the Effective Date of this Agreement. The Contractor shall not start the Work prior to having received a notification to proceed from the Town. Contractor shall achieve completion of all Work to be performed under the Contract Documents no later than _____, 2012 ("Completion Date"), subject to any time adjustments as provided for in the Contract Documents. TIME IS OF THE ESSENCE.

5. Payment. The Town will pay the Contractor the sum of _____ Dollars ($_____) upon the completion by the Contractor of all Work required to be performed under the terms of the Contract Documents and acceptance of the Work by the Town.

6. Liability. The Contractor agrees to assume full responsibility and liability for damage or injury to persons or real or tangible personal property caused directly or indirectly by the negligent or tortious actions or inactions of the Contractor, its agents, employees or subcontractors with respect to the Work. The Contractor further agrees to assume full responsibility and liability for the Contractor's failure to comply with any applicable federal, state or local law or regulation in the performance of Contractor's duties pursuant to the Contract Documents.

7. Warranties. Attached to this Agreement as Exhibits _____ are warranties that will be provided by the manufacturers of the specified components of the machine.

8. Insurance. The Contractor shall carry and keep in force during the term of this Agreement insurance as more specifically described in the IFB, by a company or companies authorized to do business in Connecticut. The Company shall provide certificates of insurance specifying such coverage and naming the Town as additional insured prior to the start of the Work.

9. Indemnification. The Contractor expressly agrees to at all times indemnify, defend and hold harmless the Town and its officers, agents and employees, on account of any and all demands; claims; damages; losses; litigation; financial costs and expenses, including counsel's fees; and compensation arising out of personal injuries (including death), any damage to property, real or personal, and any other loss or expense, directly or indirectly, arising out of, related to or connected with the Work to be performed hereunder by the Contractor, its employees, agents, subcontractors, material suppliers, or anyone directly or indirectly employed by any of them. The Contractor shall and does hereby assume and agree to pay for the defense of all such claims, demands, suits, proceedings and litigation. The provisions of this paragraph shall survive the expiration or early termination of this Agreement; shall be separate and independent of any other provision or requirement of this Agreement; and shall not be limited by reason of any insurance coverage provided hereunder.

10. No Assignment. The Contractor shall not subcontract, transfer or assign its obligations under the Contract Documents or any portion thereof without the prior written consent of the Town.

11. Contract Documents. The Contract Documents include, without limitation, the following:

(i) The Agreement;

(ii) The IFB, including the General Specifications;

(iii) Any addenda issued prior to the execution of this Agreement; and

(iv) [list any additional Contract Documents] _____.

12. Change Orders, Price Modifications, and Other Amendments. The Town shall have the right to require the Contractor to make alterations of, additions to and deductions from the Work. All such changes to the Work shall be made by a written change order written by the Town. The Contractor shall compute the effect of the change order upon the Agreement price, subject to review and acceptance by the Town. Any other changes or amendments to the terms of this Agreement and the other Contract Documents may be made only by a written document referencing this Agreement and executed by both parties.

13. Connecticut Law and Courts. This Agreement shall be governed by and construed in accordance with the laws of the State of Connecticut and the parties irrevocably submit in any suit, action or proceeding arising out of the Agreement to the jurisdiction of the United States District Court for the District of Connecticut and the jurisdiction of any court of the State of Connecticut.

14. Non-Appropriation Clause. Notwithstanding anything to the contrary stated herein or in the IFB, the Town's obligations under this Agreement shall be subject to and dependent upon appropriations being made from time to time by the Board of Finance of the Town. In the event the funding is not available at the time of the execution of the Agreement and/or funding is not available in the Town budget approved for the fiscal year(s) in which the Agreement is to be performed after execution of the Agreement, the Town reserves the right to cancel the Agreement.

15 Execution. This Agreement may be executed in one or more counterparts, each of which shall be considered an original instrument, but all of which shall be considered one and the same agreement, and shall become binding when one or more counterparts have been signed by each of the parties hereto and delivered (including delivery by facsimile) to each of the parties.

16. Default. If either party breaches the Contract Documents in any respect, the non-breaching party shall provide written notice of such breach to the breaching party and afford the breaching party an opportunity to cure the breach within ten (10) days from the date that the breaching party receives such notice. In the case of a Contractor breach, any other time period which the Town sets forth in the notice shall control. Such right to cure period shall be extended if the non-breaching party is satisfied that the breaching party is making a good faith effort to cure but the nature of the breach is such that it cannot be cured within the right to cure period. The notice may include an effective contract cancellation date if the breach is not cured by the stated cancellation date and no further action shall be required of any party to effect the cancellation. If the Town believes that the Contractor has not performed according to the Contract, the Town may withhold payment in whole or in part pending resolution of the performance issue. In addition to all remedies that the Town may have, the Town, in its sole discretion, may setoff (i) any cost or expenses that the Town incurs resulting from the Contractor's unexcused non-performance under the Contract Documents and (ii) any other amounts that are due or may become due from the State to the Contractor, against amounts otherwise due or that may become due to the Contractor under the

Contract Documents. The Town shall be entitled to all rights and remedies under law and in equity, including, without limitation, the aforesaid setoff rights. No waiver of any breach of the Contract shall be deemed to be a waiver of any other or subsequent breach.

17. Hazardous Materials. The Contractor, when it will be providing, using, storing, delivering or disposing of any toxic, hazardous or potentially dangerous materials, shall advise in writing, and receive written approval of the Town of the use of such hazardous materials in advance of conducting any Work and the Contractor is responsible for protecting its own employees or agents from the hazards associated with such materials. The Contractor shall perform all required procedures necessary to insure that there will be no discharge, spillage, uncontrolled loss, seepage or filtration of any hazardous or toxic waste on the site caused by its operations. The Contractor is responsible for any and all costs and liabilities associated with the clean up of any spillage etc. caused by its operations.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the day and year first written above.

TOWN OF GUILFORD

By_____
Name:
Title: First Selectman
Hereunto Duly Authorized

[name of contractor]

By_____
Name:
Title:
Hereunto Duly Authorized

NON-COLLUSIVE AFFIDAVIT OF BIDDERS

[1 page]

RFP #3-1112 One Class A Pumping Truck

The undersigned bidder, having fully informed themselves regarding the accuracy of the statements made herein certifies that;

1. the bid has been arrived at by the bidder independently and has been submitted without collusion with, and without any agreement, understanding, or planned common course of action with any other vendor of materials, supplies, equipment, or services described in the invitation to bid, designed to limit independent bidding or competition, and

2. the contents of the bid have not been communicated by the bidder and its employees or agents to any person not an employee or agent of the bidder or its surety on any bond furnished with the bid, and will not be communicated to any such person prior to the official opening of the bid.

3. no Selectman or other officer or employee or person whose salary is payable in whole or in part from the Town of Guilford, nor any immediate family member thereof, is directly or indirectly interested in the Bid/Proposal, or in the supplies, materials, equipment, work or labor to which it relates, or in any profits thereof, except as otherwise permitted in accordance with the provisions of the Code of Ethics, set forth in Chapter 31 of the Code of the Town of Guilford.

The undersigned further certifies that this statement is executed for the purpose of inducing the Town of Guilford to consider the bid and make an award in accordance therewith.

Subscribed and sworn to me _____
this _____ day of _____, 20_____.

Legal Name of Bidder: _____

Business Name: _____
Business Address: _____
_____

_____
Signature and Title of Person

_____ My Commission Expires_____
Notary Public Date

AFFIRMATIVE ACTION STATEMENT

REQUIREMENT: Any vendor or bidder seeking to do business with the Town of Guilford must upon request supply the Town with any information concerning the Affirmative Action/Equal Employment Practices of the vendor/bidder. Failure to supply such information, when requested, will result in the termination of any further transactions between the vendor/bidder and the Town of Guilford.

Note: All vendor/bidders with more than ten (10) employees shall be required to complete the Affirmative Action/Equal Opportunity Employment Requirements Statement on an annual basis, except as note below:

1. *All vendors or bidders with less than ten (10) employees are exempt from this requirement;* [This form must be filled out and signed by all bidders, entering N/A where applicable]

2. All vendors/bidders that have completed this form within the last year;

If either of the above applies, please indicate the:

a. number of employees
b. completed this form within one year

[ ]Yes [ ]No

Date completed: _____

FOR SEALED BIDS: All bidders submitting a sealed bid will be required to complete the Affirmative Action Statement. If the form has been completed in the past year, please include a Xeroxed copy of the initial form included with your bid. If significant changes have taken place in the past year, please update the changes on this form.

COMPANY ADDRESS: _____

_____

_____

BUSINESS: _____

_____

Type of Organization:

(please check) [ ] Corporation [ ] Partnership [ ] Individual

If vendor/bidder filing this application is not the above named company, please provide the name, address, telephone and fax numbers of the reporting unit, branch agent, and representative.

EQUAL EMPLOYMENT OPPORTUNITY:

The vendor/bidder is instructed to complete the following:

1. Does the company have a written policy statement regarding equal employment opportunity?

   [ ]Yes [ ]No

   (If yes, attach a copy)

2. In recruiting employees are all sources of recruitment notified that all qualified applicants will receive equitable consideration?

   [ ]Yes [ ]No

   If yes, provide brief description of what methods were employed:

   _____

   _____

   _____

   _____

3. Do all recruitment advertisements state that you are an Equal Opportunity Employer?

   [ ]Yes [ ]No

4. Please list by name and contact person, any local community agency or other group providing minority and female placement service, which you have contacted in the last twelve (12) months. If none, please state:

   _____

   _____

   _____

5. If additional means are employed to advertise or solicit minority and female applicants for employment opportunities within your company, please indicate:

_____

_____

_____

AFFIRMATIVE ACTION:

6. Does your company maintain a written Affirmative Action Plan for the employment of females and minorities?

[ ]Yes [ ]No

(If yes, attach a copy)

7. Please indicate the name and address of the company official(s) responsible for carrying out the Equal Opportunity/Affirmative Action Program for your company:

_____

_____

_____

8. If a written Affirmative Action for your company is not in place, please estimate the number of vacancies expected during the next twelve (12) months and indicate the numerical or percentage goals you have set for employment of minority people and females to make your labor force reflective of the labor market in which you operate.

_____

_____

The vendor is hereby notified that failure to complete the above form in a satisfactory manner will preclude such vendor from being actively considered to contract with the Town of Guilford. The vendor is further advised the Affirmative Action Statement included with the bid document will become part of the contract and that any breach of such statements will constitute a breach of contract subject to such remedies as provided by law.

I certify that there are no misrepresentations, omissions or falsifications in the foregoing statements and answers and that all entries above are true, complete and correct, to the best of my knowledge and belief.

_____	_____	_____
Date	Signature of Agent	Title

Subscribed and sworn before me at _____, County of _____, Connecticut,

This _____ day of _____, 2011.

_____
Notary Public

My commission expires: _____
Date

P R O P O S A L FORM

RFP #3-1112
Class A
Pumping Truck
PROPOSALS DUE:
Sept. 6, 2011
11:00 AM

Board of Selectmen/Fire Department
Attn. Purchasing
Town of Guilford Fire Department
390 Church Street
Guilford, CT 06437

BIDDER/RESPONDENT

Company Name: _____
Address: _____
_____

Telephone: _____ Fax: _____
e-mail: _____
Contact Person: _____ Title: _____

To the Board of Selectmen/Fire Department:

We submit for your consideration our bid/proposal for one Class A Pumping Truck in accordance with the RFP package. We have read the RFP documents including the Town of Guilford's General Conditions and Instructions to Bidders, the Fire Department Supplemental Instructions to Bidders and the Fire Department bid specifications and are submitting our bid in full compliance with all terms and conditions except as noted below under "Exceptions." We have enclosed our original bid bond, cashier's or certified check in the amount of 10% of the base bid, made payable to the Town of Guilford. Upon notification of the award, we will provide the following within five (5) business days after receipt of such notice:

(i) the required Certificate of Insurance from the following company:

_____;

(ii) Performance Bond in amount of 100% of Base bid issued by the following bonding company_____;and

(iii) three original contracts, in a form provided by the Town, executed by authorized officer of awarded Bidder.

If applicable, the undersigned acknowledges receipt of the following addenda to the bid package listed by number and date as follow:

Number_____, Dated:_____
Number_____, Dated:_____
Number_____, Dated:_____
(If any additional addendums, list on separate paper)

We offer to provide the Town of Guilford with one Class A Pumping Engine with stainless steel body ***to be delivered to the Fire Department no later than_____days after notice of award of the RFP***, including all materials, labor and delivery charges necessary to comply with the specifications for the total base bid price of:

BASE BID:_____($_____)
Write sum out insert number

All deliveries shall be coordinated with Charles E. Herrschaft, Jr, Fire Chief at 203-453-8056. Any questions or inquiries subsequent to bid award shall be directed to the Fire Chief.

We have completed and submit the required yes/no answers, under the Fire Department Specification Section as well as the Fire Department Supplemental Instructions to Bidders Section of the RFP package.

OPTIONS*: List option pricing on Fire Department Specifications Option Section of RFP Package.*

EXCEPTIONS : If any*: List on Fire Department Specifications Exceptions Section of RFP Package*.

The undersigned authorized representative hereby submits the above bid to the Town of Guilford.

Name of Contractor Entity: _____

By : _____

Print Name and Title: _____
Duly authorized

END OF RFP #3 – 1112
CLASS A PUMPING ENGINE SPECFICATIONS
TOWN OF GUILFORD