Town of Huachuca City

REQUEST FOR BID
FOR
Type VI Wildland Fire Fighting Apparatus

It is the intention of these specifications and requirements to obtain bids for one Type VI Fire Fighting Apparatus for the Town of Huachuca City, and to obtain bids that may be easily and completely evaluated on an equal and competitive basis. Vendors are encouraged to submit Bids for consideration.

Any and all bid submittals shall include all of the cost associated with the purchase of the Apparatus to include, but not limited to purchase price of the apparatus as well as, where applicable, local tax(es), State tax(es), County tax(es), delivery fees, Transaction Privilege Tax(es), etc. It is the intent of this bid to obtain an all-inclusive price.

Bids and proposals for this Type VI Fire Fighting Apparatus will be due no later than 5:00 P.M. AZ Time on 18 November 2024. Bids/proposals must be submitted via mail or hand delivery to: Town of Huachuca City, ATTN: Town Clerk, 500 N. Gonzales Blvd, Huachuca City, AZ 85616. Bids should be in sealed envelopes and clearly marked Type VI Fire Fighting Apparatus Bid on the envelope. Bids/proposals may also be submitted via email to: bthorpe2@huachucacityaz.gov. Subject line should be Type VI Fire Fighting Apparatus Bid. Bid opening will be on Tuesday 19 November 2024 at 9:00 A.M. AZ time at Huachuca City Town Hall.

Thank you very much for your consideration and thoughtful preparation on this project. Should there be any questions pertaining to this Bid feel free to contact the Agency representative for this request:

Captain Michael Kean
4817 S. Apache Ave,
Sierra Vista, Az 85650
Work: 520.378.2222
Email: mkean@fryfiredistrict.com

SPECIFICATIONS & REQUIREMENTS:

It is the intent of these specifications, and all requirements listed herein, to obtain bids on a brand-new Type VI Engine to meet the local needs of Town of Huachuca City, and to obtain bids that may be easily, and completely evaluated on an equal and competitive basis.

Because of the wide variances in Type VI Engine Construction available in the industry, the purpose of these specifications is to set a standard by which all proposals received may be evaluated, studied and compared equitably. Vendors are required to return one (1) copy of these specifications, correctly and completely furnishing all information requested and answering all questions attached. Please provide and enclose data literature, drawings, and detailed written lists of exceptions taken.

Considerable time and effort have been invested to design these specifications to the specific needs of Town of Huachuca City.

It is further understood that the vehicle described is for use by Town of Huachuca City Fire in the provision of emergency services to include the response to emergencies in an “All Hazards” 911 response system within the City and other deployments/assignments outside of the City to assist other Agencies.

BID BOND REQUIREMENT

All bidders are required to furnish a bid surety in the amount of ten percent (10%) of the total price of the proposal. Surety shall be in the form of a bond only. Any surety in the form of a cashier's check, certified check or money order shall be considered non-responsive and shall be cause for rejection of the bid proposal. NO EXCEPTIONS

PERFORMANCE BOND REQUIREMENT

The successful bidder shall furnish a 100% performance bond within thirty (30) days after award of contract. The performance bond shall be furnished by the company who shall build the apparatus being proposed. NO EXCEPTIONS

BUY AMERICAN

It is the intent of these specifications and requirements listed herein to obtain proposals on vehicles to meet the local needs of the Town of Huachuca City that may be easily and completely evaluated on an equal basis. In accordance with “Buy America” programs, proposals will be accepted only from manufacturers that are only 100% wholly owned, financed, and operated by USA based firms.

LEGAL RIGHT TO SPECIFY

The purchaser chooses to exercise its Legal Right to Specify as determined by the U.S. Supreme Court’s affirmation of the decision handed down in the case of Whitten Corp, Vs Paddock by the U.S. City Court of Massachusetts, the First Federal City Court:

1) As trained professionals, the Purchaser makes informed judgments on products that they feel best serve their needs. Technically, very few brands of material or equipment are exactly alike, and if the specifier wants to limit the specification to one source, he has the right to do so and enforce it.
2) Only the specifier has the responsibility and judgement for determining whether a proposed substitution is an “or equal”.
3) That from start to finish in the purchasing process only the specifier can ultimately decide if another desirable product is available in lieu of the specification.
4) Finally, the courts concluded, “The burden is on the supplier or manufacturer, who has NOT been specified, to convince the specifier that their product is equal for the purpose of a particular project”.

The specifier has determined that this product specification shall represent the product to which all offerings shall be compared. Because emergency response duties are hazardous and unavoidably dangerous activities, only trained personnel with specific knowledge in the area of Emergency Service Equipment who are designated by the City shall be allowed to make the final decision on the selection of the appropriate product to best serve Town of Huachuca City.

SERVICE

Due to inherent mechanical and electrical problems associated with all emergency vehicles. The Town of Huachuca City requires ALL BIDDERS to have a repair facility. This repair facility must be staffed with professional technicians with capabilities to repair all warranty repairs that may arise. ALL BIDDERS must have mobile service and be able to demonstrate that mobile service is an integral part of their day to day operations.

The Town of Huachuca City employs Emergency Vehicle Technician(s). Bidders shall allow, and fully reimburse any and all repairs authorized for repair under the warranty specified by the bidder. The procedure for such submittals and authorizations shall be reviewed during final inspection meetings.

GENERAL INFORMATION

The proposed apparatus will be constructed to withstand the severe and continuous use encountered during emergency firefighting services. The apparatus will be of the latest type, carefully designed and constructed with due consideration to the nature and distribution of the load to be sustained.

This proposal details the general design criteria of cab and chassis components, fire pump and related components (if applicable), water tank (if applicable), fire body, electrical components, painting, and equipment.

All items of these proposal specifications will conform to the fullest extent possible with the National Fire Protection Association Pamphlet No. 1906, latest edition, except as noted in the Statement-of-Exceptions.

The bidder will furnish satisfactory evidence of our ability to construct, supply service parts and technical assistance for the apparatus specified.

FIRE APPARATUS DOCUMENTATION

The bidder will supply, at the time of delivery, at least one (1) copy of the following documents:

The manufacturer's record of apparatus construction details, including the following information:

- Owner’s name and address
- Apparatus manufacturer, model and serial number
- Chassis make, model and serial number
- Front tire size and total rated capacity in pounds
- Rear tire size and total rated capacity in pounds
- Chassis weight distribution in pounds with water and manufacturer mounted equipment, front and rear
- Engine make, model, serial number, rated horsepower, rated speed and governed speed
- Type of fuels and fuel tank capacity

- Electrical system voltage and alternator output in amps.
- Battery make, model and total capacity in cold crank amps (CCA)
- Transmission make, model and serial number. If so equipped chassis transmission PTO(s) make, model and gear ratio
- Pump make, model, rated capacity in gallons per minute (liters per minute where applicable) and serial number
- Pump transmission make, model, serial number and gear ratio
- Auxiliary pump make, model, rated capacity in gallons per minute (liters per minute where applicable) and serial number
- Water tank certified capacity in gallons or liters
- Paint manufacturer and paint number(s)

Certification of slip resistance of all stepping, standing and walking surfaces.

If the apparatus has a fire pump or an industrial supply pump, the pump manufacturer's certification of suction capability.

If the apparatus has a fire pump or an industrial supply pump, a copy of the apparatus manufacturer's approval for stationary pumping applications.

If the apparatus has a fire pump or an industrial supply pump, the engine manufacturers certified brake horsepower curve for the engine furnished, showing the maximum governed speed.

If the apparatus has a fire pump or an industrial supply pump, the pump manufacturers certification of hydrostatic test (if applicable).

If the apparatus has a fire pump or an industrial supply pump, the Underwriters Laboratory certification of inspection and test for the fire pump (if applicable).

If the apparatus has an aerial device the Underwriters Laboratory certification of inspection and test for the aerial device.

If the apparatus has an aerial device, all the technical information required for inspections to comply with NFPA 1911, Standards for Testing Fire City Aerial Devices.

If the apparatus has a fixed line voltage power source, the certification of the test for the fixed power source (if applicable).

If the apparatus is equipped with an air system, test results of the air quality, the SCBA fill station, and the air system installation.

Weight documents from certified scale - showing actual loading on the front axle, rear axle(s) and overall vehicle (with the water tank full but without personnel, equipment and hose) will be supplied with the complete vehicle to determine compliance with NFPA-1901

Written load analysis and results of electrical performance tests.

If the apparatus is equipped with a water tank, the certification of water tank capacity by the tank manufacturer.

FAIR, ETHICAL AND LEGAL COMPETITION

In order to ensure fair, ethical, and legal competition, neither original equipment manufacturer (OEM) nor parent company of the OEM will have ever been fined or convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market.

ON-COLLUSIVE BIDDING CERTIFICATION

By submission of this bid, each person signing on behalf of any bidder, certifies, and in the case of a joint bid, each party thereof certifies as to its own organization, under penalty of perjury, that to the best of their knowledge and belief:

The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to sell prices with any other bidder or any competitor.

Unless otherwise required by law, the prices that have been quoted in this bid have not been knowingly disclosed by and will not knowingly be disclosed by prior to opening, directly or indirectly, to any other bidder or to any competitor

No attempt has been made to induce any other person, partnership, or corporation to submit or not to submit a bid for the purpose of restricting competition.

That all requirements of the law including amendatory provisions as to non-collusive bidding have been complied with.

INSPECTION VISITS

The bidder will provide two (2) factory inspection trips to facility. Transportation, meals, lodging, compensation, and other requisite expenses will be the bidder's responsibility.

Accommodation shall be for two (2) Fire representatives per trip.

The factory visits shall occur at the following stages of production of the apparatus:

- Pre-construction / blueprint review.

- Final inspection upon completion.

Travel arrangements more than 1000 miles from the manufacturing facility will be via commercial airline transportation.

The customer maintains the right to inspect the apparatus within normal business hours. At any other point during construction expenses incurred during non-specified inspection visits will be the responsibility of the customer.

During inspection visits, the customer reserves the right to conduct actual performance tests to evaluate completed portions of the unit. Testing will be accomplished with the assistance and resources of the contractor.

DELIVERY

Delivery of the apparatus to the Fire City will remain the responsibility of the Awarded Manufacturer or Distributor.

A qualified and responsible representative of the bidder will deliver the apparatus to the Town of Huachuca City at 4817 S. Apache Ave.

INSTRUCTION MANUALS/DRAWINGS, SCHEMATIC

The bidder will supply at time of delivery two (2) Digital copies of a complete operation and service manual covering the complete apparatus as delivered and accepted.

The manual will contain the following:

- Descriptions, specifications, and ratings of chassis, pump (if applicable), and aerial device.
- Wiring diagrams.
- Non-OEM Component location of electrical sensors/switches for servicing and repair.
- Lubrication charts.
- Operating instructions for the chassis, any major components such as a pump and any auxiliary systems.
- Instructions regarding the frequency and procedures recommended for maintenance.
- Parts replacement information.

VEHICLE FLUIDS PLATE

As required by NFPA-1901, a permanent plate in the driver's compartment specifying the quantity and type of the following fluids used in the vehicle:

A permanent plate in the driving compartment will specify the quantity and type of the following fluids used in the vehicle:

- Engine oil
- Engine coolant
- Chassis transmission fluid
- Pump transmission lubrication fluid
- Pump primer fluid
- Drive axle(s) lubrication fluid

- Air-conditioning refrigerant
- Air-conditioning lubrication oil
- Power steering fluid
- Cab tilt mechanism
- Transfer case fluid
- Equipment rack fluid
- Air compressor system lubricant
- Generator system lubricant
- Aerial systems

QUALITY MANAGEMENT

The International Organization for Standardization (ISO) is a worldwide federation of national standards bodies from 130 countries. Its ISO 9001 standard is a quality assurance model made up of 20 sets of quality system requirements. This model applies to organizations that design, develop, produce, install, and service products. Certification in ISO 9001 is a requirement.

AMP DRAW REPORT

The bidder shall provide, with their bid proposal and at the time of delivery, an itemized print out of the expected amp draw of the entire vehicle's electrical system.

A written load analysis, which shall include the following:

- The rating of the alternator.
- The minimum continuous load of each component that is specified per: Applicable NFPA-1901.
- Additional loads that, when added to the minimum continuous load, determine the total connected load.
- Each individual intermittent load.

All of the above listed items shall be provided by the bidder per the applicable NFPA-1901.

CAB SAFETY SIGNS

The following safety signs shall be provided in the cab:

- A label displaying the maximum number of personnel the vehicle is designed to carry shall be visible to the driver.

- “Occupants will be seated and belted when apparatus is in motion” signs shall be visible from each seat.
- “Do Not Move Apparatus When Light Is On” sign adjacent to the warning light indicating a hazard if the apparatus is moved (as described in subsequent section).
- A label displaying the height, length, and GVWR of the vehicle shall be visible to the driver.
- This label shall indicate that the fire City will revise the dimensions if vehicle height changes while vehicle is in service.

CHASSIS DATA LABELS

The following information shall be on labels affixed to the vehicle:

Fluid Data

- Engine Oil
- Engine Coolant
- Chassis Transmission Fluid
- Pump Transmission Lubrication Fluid
- Pump Primer Fluid (if applicable)
- Drive Axle(s) Lubrication Fluid
- Air Conditioning Refrigerant
- Air Conditioning Lubrication Oil
- Power Steering Fluid
- Cab Tilt Mechanism Fluid
- Transfer Case Fluid (if applicable)
- Equipment Rack Fluid (if applicable)

- Air Compressor System Lubricant
- Generator System Lubricant (if applicable)
- Front Tire Cold Pressure
- Rear Tire Cold Pressure
- Aerial Hydraulic Fluid (if applicable)

- Maximum Tire Speed Rating

Chassis Data

- Chassis Manufacturer
- Production Number
- Year Built
- Month Manufactured
- Vehicle Identification Number

Manufacturers weight certification:

- Gross Vehicle (or Combination) Weight Rating (GVWR or GCWR)
- Gross Axle Weight Rating, Front
- Gross Axle Weight Rating, Rear

ANGLE OF APPROACH

The angle of approach for the apparatus shall not be less than eight (8) degrees as specified by the current edition of NFPA 1901.

ANGLE OF DEPARTURE

The angle of departure for the apparatus shall not be less than eight (8) degrees as specified by the current edition of NFPA 1901.

NFPA SPECIAL SERVICE EQUIPMENT ALLOWANCE

In compliance with NFPA #1901 standards, the apparatus shall be engineered to provide an allowance of 500 pounds of fire City provided loose equipment.

FINANCIAL STABILITY SPECIFICATIONS

Ensuring the financial stability of the proposed body builder is a paramount consideration to this City. Financial strength directly relates to the body builder's ability to successfully produce an apparatus without jeopardizing fire City funds. In addition, financial strength is vital to this City to ensure a body builder will be able to provide warranty service along with replacement parts and service for the life of the apparatus. Failure to be able to provide these lifelong services may

cause future increases in maintenance expenses and create undue burden on the City's budget and tax base. This is a situation that this City is unwilling to risk. The body builder, therefore, shall meet certain minimum financial ratios in order to qualify for a bid award. The financial ratios presented shall be that of the consolidated entity; not the consolidated entity's parent company; for the body builder.

The financial ratios required to be met shall be derived from the most recent audited financial statements of the body builder proposed. **NO EXCEPTIONS**.

ANY EXCEPTION taken to this requirement shall immediately render the bid non-responsive and the bidder dismissed from further consideration. Under no circumstance shall a bid be considered where the bidder submits a letter of explanation taking exception to this requirement in lieu of providing the required documentation, nor shall consideration be given to bidders that refuse to submit the required information on the basis that the body builder proposed is a private company. **NO EXCEPTIONS.**

The three (3) critical financial indicators to be met are as follows:

Debt-to-Equity Ratio: The debt-to-equity ratio of the entity must not exceed a 2.0 rating. A debt-to-equity ratio is defined as that of total liabilities divided by total owner's equity. In layman's terms, a low debt-to-equity ratio means the company itself owns a greater share of its assets, as opposed to banks, creditors and other financial institutions. Conversely, companies with high debt-to-equity ratios are those that are generally financing their growth by carrying additional debt. The cost of this debt-financing may outweigh the return that the company generates on the debt through business activities and become too much for the company to manage. This can lead to bankruptcy, which is of grave concern to this purchaser.

Debt Coverage Ratio: The debt coverage ratio of the entity must exceed a 100.0 rating. A debt coverage ratio is defined as annual net income divided by the current portion of long-term debt. A high debt coverage ratio means the company can easily meet its payment obligations with its banks and other creditors. A low debt coverage ratio clearly infers the company may struggle to meet these obligations, which could ultimately delay or cancel production of apparatus.

Equity Ratio: The equity ratio of the body builder must exceed a .30 rating. An equity ratio is defined as total owners' equity divided by total assets. The equity ratio is another good indicator of the level of leverage (or financing) used by a company. The equity ratio measures the proportion of the total assets that are financed by owners and not creditors. A high equity ratio provides the company with flexibility in financing growth and other needs.

All financial indicators required by this section must be verified by Dun and Bradstreet, the nationally recognized, independent financial analysis company. Bids furnished without the required financial information shall render the bid non-responsive and the bidder dismissed from further consideration. **NO EXCEPTIONS.**

CENTER OF GRAVITY

The apparatus, prior to acceptance, will be required to meet the vehicle stability of the applicable NFPA Automotive Fire Apparatus Standard.

A calculated center of gravity shall be provided. The calculated or measured center of gravity (CG) shall be no higher than 80-percent of the rear axle track width.

ENGINEERING BLUEPRINTS

MANUFACTURER has submitted "proposal" blueprints which are “representative” of the vehicle being proposed and these have been generated on computer-aided-design (CAD) equipment. The blueprints submitted shall be on "B" size paper, 11" x 17" in size and views are on 1/16" to 1" scale.

The blueprints are provided as follows:

Sheet No. 1:	Left side exterior view
	Right side exterior view
	Rear exterior view

MANUFACTURER shall provide construction drawings for approval prior to actual construction of the vehicle.

The design of the equipment is in accordance with the best engineering practices. The equipment design and accessory installation shall permit accessibility for use, maintenance and service. All components and assemblies shall be free of hazardous protrusions, sharp edges, cracks or other elements, which might cause injury to personnel or equipment.

All oil, hydraulic, and air tubing lines and electrical wiring shall be located in protective positions properly attached to the frame or body structure and shall have protective loom or grommets at each point where they pass through structural members, except where a through-frame connector is necessary.

Parts and components will be located or positioned for rapid and simple inspection and recognition of excessive wear or potential failure. Whenever functional layout of operating components determines that physical or visual interference between items cannot be avoided, the item predicted to require the most maintenance shall be located for best accessibility.

CHANGE ORDERS

To ensure the proper engineering and construction of the purchaser's custom fire apparatus in a timely manner, the contractor shall consider the order final and complete after any changes made during the pre-construction conference are mutually approved. Change orders requested after the pre-construction conference are discouraged. It shall be understood and agreed that any changes, if approved, after the order has been released to Engineering, shall constitute a valid cause for production delay and without penalty to the contractor.

PRE-CONSTRUCTION CONFERENCE (AT MANUFACTURER)

A pre-construction conference for three (3) City personnel shall be conducted at the apparatus manufacturer's factory at which time all final designs and equipment mounting locations will be approved, prior to any sheet metal being cut. A factory employed design engineer shall be present during the pre-construction conference to answer any design, and/or engineering questions relating to the layout of the apparatus. Air travel (for distances over 250 miles), meals, and lodging expenses shall be included. BIDDER SHALL INDICATE INTENTION TO PROVIDE THE REQUIRED PRE-CONSTRUCTION CONFERENCE IN THE PROPOSAL PACKET.

INSPECTION TRIPS

A final inspection trip for two (2) Fire City personnel shall be made to the facility during the course of construction of the apparatus. Successful bidder shall consult with Fire City committee chairperson as to the proper timing of the inspection trip(s). Air travel (for distances over 250 miles), meals, and lodging expenses shall be included. BIDDER SHALL INDICATE INTENTION TO PROVIDE THE REQUIRED INSPECTION TRIP(S) IN THE PROPOSAL PACKET.

DELIVERY

Final delivery of the completed apparatus shall be made F.O.B. Fire City Headquarters.

BODY WARRANTY

We warrant each new motorized fire apparatus manufactured by the manufacturer for a period of ONE YEAR from the date of delivery, except for chassis and other components noted herein.

Under this warranty we agree to furnish any parts to replace those that have failed due to defective material or workmanship where there is no indication of abuse, neglect, unusual or other than normal service providing that such parts are, at the option of the manufacturer, made available for our inspection at our request, returned to our factory or other location designated by us with transportation prepaid within thirty days after the date of failure or within one year from the date of delivery of the apparatus to the original purchaser, whichever occurs first, and inspection indicates the failure was attributed to defective material or workmanship.

The warranty on the chassis and chassis supplied components, storage batteries, generators, electrical lamps and other devices subject to deterioration is limited to the warranty of the manufacturer thereof and adjustments for the same are to be made directly with the manufacturer by the customer.

This warranty will not apply to any fire apparatus that has been repaired or altered outside our factory in any way, which in our opinion might affect its stability or reliability.

This warranty shall not apply to those items that are usually considered normal maintenance and upkeep services: including, but not limited to, normal lubrication or proper adjustment of minor auxiliary pumps or reels.

This warranty is in lieu of all other warranties, expressed or implied, and all other obligations or liabilities on our part. We neither assume nor authorize any person to assume for us any liability in connection with the sales of our apparatus unless made in writing by the manufacturer.

ALUMINUM BODY WARRANTY - TEN YEAR

The manufacturer warrants to the original purchaser only, that the all-aluminum body, fabricated by the manufacturer, under normal use and with reasonable maintenance, be structurally sound and will remain free from corrosion perforation for a period of TEN (10) years.

This warranty does not apply to the following items that are covered by a separate warranty: paint finish, hardware, moldings, and other accessories attached to this body. In addition, this warranty does not apply to any part or accessory manufactured by others and attached to this body.

THEMANUFACTURER MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO THE ALUMINUM BODY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND HEREBY DISCLAIMED.

The manufacturer will replace without charge, repair or make a fair allowance for any defect in material or workmanship demonstrated to its satisfaction to have existed at the time of delivery or not due to misuse, negligence, or accident. If the manufacturer elects to repair this body, the extent of such repair shall be determined solely by the manufacturer, and shall be performed solely at the manufacturer factory, or at an approved facility. The expense of any transportation to or from such repair facility shall be borne by the purchaser and is not an item covered under this warranty.

The manufacturer will not be liable for damages and under no circumstances will its liability exceed the price for a defective body. The remedies set forth herein are exclusive and in substitution for all other remedies to which the purchaser would otherwise be entitled.

The manufacturer will be given a reasonable opportunity to investigate all claims. The purchaser must commence any action arising out of, based upon or relating to the agreement or the breach hereof, within twelve months from the date the cause of the action occurred.

Note: Surety bond, if required, will cover standard one year warranty period only and will not cover any extended warranties allowed by seller or other component manufacturers.

PRO RATED PAINT WARRANTY TEN YEAR

TERMS AND CONDITIONS

The manufacturer hereby warrants the paint on the body of each new fire & rescue vehicle to be free from blistering, peeling, corrosion or any other adhesion defect caused by defective manufacturing methods or paint material selection for a period of ten (10) years, starting on the date the vehicle is delivered to the original purchaser. Under this warranty, the manufacturer agrees to furnish any item or items to replace those that have been found to be defective in material or workmanship where there is no indication of abuse, neglect or other than normal service. Such an item or items, at the option of the manufacturer, must be made available for our inspection at our request and returned to our factory or another location designated by the manufacturer. Transportation of such an item or items will be arranged and covered by the buyer within thirty (30) days after the date of failure and with ten (10) years from the date of delivery of the apparatus to the original purchaser. The inspection must indicate that the failure was attributed to an adhesion defect caused by defective manufacturing methods or paint material selection. Authorization for repair must be sought from the manufacturer customer service City prior to repair occurring.

PRO-RATED WARRANTY COVERAGE

Color Retention & Cracking	Adhesion, Blistering & Bubbling	Corrosion, Dissimilar Metal
0-72 Months = 100%	0-36 Months = 100%	0-36 Months = 100%
73-96 Months = 50%	37-84 Months = 50%	37-48 Months = 50%
97-120 Months = 25%	85-120 Months = 25%	73-120 Months = 25%

THIS WARRANTY SHALL NOT APPLY TO OR COVER THE FOLLOWING:

- Any item that has been repaired, repainted or altered by a facility not approved in advance by the manufacturer.
- Special, incidental or consequential damages including, but not limited to, loss of time, inconvenience, loss of use, lost profits or transportation fees or charges to or from any facility.
- Any defect resulting from misuse, negligence, alteration, accident or lack of normal or required maintenance or adjustments, exposure to corrosive agents, fire, severe environmental conditions or acts of God.
- Painted items which are manufactured by a party other that the manufacturer and which are separately warranted by that party including cabs not manufactured or painted by Manufacturer.

EXCLUSIONS OF DAMAGES BOTH INCIDENTAL AND CONSEQUENTIAL

At no time shall the manufacturer be held liable for any incidental, consequential, indirect, special and/or punitive damages whatsoever, whether coming from breach of contract, warranty, tort or equity. Such items shall include the chassis or other items sold by the manufacturer, or their operation or their failure to operate, or defects herein or any undertakings, acts or omissions related to, regardless of whether the manufacturer's knowledge of the possibility of any such damage.

Without limitation of the generality of the preceding statements, the manufacturer categorically disclaims any and all liability for property and personal injury, damage, penalties for lost revenue and/or profit, loss of chassis or products and associated pieces of equipment, the expense of substituting chassis and/or products or the out of service expenses, resulting from damages and/or delays that creates down time expense and/or create economic losses, or any third party claims for damages.

This warranty in lieu of all other warranties, expressed or implied, and all other obligations or liabilities on our part. We neither assume nor authorize any person to assume for us any liability or make any alteration to this warranty in connection with the sale of our apparatus unless expressly given in writing by the manufacturer.

NOTE: Surety bond, if required, will cover the standard one year warranty period only and will not cover any extended warranties allowed by seller or other component manufacturers.

FIRE PUMP WARRANTY

EXPRESS WARRANTY: Hale Products, Incorporated ("Hale") hereby warrants to the original buyer that products manufactured by Hale are free of defects in material and workmanship for a period of five (5) years from the date the product is first placed into service or five and one-half (5-1/2) years from date of shipment by Hale, whichever period shall be first to expire. Within this warranty period Hale will cover parts and labor for the first two (2) years and parts only for years three (3) through five (5).

LIMITATIONS: HALE'S obligation is expressly conditioned on the Product being:

- Subjected to normal use and service.
- Properly installed and maintained in accordance with HALE'S Instruction Manual and Industry Standards as to recommended service and procedures.
- Not damaged due to abuse, misuse, negligence or accidental causes.
- Not altered, modified, serviced (non-routine) or repaired other than by an Authorized Service facility.
- Manufactured per design and specifications submitted by the original buyer.
- Used with an appropriate engine as determined by the engine manufacturers published data.
- Excluded are normal wear items identified as but not limited to packing, strainers, anodes, filters, light bulbs, intake screens, wear rings, mechanical seals, etc.

THE ABOVE EXPRESS LIMITED WARRANTY IS EXCLUSIVE. NO OTHER EXPRESS WARRANTIES ARE MADE. SPECIFICALLY EXCLUDED ARE ANY IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATIONS, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE; COURSE OF DEALING; USAGE OF TRADE; OR PATENT INFRINGEMENT FOR A PRODUCT MANUFACTURED TO ORIGINAL BUYER'S DESIGN AND SPECIFICATIONS.

EXCLUSIVE REMEDIES: If Buyer promptly notifies HALE upon discovery of any such defect (within the Warranty Period), the following terms shall apply:

- Any notice to HALE must be in writing, identifying the Product (or component) claimed defective and circumstances surrounding its failure.
- HALE reserves the right to physically inspect the Product and require Buyer to return same to HALE'S plant or Authorized service Facility.
- In such event, Buyer must notify HALE for a Return Goods Authorization number and Buyer must return the Product F.O.B. within (30) days thereof.
- If determined defective, HALE shall, at its option, repair or replace the Product, or refund the purchase price (less allowance for depreciation).
- HALE's reimbursement covers only the standard labor and Hale components required for the removal, repair, and/or re-installation of HALE supplied Product.
- HALE's reimbursement does not cover the standard labor or components for the removal and reinstallation of non-HALE supplied components.
- Absent proper notice within the Warranty Period, HALE shall have no further liability or obligation to Buyer there-fore.

THE REMEDIES PROVIDED ARE THE SOLE AND EXCLUSIVE REMEDIES AVAILABLE. IN NO EVENT SHALL HALE BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING, WITHOUT LIMITATION, LOSS OF LIFE; PERSONAL INUURY; DAMAGE TO REAL OR PERSONAL PROPERTY DUE TO WATER OR FIRE; TRADE OR OTHER COMMERICAL LOSSES ARISING, DIRECTLY OR INDIRECTLY OUT OF PRODUCT FAILURE.

STAINLESS STEEL PLUMBING WARRANTY

The manufacturer shall provide a ten (10) year warranty on the stainless-steel plumbing components and installation. The manufacturer shall supply details of their warranty information with their bid submission.

FOAM TANK WARRANTY

UNITED PLASTIC FABRICATION INC. Warrants each UPF POLY-TANK IIE Booster/Foam tank to be free from manufacturing defects in material and workmanship for the service life of the vehicle (vehicle must be actively used in fire suppression). The UPF POLY-TANK IIE must be installed in accordance with the United Plastic Fabricating installation manual. Every UPF POLY-TANK IIE is thoroughly inspected and tested for leaks before leaving our facility. Should any problems develop with your UPF POLY-TANK IIE booster/foam tank and will not meet performance criteria during the service life of the vehicle, notify UPF in writing or call our TOLL-FREE SERVICE HOT LINE 1-800-USA-POLY. Provide UPF with the serial number and a description of the problem. If the tank problem would render the truck out of service, UPF will dispatch a service technician WITHIN 48 HOURS (2 DAYS) to repair the tank. (This time period is for North America only). If the vehicle can remain in service, UPF will dispatch a service technician within a mutually agreed upon time period.

We will repair, or at our option, replace the tank with a new UPF POLY-Tank IIE. UPF will cover customary and reasonable costs to remove and install the UPF POLY-TANK IIE. This warranty will not cover tanks that have been improperly installed, misused or abused, and the serial number must not have, been altered, defaced or removed. UPF will not cover any unauthorized third party repairs or alterations. Any of these actions may void the warranty.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF. THERE IS NO EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. ADDITIONALLY, THIS WARRANTY IS IN LIEU OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF UNITED PLASTIC FABRICATION, INC.

This warranty contains the entire warranty. It is the sole warranty and price agreements or representation, whether oral or written, are either merged herein or expressly cancelled. UNITED PLASTIC FABRICATION, INC. Neither assumes, nor authorizes any person supposing to act on its behalf, to change, nor assume for it, any warranty or liability concerning its product.

IN NO EVENT WILL UNITED PLASTIC FABRICATION, INC BE LIABLE FOR AN AMOUNT IN EXCESS OF THE PRESENT RETAIL, PURCHASE PRICE PLUS INSTALLATION AND REMOVAL COST OF THE BOOSTER TANK, FOR ANY LOSS OR DAMAGE, WHETHER DIRECT OR INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR OTHERWISE ARISING OUT OF FAILURE OF ITS PRODUCT.

This warranty gives you specific legal rights, and you may have other rights, which vary from state to state. Some states do not allow exclusion or limitation of incidental of incidental or consequential damage, so the above limitation or exclusion may not apply to you. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

WATER TANK WARRANTY

UNITED PLASTIC FABRICATION INC. Warrants each UPF POLY-TANK IIE Booster/Foam tank to be free from manufacturing defects in material and workmanship for the service life of the vehicle (vehicle must be actively used in fire suppression). The UPF POLY-TANK IIE must be installed in accordance with the United Plastic Fabricating installation manual. Every UPF POLY-TANK IIE is thoroughly inspected and tested for leaks before leaving our facility. Should any problems develop with your UPF POLY-TANK IIE booster/foam tank and not meet performance criteria during the service life of the vehicle, notify UPF in writing or call our TOLL FREE SERVICE HOT LINE 1-800-USA-POLY. Provide UPF with the serial number and a description of the problem. If the tank problem would render the truck out of service, UPF will dispatch a service technician WITHIN 48 HOURS (2 DAYS) to repair the tank. (This time period is for North America only). If the vehicle can remain in service, UPF will dispatch a service technician within a mutually agreed upon time period.

We will repair, or at our option, replace the tank with a new UPF POLY-Tank IIE. UPF will cover customary and reasonable costs to remove and install the UPF POLY-TANK IIE. This warranty will not cover tanks that have been improperly installed, misused or abused, and the serial number must not have been altered, defaced or removed. UPF will not cover any unauthorized third-party repairs or alterations. Any of these actions may void the warranty.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF. THERE IS NO EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. ADDITIONALLY, THIS WARRANTY IS IN LIEU OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF UNITED PLASTIC FABRICATION, INC.

This warranty contains the entire warranty. It is the sole warranty and price agreements or representation, whether oral or written, are either merged herein or expressly cancelled. UNITED PLASTIC FABRICATION, INC. Neither assumes, nor authorizes any person supposing to act on its behalf, to change, nor assume for it, any warranty or liability concerning its product.

IN NO EVENT WILL UNITED PLASTIC FABRICATION, INC BE LIABLE FOR AN AMOUNT IN EXCESS OF THE PRESENT RETAIL, PURCHASE PRICE PLUS INSTALLATION AND REMOVAL COST OF THE BOOSTER TANK, FOR ANY LOSS OR DAMAGE, WHETHER DIRECT OR INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR OTHERWISE ARISING OUT OF FAILURE OF ITS PRODUCT.

This warranty gives you specific legal rights, and you may have other rights, which vary from state to state. Some states do not allow exclusion or limitation of incidental of incidental or consequential damage, so the above limitation or exclusion may not apply to you. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

COMPLETE PRINTED MANUAL

The MANUFACTURER shall provide with the vehicle upon delivery, one (1) complete delivery manual. This manual shall be in a notebook type binder, with reference tabs for each section of the vehicle. A companion digital copy with all of the printed material in an electronic format (Adobe Acrobat PDF) shall be provided.

Within each section shall be:

- Individual component manufacturer instruction and parts manuals
- Warranty forms for the body
- Warranty forms for all major components
- Warranty instructions and format to be used in compliance with warranty obligations
- Wiring diagrams
- Installation instruction and drawings for major parts

- Visual graphics and electronic photos for the installation of major parts
- Necessary normal routine service forms, publications and components of the body portion of the apparatus. This shall include the non-OEM electrical and vehicle specific components from the upfitting manufacturer.
- Technical publications for training and instruction on major body components
- Warning and safety related notices for personnel protection
- Cab and chassis manuals on parts, service and maintenance shall be provided

"ON-LINE" SERVICE MANUAL SUPPORT

As part of the standard delivery manual, the **MANUFACTURER** shall give a password-protected link to the end user, allowing access to the manufacturers' database on service parts. The internet-based system shall allow the end user to access the major component supplier's service parts listing such as Hale, Waterous, Akron, etc. This shall be accomplished with simplistic point and click features on the manufacturer line item within the "stripper" or "line-item sheet". This will include automatic updates, printable schematics and manufacturer's web links and is available in the commercially available format of Adobe Acrobat Reader to access these documents. The manufacturer shall submit, with the bid proposal, a sample set of online Adobe formatted material that has been printed from the manufacturer's website.

Parts Listings within Manuals

The manuals will include cross-reference part numbers from the **MANUFACTURER** part number to the vendor parts. Example: **MANUFACTURER** Hydraulic Ladder Rack, Part #LR-MN-0002 cross-referenced to Ziamatic Corporation Part 098-MN2345. This will allow for reference between individual parts and complete installation assemblies as completed by the body builder. The manuals will list all components of the vehicle that includes a vendor part utilized in a complete installation via the manufacturer's "line-item sheet" or "stripper" utilized to manufacture the completed vehicle. These are "As Built" and proposals with "typical" or "generic" manuals will be rejected.

Illustrative Schematics within Manuals

MANUFACTURER shall include installation diagrams and drawings of all major sub-assemblies. This will include components such as hydraulic ladder rack assemblies, pump panels, tanks, fire pumps, etc. The drawings shall be linked via an Internet based service program, in an electronic format from the manufacturer's "stripper" (line-item listing) of the manufacturing document. **MANUFACTURER** shall submit, upon request, a sample schematic.

Digital Images within Manuals

In addition to two and three-dimensional installation drawings, **MANUFACTURER** shall make accessible, via an internet-based link, the actual photos of the installed components listed within the "stripper" or line sheet. This will include, but not limited to wiring terminals, main body distribution strips, fire pump shifting, auxiliary components, etc. **MANUFACTURER** shall submit a sample of these upon request.

Installation Instructions within Manuals

MANUFACTURER "work instructions" or "installation instructions" shall be included with the service manuals. These documents shall be accessible via a web-based link to the individual vehicle manufactured. The work instructions shall give systematic instructions of the component installation process. **MANUFACTURER** shall submit, upon request, a sample set of instructions.

Automatic Updates of Manuals and Parts Listings

The online manuals will include automatic updates that are accessible via the web link. When clicking on the part within the manufacturer's stripper or line sheet, it will allow the end user to access the component manufacturer website for updated information. This will allow for latest parts and service components from the individual part manufacturer or vendor.

Electrical Schematics

To maintain the vehicles electrical systems, the manufacturer shall provide to the purchaser the instructional manuals, complete electrical information and schematics on the vehicle. The electrical information shall be provided as follows:

Wiring Systems 12 and 120 Volt:

- Graphic symbols for electrical diagrams.
- Wire labeling, imprinting codes and index.
- Computer generated electrical schematics indicating the circuit number, wire size, switches, circuit breaker and terminals on the vehicle.

MANUFACTURER shall submit, upon request, a sample set of diagrams.

FORD F-Series CHASSIS

A Ford F-Series chassis per the attached specifications shall be furnished:

LOW VOLTAGE ELECTRICAL SYSTEM SPECIFICATIONS

The electrical system shall include all panels, electrical components, switches and relays, wiring harnesses and other electrical components. The electrical equipment installed by the apparatus manufacturer shall conform to current automotive electrical system standards, the latest Federal DOT standards, and the requirements of the applicable NFPA standards.

All wiring shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for the protected circuit. Voltage drops in all wiring from the power source to the device shall not exceed 10 percent. The wiring and wiring harness and insulation shall be in

conformance to applicable SAE and NFPA standards. The wiring harness shall conform to SAE J-1128 with GXL temperature properties. All exposed wiring shall be protected in a loom with a minimum 289-degree Fahrenheit rating. All wiring looms shall be properly supported and attached to body members. The electrical conductors shall be constructed in accordance with applicable SAE standards, except when good engineering practice requires special construction.

The wiring connections and terminations shall use a method that provides a positive mechanical and electrical connection and shall be installed in accordance with the device manufacturer's instructions. Electrical connections shall be with mechanical type fasteners and large rubber grommets where wiring passes through metal panels.

The wiring between the cab and body shall be joined using Deutsche type connectors or an enclosed in a terminal junction panel area. This system will permit body removal with minimal impact on the apparatus electrical system. All connections shall be crimp-type with insulated shanks to resist moisture and foreign debris such as grease and road grime. Weather-resistant connectors shall be provided throughout to ensure the integrity of the electrical system.

Any electrical junction or terminal boxes shall be weather resistant and located away from water spray conditions. In addition, the main body junction panel shall house the automatic reset breakers and relays where required.

There shall be no exposed electrical cabling, harnesses, or terminal connections located in compartments, unless they are enclosed in a junction box or covered with a removable electrical panel. The wiring shall be secured in place and protected against heat, liquid contaminants and damage. Wiring shall be uniquely identified every three-inches (3") by color coding or permanent marking with a circuit function code and identified on a reference chart or electrical wiring schematic per requirements of applicable NFPA #1901 standards.

The electrical circuits shall be provided with low voltage overcurrent protective devices. Such devices shall be accessible and located in required terminal connection locations or weather resistant enclosures. The overcurrent protection shall be suitable for electrical equipment and shall be automatic reset type and meet SAE standards. All electrical equipment, switches, relays, terminals, and connectors shall have a direct current rating of 125 percent of maximum current for which the circuit is protected. The system shall have electro-magnetic interference suppression provided as required in applicable SAE standards.

The electrical system shall include the following:

- Electrical terminals in weather exposed areas shall have a non-conductive grease or spray applied. A corrosion preventative compound shall be applicable to all terminal plugs located outside of the cab or body.
- The electrical wiring shall be harnessed or be placed in a protective loom.
- Holes made in the roof shall be caulked with silicone. Large fender washers 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 will not allow moisture to accumulate in it.
- A coil of wire must be provided behind an electrical appliance to allow them to be pulled away from mounting area for inspection and service work.
- All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.

The warning lights shall be switched on in the chassis cab with labeled switches in an accessible location. Individual rocker switches shall be provided only for warning lights provided over the minimum level of warning lights in either the stationary or moving modes. All electrical equipment switches shall be mounted on a switch panel mounted in the cab convenient to the operator. The warning light switches shall be of the rocker type. For easy nighttime operation, an integral indicator light shall be provided to indicate when the circuit is energized. All switches shall be appropriately identified as to their function.

A single warning light switch shall activate all required warning lights. This switch will allow the vehicle to respond to an emergency and "call for the right of way". When the parking brake is applied, a "blocking right of way" system shall automatically activate per requirements of the applicable NFPA standards. All "clear" warning lights shall be automatically turned off upon application of the parking brake.

NFPA REQUIRED TESTING OF ELECTRICAL SYSTEM

The apparatus shall be electrically tested upon completion of the vehicle and prior to delivery. The electrical testing, certifications, and test results shall be submitted with delivery documentation per requirements of the applicable NFPA standards. The following minimum testing shall be completed by the apparatus manufacturer:

1. Reserve capacity test:

The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged. The engine shall be shut off and the minimum continuous electrical load shall be activated for ten (10) minutes. All electrical loads shall be turned off prior to attempting to restart the engine. The battery system shall then be capable of restarting the engine. Failure to restart the engine shall be considered a failed test.

2. Alternator performance test at idle:

The minimum continuous electrical load shall be activated with the engine running at idle speed. The engine temperature shall be stabilized at normal operating temperature. The battery system shall be tested to detect the presence of battery discharge current. The detection of battery discharge current shall be considered a test failure.

3. Alternator performance test at full load:

The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed. The test duration shall be a minimum of two (2) hours. Activation of the load management system is permitted during this test. However, if an alarm sounds due to excessive battery discharge, as detected by the system requirements in the NFPA standards, or a system voltage of less than 11.7 volts dc for more than 120 seconds is present, the test has failed.

4. Low voltage alarm test:

Following the completion of the above tests, the engine shall be shut off. The total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates. The battery voltage shall be measured at the battery terminals. With the load still applied, a reading of less than 11.7 volts dc for a 12-volt system shall be considered a test failure. The battery system shall then be able to restart the engine. Failure to restart the engine shall be considered a test failure.

NFPA REQUIRED DOCUMENTATION

The following documentation shall be provided on delivery of the apparatus:

a. Documentation of the electrical system performance tests required above.

b. A written load analysis, including:

1. The nameplate rating of the alternator.

2. The alternator rating under the conditions.

3. Each specified component load.

4. Individual intermittent loads.

LOAD MANAGER 2

The apparatus shall be equipped with a Kussmaul model 091-79 Automatic Load Shedding System for performing continuous electrical load management. The Load Manager shall have the following features:

- Monitor 12-volt system and detect low voltage.
- Capability to control two (2) loads.
- Automatic reset when voltage rises.
- Adjustable voltage setpoint.

The load manager shall be protected against reverse polarity and shorted outputs and be enclosed in an enclosure to enhance EMI/RFI protection. The manufacturer shall provide for all electrical loads in excess of the NFPA minimum electrical requirements that exceed the alternator output.

ELECTRICAL CONSOLE WITH EMERGENCY LIGHT SWITCH PANEL – THERMAL COATED

An electrical console shall be constructed of .125" black LineX coated smooth aluminum material and mounted in the cab of the truck chassis. A console shall be designed and installed between the driver and passenger seats. The top face of the console shall be designed as the switch panel for all emergency light switches. The switch panel shall be hinged for easy access to the switch connections.

All emergency light switches shall be lighted, rocker style. Switches shall be internally lit when the switch circuit is in the on position. A plug-in identification label is to be provided and installed adjacent to each rocker switch with backlighting provided behind the label.

SWITCHES

A rocker style internally lighted switch shall be provided and wired through a heavy-duty relay to activate power to the emergency lights. The emergency lights shall be activated by a single "MASTER SWITCH" on the electrical console.

CLIPBOARD STORAGE

A storage area at the rear of the console shall be provided for the storage of clipboards.

CONSOLE EQUIPMENT REQUIREMENTS

Provide and install the following equipment in the center console following equipment:
(2) mobile radios APX 8500 all band enabled and KNG-150
-Wiring and antennae mounting shell be provided and installed in the vehicle.
(4) drop-in Bendix King handheld radio chargers
(2) cigarette style outlets
(4) USB A and C style outlets
Install antennas for cradle point. Equipment will be provided by Town of Huachuca City

BATTERY SYSTEM

The battery system shall be supplied with the chassis.

MASTER ELECTRIC SWITCH

One (1) “inpower” automatic master battery disconnect switch shall be located in the center console of the apparatus. The switch shall disconnect the 12 volt power supply from the battery system.

BATTERY CHARGER

*One (1) Kussmaul Autocharge model #*091-266-12-40 *- 15 amp automatic battery charger shall be wired to the 12 volt battery system. The charger unit shall be mounted in a clean dry area and will be accessible for service and/or maintenance.*

BATTERY CHARGER DISPLAY

One (1) Kussmaul 091-55-266-XXX voltage display shall be supplied with the charger.

red trim ring

AUTO-EJECT

A Kussmaul "Super Auto-Eject" 20-amp automatic disconnect device shall be provided and installed on the 110 volt shoreline connection complete with weatherproof cover and matching plug. The Auto-Eject shall be activated by the chassis starter switch to disconnect the plug. The Super Auto-Eject shall be completely sealed to prevent contamination of the mechanism by inclement weather and road conditions. The Super Auto-Eject shall have an internal switch to open and close the AC circuit after the mating connector is inserted and before the connector is removed.

red cover

SHORE POWER PLUG

The shore power plug shall be located at the left front of the forward portion of the body.

12 VOLT POWER SOURCE

One (1) 12 volt power and ground connection rated at 20 amps shall be provided on the apparatus for the installation of a mobile two-way radio.

The power source shall be run through the chassis master battery switch and shall be deactivated when the key is in the "OFF" position.

12 VOLT USB POWER SOURCE

Four (4) 12-volt dual USB power outlet with 5 volt 2.1 amp output shall be provided in the center cab console.

The power source shall be "constant hot" and remain active regardless of the position of the master battery switch.

12 VOLT POWER SOURCE

Two (2) 12 volt cigarette lighter style power connection rated at 15 amps shall be provided in the center console of the chassis.

The power source shall be "constant hot" and remain active regardless of the position of the master battery switch.

ENGINE COMPARTMENT LIGHT

One (2) 12-volt LED lights with switch shall be mounted in the engine enclosure.

The control switch shall be mounted on the light head.

PUMP ENCLOSURE LIGHTS

One (2) LED work lights shall be provided in the pump enclosure.

The control switch shall be mounted on the light head.

LIGHT MOUNTING LOCATION

The mounting location for the specified light shall be on the brow of the chassis.

LED ROOF MOUNT FLOODLIGHT

Fire Research Evolution II LED model FCA800-V20 contour roof mount light shall be installed. The mounting brackets shall attach to the bottom of the lamphead and be machined to conform to the roof radius. Wiring shall extend from a weatherproof strain relief at the rear of the lamphead.

The lamphead shall have eight (8) ultra-bright white LEDs. It shall operate at 12/24 volts DC, draw 13/6.5 amps, and generate 20,000 lumens. The lamphead shall direct 50 percent of the light onto the action area while providing 50 percent to illuminate the working area. The lamphead shall incorporate heat-dissipating fins and be no more than 4" high by 11 1/2" wide. The lamphead and mounting arm shall be powder coated white. The floodlight shall be for fire service use.

LIGHT SWITCH REMOTE LOCATION

Light switch shall utilize the upfitter switches inside the cab to turn the light on and off.

BACK-UP ALARM

One (1) automatic electric back-up alarm shall be wired to the back-up light circuit and mounted under the rear of the apparatus body.

HAND LIGHTS

All NFPA required portable hand lights supplied by the builder and must be installed before the apparatus is placed into service.

MARKER LIGHTS

LED marker lights shall be installed on the vehicle in conformance to the Department of Transportation requirements.

LICENSE PLATE BRACKET

One (1) stainless steel license plate bracket shall be provided at the rear of the apparatus. The bracket shall have a LED light.

TAIL LIGHTS

One (1) pair of Whelen, , LED tail/brake/turn/backup lights shall be provided. The 9x7 light shall incorporate all three brake, turn and backup lights in one light. The red, white and amber lightheads use the Torus LED technology.

CAB GROUND LIGHTS

Four () LED ground lights shall be installed on the chassis cab, one under each cab door

MID BODY GROUND LIGHTS

Two (2) LED ground lights shall be installed under the mid-body of the apparatus. One (1) light shall be located on the driver's side and one (1) light located on the officer's side of the apparatus.

REAR STEP GROUND LIGHTS

Two (2) LED ground lights shall be installed under rear step of the apparatus.

REAR BODY GROUND LIGHTS

Two (2) LED ground lights shall be installed under the compartments located behind the rear wheels. One (1) light shall be located on the driver's side and one (1) light located on the officer's side of the apparatus.

The ground lights shall automatically activate when the parking brake is applied.

REAR TAILBOARD LIGHTS

Two (2) LED step lights with clear lens shall be installed to illuminate the step surfaces at the rear of the apparatus body.

The step/walkway light switch shall be installed and wired to the parking brake.

SCENE LIGHT

Two (2) Whelen 900 surface mount light shall be installed. The light shall be mounted with four (4) screws to a flat surface. It shall be 6 3/4" high by 9" wide and have a profile of less than 1 3/4" beyond the mounting surface. Wiring shall extend from a weatherproof strain relief at the rear of the light.

SCENE LIGHT LOCATION

One (1) scene light shall be located on the rear of the apparatus body.

SCENE LIGHT SWITCHING

One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the rear scene light(s). The switch shall be labeled "REAR SCENE".

LED SCENE LIGHT

Fire Research CrestLight™ LED Scene Light model CLA100-A49 with mounting bracket shall be provided. The lamphead shall be mounted using either M6 or ¼" fasteners (not supplied). The mounting holes shall be 51 5/8" apart. The wiring shall extend from the rear of the lamphead and shall be a 32" long cable (3/8" OD) with 14 AWG wires.

The lamphead shall have (45) forty-five ultra-bright white LEDs to provide a low beam/narrow flood/low beam light pattern. It shall operate at 12V/24V volts DC and generate 12,500 lumens of light. Power consumption shall be 165 Watts. The lamphead shall have (5) five amber marker lights. The lamphead shall include both a set of low beam lenses and a set of narrow flood reflectors. The low beam shall lower the beam pattern below the horizontal, and the narrow flood beam shall project the beam straight ahead. The lamphead shall have the ability to independently control either the marker lights, the narrow flood or low beam. The lamphead shall weigh 9.75 pounds (with mounting bracket) and be powder coated in white. The lamphead shall measure 3" high with mounting bracket (1 13/16" high without mounting bracket), 52 ½" wide with mounting bracket and 3 5/16" deep. The waterproof rating shall be IPX7. The LED scene light shall be for fire service use applications.

Install one each side on top of upper side body compartments

SCENE LIGHT LOCATION

One (1) scene light shall be located on the left side of the apparatus body.

SCENE LIGHT LOCATION

One (1) scene light shall be located on the right side of the apparatus body.

SCENE LIGHT SWITCHING

Scene lights will be tied to the OEM upfitter switches for on and off operation.

SCENE LIGHT SWITCHING

Scene lights will be tied to the OEM upfitter switches for on and off operation.

DOOR OPEN/HAZARD WARNING LIGHT

One (1) red flashing, warning light shall be provided and installed in the driver's compartment to indicate an open passenger or apparatus compartment door. The warning light shall also be attached to folding equipment racks and light towers as specified. The light shall be a flashing rectangular incandescent marker light with a red lens and shall be properly marked and identified.

ELECTRIC SIREN AND CONTROL

One (1) Whelen model #295SLSA1 electronic siren shall be mounted in the cab. This unit shall feature an electronic air horn, wail, yelp, hi-lo and shall have a hard-wired PA microphone.

SPEAKER

One (2) Whelen 100-watt speakers,

SPEAKER

two (2) stainless steel grilles shall be installed on the speaker.

SPEAKER LOCATION

The siren speaker shall be installed on the apparatus bumper extension, as determined by the body manufacturer.

LIGHTBAR

One (1) Whelen Legacy 54" DUO light bar shall be included with the apparatus cab. The light bar shall be mounted on the roof of the cab, towards the front, above the windshield. Lowest possible height

LIGHTBAR ACTIVATION

The front upper light bar shall be activated through the master warning switch.

UPPER REAR WARNING LIGHTS

One (1) pair of Whelen M9 warning lights shall be installed, one each side on the upper rear of the apparatus body The dimensions of the lights shall be 7" x 9". Whelen M9

The driver side warning light shall be a Whelen blue-LED's with clear lens. Whelen M 9

The officer side warning light shall be a Whelen red-LED's with clear lens. Whelen M 9

Each light shall be mounted with a M9 chrome flange.

UPPER SIDE REAR WARNING LIGHTS

One (1) pair of Whelen warning lights shall be installed, one each side on the upper portion of the body side, towards the rear of the body. The dimensions of the lights shall be 7" x 9".
54-15-1470 Whelen M9
The scene light shall be installed on an aluminum mounting plate, painted to match the body.

The driver side warning light shall be a Whelen M9 red-LED's with clear lens.

The officer side warning light shall be a Whelen blue-LED's with clear lens.

Each light shall be mounted with a chrome flange.

LOWER FRONT WARNING LIGHTS

One (1) pair of Whelen ION duo surface mount lights shall be installed, one each side on the front of the chassis cab. The dimensions of the lights shall be 3" x 7".

The driver side warning light shall be a Whelen ION red-LED's with clear lens.

The officer side warning light shall be a Whelen ION blue-LED's with clear lens.

Each light shall be mounted with a chrome flange.

INTERSECTION WARNING LIGHTS

One (1) pair of Whelen M6 lights shall be installed, one each side of the chassis cab. The dimensions of the lights shall be 3" x 7".

The driver side warning light shall be a Whelen M6 blue/red-LED's with clear lens.

The officer side warning light shall be Whelen M6 red/blue-LED's with clear lens.

Each light shall be mounted with a chrome flange.

LOWER MID-BODY WARNING LIGHTS

One (1) pair of Whelen M6 LED warning lights shall be installed, one each side of the apparatus, mid-body. The dimensions of the lights shall be 6.7" x 4.3".

The driver side warning light shall be a Whelen M6 red/blue-LED's with clear lens. The dimensions of the lights shall be 6.7" x 4.3".

The officer side warning light shall be a Whelen blue/red-LED's with clear lens. The dimensions of the lights shall be 6.7" x 4.3".

There shall be chrome bezels supplied and installed on the warning lights.

LOWER REAR SIDE WARNING LIGHTS

One (1) pair of Code 3 LED warning lights shall be installed, one each side of the apparatus body, towards the rear of the body. The dimensions of the lights shall be 2" x 5".

The driver side warning light shall be a Whelen M2 located in the rub rail LED's with clear lens red and blue. The dimensions of the lights shall be 3.7” x 2’’

‘

The officer side warning light shall be a Whelen M2 with clear lens red and blue. The dimensions of the light shall be 3.2”x2”

There shall be chrome bezels supplied and installed on the warning lights.

LOWER REAR WARNING LIGHTS

One (1) pair of Whelen PSJA3FCR Mega T LED warning lights shall be installed, one each side on the lower rear of the apparatus body. The dimensions of the lights shall be 11x.5" red blue white located on rear low as possible

The driver side warning light shall be a Whelen PSJA3FCR Mega T red/blue/white -LED's with clear lens. The dimensions of the lights shall be 2" x 5".

The officer side warning light shall be a Whelen PSJA3FCR Mega T red/blue/whiteLED's with clear lens. The dimensions of the lights shall be 2" x 5".

There shall be chrome bezels supplied and installed on the warning lights.

TRAFFIC ARROW LIGHT

One (1) Whelen Model #TAL65 Traffic Advisor shall be installed. The light shall be equipped with six (6) LED lights measuring 36" in length. The unit shall be mounted at the rear of the apparatus body. The Traffic Advisor control head shall be mounted inside the cab and be accessible by the driver and officer.

The traffic arrow light shall be surface mounted at the rear of the apparatus body.
Controller tac 7

BUMPER - AFTERMARKET REPLACEMENT

A Road Armor 61740B front bumper painted chassis color shall be provided and installed the bumper shall have four (4) white LED lights built into the bumper. *** To be supplied and installed by the purchaser.***

FLUID DATA PLAQUE

One (1) fluid data plaque containing required information shall be provided based on the applicable components for this apparatus, compliant with NFPA Standards:

- Chassis Engine oil
- Chassis Engine coolant
- Chassis transmission fluid
- Drive axle lubricant
- Power steering fluid
- Pump transmission lubrication fluid
- Pump Engine oil
- Pump Engine Coolant
- Lubrication grease type
- Other NFPA applicable fluid levels or data as required

Location shall be in the driver's compartment or on driver's door.

DATA & WARNING LABELS

HEIGHT LENGTH & WEIGHT

A highly visible label indicating the overall height, length, and weight of the vehicle shall be installed in the cab dash area.
NO RIDE LABEL

One (1) "NO RIDERS" label shall be applied on the vehicle at the rear step area or other applicable areas. The label shall warn personnel that riding in or on these areas, while the vehicle is in motion is prohibited.
CAB SEATING POSITION LIMITS

One (1) label shall be installed in the cab to indicate seating positions for firefighters. A weight allowance of 250 pounds for each shall be factored into the gross vehicle weight rating of the chassis.

HELMET WARNING TAG

One (1) label shall be installed in the cab, visible from each seating position. The label shall read "CAUTION: DO NOT WEAR HELMET WHILE SEATED." Helmets must be properly stowed while the vehicle is in motion according to the current edition of NFPA 1901.

REAR TOW HITCH PROVISIONS

There shall be a Class V Hitch provided and installed to the factory frame. A recovery receiver shall be provided and with a recovery ring.

The tow hitch shall be painted black.

HUB AND LUG NUT COVERS

The apparatus shall have chrome or stainless-steel hub and lug nut covers on the front and single rear axles.

TIRE PRESSURE INDICATOR, p/n RWTG1235

There shall be a tire pressure indicator, p/n RWTG1235, at each tire’s valve stem on the vehicle that shall indicate if there is insufficient pressure in the specific tire.

EXHAUST HEAT SHIELD

A heat shield shall be installed under the body in the areas where the exhaust system is routed.

REAR MUD FLAPS

One (1) pair of black mud flaps shall be installed behind the rear wheels.

NERF BARS

There shall be a set of "Nerf" bars furnished on each side of the four-door commercial chassis that extend from behind the front wheel to the rear of the four-door cab. The running boards shall have a chrome finish and a slip resistant overlay material installed on each step surface.

AUXILIARY FIRE PUMP SPECIFICATIONS

A Hale HPX300-KBD24 fire pump furnished and mounted on the apparatus to meet the following performance criteria:

420 GPM @ 50 PSI
150 GPM @ 100 PSI

The pump shall include the following components:

- Self-Adjusting Mechanical Pump Seal
- Bronze Alloy Impeller with Double seal ring design to eliminate end thrust
- Renewable double-labyrinth type, solid Bronze Impeller Seal Ring
- Precision-ground Stainless Steel Pump Shaft splined for broached impeller hubs. The pump shall have hard ceramic coating under the packing glands to reduce friction
- Deep Groove Radial-Type Ball Bearings for pump shaft
- High-strength aluminum alloy pump casing with bronze fittings
- Aluminum alloy transmission cast with precision spur cut gears from heat-treated alloy steel
- Dependable splash-type lubrication system
- 24.8 HP Kubota diesel powered engine
- Adjustable mechanical type governor and throttle control lever
- 12-volt electric start
- Automatic compression release
- 40 Amp alternator
- hand pump primer

PUMP ANODES

There shall be sacrificial, zinc anodes in the pump steamer ports which shall protect the pump and piping from electrolysis. These anodes shall also act as screens.

PUMP PLUMBING SYSTEM

The fire pump plumbing system shall be of rigid stainless-steel pipe or flexible piping with stainless steel fittings. Mechanical grooved couplings shall be installed to permit flexing of the plumbing system and allow for quick removal of piping or valves for service. Flexible hose couplings shall be threaded stainless steel or mechanical grooved coupling connections.

The fire pump and plumbing shall be hydrostatically tested in compliance to applicable sections of NFPA standards. The test results shall be included in the delivery documentation.

FIRE PUMP MASTER DRAIN

The fire pump plumbing system and fire pump shall be piped to a single 1/4 turn lift type master pump drain assembly.

ADDITIONAL LOW POINT DRAINS

The plumbing system shall be equipped with additional low point manually operated drain valves to allow total draining of the fire pump plumbing system. These valves shall be accessible from the side of the vehicle and labeled.

STAINLESS STEEL INTAKE MANIFOLD

The suction manifold assembly shall be fabricated with Schedule #10 type 304 stainless steel. All threaded fittings shall be a minimum of Schedule 10 stainless steel. The suction manifold assembly shall have radiused sweep elbows to minimize water turbulence into the suction volute. The suction manifold shall be welded, and pressure tested prior to installation. The stainless-steel manifold assembly shall be attached to the pump intake volute with a heavy-duty, flexible Victaulic coupling.

The stainless-steel manifold assembly shall have a ten (10) year warranty.

STAINLESS STEEL DISCHARGE MANIFOLD

The discharge manifold assembly shall be fabricated with minimum of Schedule #10 Type 304 stainless steel. All threaded fittings shall be a minimum of Schedule #40 stainless steel. The discharge manifold assembly shall have radiused sweep elbows to minimize water turbulence. The manifold shall be welded and pressure tested prior to installation. The stainless-steel manifold inlet shall be attached to the pump discharge and have additional brackets as required to support the discharge manifold, valves and related components.

The stainless-steel manifold assembly shall have a ten (10) year warranty.

FIRE PUMP & PLUMBING SYSTEM PAINTING

The fire pump and plumbing system shall be painted by the fire apparatus manufacturer. The fire pump and the plumbing shall be painted metallic silver.

HOSE THREADS

The hose threads shall be National Standard Thread (NST) on all base threads on the apparatus intakes and discharges.

MUFFLER & EXHAUST

The auxiliary fire pump and engine assembly shall have a muffler and exhaust pipe. The exhaust pipe shall be directed out of the compartment and away from the pump operator. Additional guards shall be installed where the pipe is exposed to touch by an operator.

Exhaust to be plumbed to under the truck into main truck exhaust

HAND PUMP PRIMER ASSEMBLY

There shall be a hand primer assembly plumbed into the pump volute. The hand pump primer assembly shall be located to allow the primer to be operated with the pump mounted below the pump plumbing near the intake.

FUEL SYSTEM

The fuel system for the auxiliary fire pump shall be plumbed to the chassis fuel system. There shall be a separate fuel pickup tube mounted in the chassis fuel tank specifically for a separate engine driven pump assembly.

There shall be an electric fuel pump and fuel hose furnished between the chassis fuel tank and the auxiliary pump.

The pickup tube shall be installed to a depth no deeper than ¼ of the fuel level of the chassis fuel tank.

ELECTRIC START SYSTEM FOR AUXILIARY FIRE PUMP

The electric start system for the auxiliary fire pump shall be connected to the chassis electrical tied into power module system. There shall be an on/off switch and push to start switch located near the pump operator's position.

ENGINE THROTTLE

A manually operated vernier engine control throttle shall be installed for the pump engine. The throttle shall be furnished on the pump operator's control panel. There shall be an engraved identification label provided to read "THROTTLE".

2-1/2" GATED INTAKE

One (1) 2-1/2" gated suction intake shall be installed on the plumbing system to supply the auxiliary fire pump from an external water supply. The valve shall be a quarter turn ball valve

and shall have 2-1/2" NST female threads of brass, chrome plated brass, or stainless steel material. Akron valve

The control handle shall be installed directly on the valve, with a labeled handle. The intake shall be provided with a removable screen and a 2-1/2" NST rocker cap with retaining cable or chain installed. Akron valve

An Innovative Controls ¾" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced Teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift, to open and push down, to close.

WATER TANK TO PUMP LINE

One (1) 2-1/2" water tank to fire pump line shall be provided with a full flow quarter turn ball valve, 2-1/2" piping, flex hose and stainless-steel hose clamps. The valve control shall be accessible from the pump operation area and equipped with a nameplate on the handle.
Akron valve

FIRE PUMP TO WATER TANK FILL LINE

One (1) 1" fire pump to water tank refill and pump bypass cooler line shall be provided. The valve shall be a full flow quarter turn ball valve with 1" piping and flex hose to tank. The valve control handle shall have a nameplate located near the valve control.
Akron valve

ELECTRIC REWIND HOSE REEL

Two Hannay unpainted aluminum hose reel with leak proof ball bearing swing joint, adjustable friction brake, electric and crank rewind shall be installed. The discharge shall be controlled by a quarter turn ball valve located at the pump. The reel shall be plumbed with wire reinforced; high-pressure hose coupled. The reel shall be designed to hold 125% of the specified hose capacity. The reel shall be bolted to a mounting system for easy service or removal.

One hose reel shall be mounted on each side of the body towards the front just behind the pre-connect discharge above L1/R1 compartments. The hose reel shall be supplied with a manual crank lever with access to the manual reel from the ground.
An Innovative Controls ¾" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced Teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift, open and push down, to close.

A push button hose reel rewind switch shall be installed to control the electric rewind hose reel. The exact location shall be determined at construction.

100' foot length(s) of 3/4" water hose with pin lug couplings and 800 PSI working pressure shall be provided and mounted on the specified hose reel.

One (1) stainless steel roller assembly shall be provided on the left side hose reel.

One (1) stainless steel roller assembly shall be provided on the right-side hose reel.

HOSE BED 1-1/2" DISCHARGE

One (1) 1-1/2" cross-lay discharge shall be installed at the front of the body. The discharge shall be controlled by a quarter turn ball valve located at the pump. The manually operated swing type control shall be located adjacent to the valve. A nameplate label shall be provided adjacent to the control handle.

An Innovative Controls ¾" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced Teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift, to open and push down to close.
Akron valve

1-1/2" DISCHARGE

One (1) 1-1/2" discharge shall be installed at rear of apparatus. The discharge shall be controlled by a quarter turn ball valve located at the pump. The manually operated swing type control shall be located adjacent to the valve. A nameplate label shall be provided adjacent to the control handle. Akron valve
An Innovative Controls ¾" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced Teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift, to open and push down to close.

One (1) chrome plated elbow with rocker lugs shall be provided with 1-1/2" NST swivel female x 1-1/2" NST male hose threads.

One (1) 1-1/2" NST rocker lug chrome plated vented cap and cable, or chain securement shall be provided.

WATER TANK - 350 GALLON

The apparatus shall be equipped with a three-hundred-fifty (350) gallon polypropylene water tank and equipped with a 3.0" overflow pipe.

WATER TANK FILL TOWER

A fill tower measuring approximately 10” x 10” square shall be provided on the water tank up to and including 500 gallons total capacity.

3/4" DISCHARGE - BLADDER BAG FILL

A 3/4" direct tank discharge shall be provided at the rear of the unit. This discharge will be used to fill "bladder bags".

FOAM PRO FOAM SYSTEM

One (1) FoamPro part number S107-1600/2.0 electronic foam system shall be provided. The system shall be designed for use with Class A foam concentrate. The foam proportioning operation shall be designed for direct measurement of water flows and shall remain consistent within the specified flows and pressures. The system shall be capable of accurately delivering foam solution as required by applicable sections of the NFPA standards.

The system shall be equipped with a control module suitable for installation on the pump panel. There shall be a microprocessor incorporated within the motor driver that shall receive input from the system's flowmeter, while also monitoring the foam concentrate pump output. The microprocessor shall compare the values to ensure that the desired amount of foam concentrate is injected onto the discharge side of the fire pump. A "foam capable" paddlewheel-type flowmeter shall be installed in the discharge side of the piping system.

The control module shall enable the pump operator to:

- Activate the foam proportioning system
- Select the proportioning rates from 0.1% to 1.0%
- See a "low concentrate" warning light flash when the foam tank level becomes low and in two (2) minutes, if the foam concentrate has not been added to the tank, the foam concentrate pump shall be capable of shutting down.

A 12-volt electric motor driven positive displacement plunger pump shall be provided. The pump capacity range shall be 0.1 to 1.7 GPM (6.4L/min) at 200 PSI (13.8 BAR) with a maximum operating pressure up to 400 PSI (27.6 BAR). The system shall draw a maximum of 30 amps at 12 volts. The motor shall be controlled by the microprocessor which shall be mounted to the base of the pump. It shall receive signals from the control module and power the 1/3 horsepower (.25 Kw) electric motor in a variable speed duty cycle to ensure that the correct proportion of concentrate is injected into the water stream.

A full flow check valve shall be provided in the discharge piping to prevent foam contamination of the fire pump and water tank. A 5 PSI (.35 BAR) opening pressure check valve shall be provided in concentrate line.

Components of the complete proportioning system as described above shall include:

- Operator control module
- Paddlewheel flowmeter
- Pump and electric motor/motor driver
- Wiring harnesses
- Low level tank switch
- Foam tank
- Foam injection check valve
- Main waterway check valve
- Flowmeter and tee with 2" male NPT threads.

The foam system shall be installed and calibrated to the manufacturer's requirements. In addition, the system shall be tested and certified by the apparatus manufacturer to meet applicable NFPA standards.

The foam system design shall be tested and pass environmental testing in accordance to SAE standards. The system shall be third party tested to certify compliance with RFI/EMI emissions per MIL-STD-416E.

An installation and operation manual shall be provided for the unit. The system shall have a one (1) year limited warranty by the foam system manufacturer.

CONTROL CONNECTION CABLE -- FOAM SYSTEM

The FoamPro 1600 Series foam system shall be provided with a twelve (12) foot control cable from the controller to the foam pump assembly.

PUMP PANEL CONTROL -- FOAM SYSTEM

The FoamPro 1600 Series foam system shall be provided with a standard pump panel mounted FoamPro control head.

FLOWMETER AND TEE -- FOAM SYSTEM

A FoamPro brass flowmeter shall be provided. The flowmeter shall be installed in the "foam capable" discharge line. The flowmeter shall have maximum accuracy between the flow range of 10 GPM and 320 GPM and be capable of operation between 3 GPM to 380 GPM. The tee shall have 1-1/2" NPT and 2" Victaulic inlet and outlets connections.

LOW-LEVEL TANK SENSOR FOAM TANK

A FoamPro low-level foam tank sensor shall be provided. The sensor shall be capable of mounting side of foam tank that shall interface with the microprocessor. The unit shall have a 1/8" NPT thread size.

MAIN WATERWAY CHECK VALVE -- FOAM SYSTEM

A FoamPro full-flow check valve shall be provided. The valve shall prevent foam contamination of the fire pump and water tank or water contamination of the foam tank. The unit shall have a nickel-electro plated body with stainless steel components. The valve shall have 2" NPT threads with an injection and drain port size of 1/2" NPT.

FOAM SYSTEM -- INJECTOR FITTING

A Foam Pro injector fitting shall be provided with the foam system.

INSTRUCTION AND RATING LABEL -- FOAM SYSTEM

A FoamPro part number 6032-0018 instruction and system rating label shall be provided. The label shall display information for a FoamPro 1600 Series foam system and shall meet applicable sections of the NFPA standards.

SCHEMATIC LABEL -- FOAM SYSTEM

A FoamPro part number 6032-0015 foam system schematic label shall be provided and shall be installed on the pump panel near foam controls. The label shall be a diagram of a single tank foam system layout and shall meet applicable sections of the NFPA standards.

1" FOAM TANK CONTROL -- CLASS A

One (1) Class A foam tank shall be plumbed with 1" valve and corrosion resistant hose from the foam tank to the foam inlet of the foam system. The manually opened valve shall be provided behind the pump panel with a label.

INTEGRAL CLASS A FOAM TANK -- 20 GALLON

One (1) twenty (20) gallon Class A foam tank shall be installed within the water tank. The non-corrosive foam tank shall meet applicable sections of NFPA standards. The foam concentrate tank shall be provided with sufficient wash partitions so that the maximum dimension perpendicular to the plane of any partition shall not exceed 36 inches. The swash partition(s) shall extend from wall to wall and cover at least 75 percent of the area of the plane of the partition.

The foam concentrate tank shall be provided with a fill tower or expansion compartment having a minimum area of 12 square inches and having a volume of not less than 2 percent of the total tank volume. The fill tower opening shall be protected by a completely sealed air-tight cover. The cover shall be attached to the fill tower by mechanical means. The fill opening shall be designed to incorporate a 1/4 inch removable screen and shall be located so that foam concentrate from a five

(5) gallon container can be dumped directly to the bottom of the tank to minimize aeration without the use of funnels or other special devices.

The foam tank fill tower shall be equipped with a pressure/vacuum vent that enables the tank to compensate for changes in pressure or vacuum when filling or withdrawing foam concentrate from the tank. The pressure/vacuum vent shall not allow atmospheric air to enter the foam tank except during operation or to compensate for thermal fluctuations. The vent shall be protected to prevent foam concentrate from escaping or directly contacting the vent at any time. The vent shall be of sufficient size to prevent tank damage during filling or foam withdrawal.

A color-coded label or visible permanent marking that reads "FOAM TANK FILL" shall be placed at or near any foam concentrate tank fills opening. A label shall be placed at or near any foam concentrate tank fill opening that specifies the type of foam concentrate the system is designed to use. Any restrictions on the types of foam concentrate that can be used with the system shall also be stated, and a warning message that reads "WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM."

The foam concentrate tank outlet connection shall be designed and located to prevent aeration of the foam concentrate and shall allow withdrawal of 80 percent of the foam concentrate tank storage capacity under all operating conditions with the vehicle level.

The foam tank(s) shall be fabricated by United Plastic Fabricating.

FOAM TANK DRAIN -- UNDER TANK

The foam tank shall have one (1) 1" gate valve drain provision installed.

CLASS A FOAM TANK GAUGE

One (1) Fire Research TankVision Pro model WLA360-A00 foam tank indicator kit shall be installed at the operator's panel. The kit shall include an electronic indicator module, a pressure sensor, a 10-ft sensor cable and a tank vent. The indicator shall show the volume of Class A foam concentrate in the tank on nine (9) easy to see super bright RGB LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be waterproof, manufactured of Polycarbonate/Nylon, and have a distinctive green label.

The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, six (6) programmable colored light patterns to display tank volume, adjustable brightness control levels and a datalink to connect remote indicators. Low foam warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.

The indicator shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted from the outside of the foam tank near the bottom. No probe shall be placed on the interior of the tank. The wiring shall be weather resistant and have automotive type plug-in connectors. The foam tank vent shall be installed on the foam fill tower.

CAB MOUNTED CLASS A FOAM TANK GAUGE

One (1) Fire Research TankVision model WLA265-A00 miniature foam tank indicator shall be installed in the cab. The indicator shall show the volume of Class A foam concentrate in the tank on five (5) easy to see super bright LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be manufactured of Polycarbonate material with an integrated lens and have a distinctive green label.

The miniature indicator shall receive input information over a single wire from a Fire Research TankVision primary indicator, model WLA360-A00 or WLA460-A00.

FOAM SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

The proportioning system shall be capable of proportioning foam concentrate in accordance with the foam concentrate manufacturer's recommendations for the type of foam concentrate used in the system over the system's design range of flow and pressures. The foam proportioning system water flow characteristics and the range of proportioning ratio shall be specified as noted herein. The latest foam system shall be in compliance with applicable NFPA standards as it relates to this specified system

Plumbing and Strainer

The foam concentrate supply line shall be non-collapsible. A means shall be provided to prevent water back flow into the foam proportioning system and the foam concentrate storage tank.

A strainer or filter shall be provided on the foam concentrate supply side of the foam proportioner to prevent any debris that might 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

A foam concentrate system flush line shall be provided as required by the foam system manufacturer. A means shall be provided in the flush line to prevent water backflow into the foam concentrate tank or water tank during the flushing operation.

Foam System Controls

The foam proportioning system operating controls shall be located at or near the pump operator's position and shall be clearly identified. Foam proportioning system shall be provided with

accessible controls to completely flush the system with water according to the manufacturer's instructions.

Labels and Instructions

An instruction plate shall be provided for the foam proportioning system that includes, at a minimum, piping schematic of the system and basic operating instructions. Labels that are marked clearly with the identification and function shall be provided for each control, gauge, and indicator related to the foam proportioning system.

A label shall be provided on the pump operator's panel that identifies the type of foam concentrate that the foam proportioning system is designed to use. It shall also state the minimum/maximum foam proportioning rate at the minimum/maximum foam proportioning rated system flow and pressure.

Two (2) copies of an operations and maintenance manual shall be provided. They shall include a complete diagram of the system together with operating instructions and details outlining all recommended maintenance procedures.

Foam System Testing

The accuracy of the foam proportioning system shall be certified by the foam equipment manufacturer and also tested by the installer prior to delivery of the apparatus in compliance to NFPA standards.

LABELS

Safety, information, data, and instruction labels for apparatus shall be provided and installed at the operator's instrument panel.

The labels shall include rated capacities, pressure ratings, and engine speeds as determined by the certification tests. The no-load governed speed of the engine, as stated by the engine manufacturer, shall also be included.

The labels shall be provided with all information and be attached to the apparatus prior to delivery.

COLOR CODED PUMP PANEL LABELING AND NAMEPLATES

Discharge and intake valve controls shall be color coded in compliance to guidelines of applicable sections of NFPA standards.

Innovative Controls permanent type nameplates and instruction panels shall be installed on the pump panel for safe operation of the pumping equipment and controls.

WATER TANK GAUGE

One (1) Fire Research TankVision Pro model WLA300-A00 tank indicator kit shall be installed on the pump panel. The kit shall include an electronic indicator module, a pressure sensor, and a 10' sensor cable. The indicator shall show the volume of water in the tank on nine (9) easy to see super bright RGB LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be waterproof, manufactured of Polycarbonate/Nylon material, and have a distinctive blue label.

The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, six (6) programmable colored light patterns to display tank volume, adjustable brightness control levels and a datalink to connect remote indicators. Low water warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.

The indicator shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted from the outside of the water tank near the bottom. No probe shall be placed on the interior of the tank. Wiring shall be weather resistant and have automotive type plug-in connectors.

CAB MOUNTED WATER TANK GAUGE

One (1) Fire Research TankVision model WLA205-A00 miniature tank indicator shall be installed in the chassis cab. The indicator shall show the volume of water in the tank on five (5) easy to see super bright LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be manufactured of Polycarbonate material with an integrated lens and have a distinctive blue label.

The miniature indicator shall receive input information over a single wire from a Fire Research TankVision primary indicator model, WLA300-A00 or WLA400-A00.

WATER TANK VOLUME REMOTE INDICATOR

One (1) pair of Fire Research MaxVision model WLA280-A00 tank remote indicator shall be installed, one remote indicator on each side of the apparatus and one on the back. The indicator shall show the volume of water in the tank on ninety-six (96) easy to see super bright tri-color LEDs. The indicator case shall be waterproof, manufactured of polycarbonate material with an integrated lens. The package includes a rubber gasket.

The remote indicator shall receive input information over a datalink from a Fire Research TankVision model WLA300-A00 or WLA400-A00 tank primary indicator. The remote indicator shall indicate the level as a single color in Red for 25% or less, Amber color for up to 50% volume, Blue color for up to 75% volume and Green color for up to 100% volume. When the level reaches 25%, the red LEDs will begin flashing. When the level is empty, the red LEDs will scroll in a down-chasing motion and then flash three times. It shall have the program capability to adjust the brightness level for daytime and nighttime viewing.

3/16" ALUMINUM BODY

The body shall be fabricated of aluminum extrusions, smooth aluminum sheet and aluminum treadplate.

The aluminum extrusion alloy shall be 6061 with a temper rating of T6 and have a tensile strength of 45,000 PSI and yield strength of 40,000 pounds. The aluminum extrusions shall 3" x 3" aluminum tubing, 1-3/4" x 3" aluminum tubing and 3" x 3" aluminum angle and specially designed extrusions, up to .250" wall thickness where applicable.

The smooth aluminum sheet material alloy shall be 5052 with a temper rating of H32 and have a tensile strength of 33,000 PSI and yield strength of 28,000 pounds.

The aluminum treadplate alloy shall be 3003 with a temper rating of H22, and have a tensile strength of 30,000 PSI and yield strength of 28,000 pounds.

The extrusions shall be designed as structural-framing members with smooth aluminum and treadplate fabricated to form compartments, hosebeds, and floors. All aluminum material shall be welded together using the latest mig spray pulse arc welding system.

Compartments to be sweep-out design and to be water and dust proof. All compartments shall be made to the maximum practical dimensions to provide maximum storage capacity. To ensure maximum storage space, the apparatus shall be constructed without any void spaces between the body and the compartment walls. Double wall construction does not meet this requirement.

All exterior compartments shall have polished aluminum drip moldings installed above the doors where necessary to prevent water from entering the compartments.

Wheel well panels shall be formed aluminum that is welded in place. There shall be no visible bolt heads, retention nuts or fasteners on the exterior surface of the panel. The frame side of the wheel well area on each side of the opening shall be attached to the frame side of the front and rear compartments. All seams on the frame side of the body shall be welded and caulked to prevent moisture from entering the compartments.

The rear wheel wells shall be radius cut for a streamlined appearance. A polished aluminum fenderette shall be furnished at each rear wheel well opening, held in place with stainless steel fasteners.

FASTENERS

All aluminum and stainless-steel components shall be attached using stainless steel fasteners.

Compartment door hinges, handrails and running boards shall be attached using minimum 1/4" diameter machine bolt fasteners.

3/16" diameter fasteners shall only be used in nonstructural areas such as door handles, trim moldings, gauge mounting, etc.

ELECTROLYSIS CORROSION CONTROL

The apparatus shall be assembled using ECK or electrolysis corrosion control, on all high corrosion potential areas, such as door latches, door hinges, trim plates, fenderettes, etc. This coating is a high zinc compound that shall act as a sacrificial barrier to prevent electrolysis and corrosion between dissimilar metals. This shall be in addition to any other barrier material that may be used.

All 1/4" diameter and smaller screws and bolts shall be stainless steel.

Due to the expected life of the vehicle, proposals will only be acceptable from manufacturers that include these corrosion features.

COMPARTMENT FLOORS

The compartment floors shall be constructed of smooth aluminum material, to match the compartment interior walls.

ALUMINUM SUB-FRAME

The main body sub-frame shall be extruded aluminum and be fully welded to the longitudinal frame rail extrusions that are mounted parallel to the chassis frame rails.

The main body sub-frame shall be constructed of no less than four (4) extruded aluminum tubes running full width of the apparatus body. A minimum of two (2) full body width tubes shall be provided ahead of and behind the rear axle forming the main body support crossmembers. The main cross tubes shall be fully welded to the vertical and horizontal extrusions forming the body super-structure, described elsewhere herein.

For added strength and rigidity, no less than six (6) intermediate body crossmembers shall be provided constructed extruded aluminum tubes.

The intermediate structural crossmembers shall be interconnected and welded to the main body tubular crossmembers forming a fully welded support grid for the body super-structure compartments.

The subframe crossmembers shall be attached to the chassis frame rails using heavy "U" bolt fasteners to allow removal of the subframe and body assembly from the chassis. There shall be a barrier provided between the subframe and body to prevent electrolysis.

The tubular extrusion shall consist of 1-3/4" x 3" rectangular tubes of both 1/8" and 3/16" wall thickness and 3" x 3" square aluminum tubing of both 1/8" and 3/16" wall thickness.

SINGLE AXLE WHEEL AREA

For ease of accessibility and maintenance, wheel well panels shall be 3/16" aluminum that is welded in place, then painted to match the apparatus body.

WHEEL WELL LINER

To fully protect the wheel well area from road debris and to aid in cleaning, a full depth (minimum of 25.00") radius wheel well liner shall be provided. Wheel well liner shall be smooth aluminum material to prevent corrosion.

FENDERETTES

The rear wheel wells shall be radius cut for a streamlined appearance. A polished aluminum fenderette shall be furnished at each rear wheel well opening, held in place with concealed stainless-steel fasteners.

HOSEBED SINGLE AXLE

The hose bed compartment deck shall be constructed entirely from maintenance-free, extruded aluminum slats. The slats shall have an anodized, radiused ribbed top surface. The slats shall be of widths approximately 3/4" high x 6" wide and shall be welded into a one-piece grid system to prevent the accumulation of water and allow ventilation to assist in drying hose.

The apparatus hose body shall be properly reinforced without the use of angles or structural shapes and free from all projections that might injure the fire hose.

The main apparatus hose body shall run the full length of the apparatus body from behind the pump panel area to the rear face of the body.

The upper rear interior of the hose body on the right and left sides shall be overlaid with brushed stainless steel to protect the painted surface from damage by hose couplings.

HOSE BED STORAGE CAPACITY

The hose bed shall be designed to have a storage capacity for the specified fire City supplied fire hose.

BODY WIDTH

The overall width of the mini pumper body shall not exceed 96".

BODY CONFIGURATION

The formed aluminum mini body shall be up to 116" long, with a 60-in cab to axle, reference drawing for actual body length. The body compartments shall be full depth from top to bottom. Each compartment shall be approximately twenty-three and one-half inches in depth. The area between the body sides shall be 48" wide.

COMPARTMENT DEPTH

The side compartments on the pumper body shall have the maximum available height and depth dimensions. These dimensions shall remain consistent for the full height and depth of the compartment.

HINGED COMPARTMENT FLUSH DOOR CONSTRUCTION

All hinged compartment doors shall be of the flush style so that the entire door fits flush against the apparatus body sides. Doors shall be designed, in the closed position, to have the painted edges protected from damage on the tops by forming the tread plate compartment tops into an extended drip edge and on the bottom by the rub rail.

Doors shall be a minimum 2" thick, fabricated of a minimum of 1/8" smooth aluminum. Full panel inner compartment door liners shall be provided and constructed from smooth aluminum. The compartment doors shall have a foam panel glued in place between the exterior and interior door skin. Exterior door panels shall be smooth with no welds visible on the exterior skin. Double door compartments shall be equipped with a secondary latch to hold the secondary door in position.

All compartment door hinges shall be full-length piano type constructed of a minimum 16-gauge type 304, stainless steel with 3/16" stainless steel hinge pin with dual directional bolt holes for ease of adjustment.

When horizontally hinged lift-up doors are specified, they shall be equipped with heavy-duty gas filled dampeners to hold the doors in the open position. All other hinged doors shall be equipped with spring loaded hold open devices specifically designed for use on vertically hinged doors. Door holders shall be bolted in position. The door ajar switches shall be fully enclosed within structural members and shall not extend into the clear door opening.

All compartment doors shall be provided with hollow core weather stripping to provide a weather tight seal at the door opening and to prevent road spray and debris from entering the compartment.

A non-moisture absorbing gasket shall be installed between the door latch and the door skin panel.

EXTERIOR DOOR HANDLES

All compartment doors shall be furnished with a large solid STAINLESS-STEEL spring loaded locking Maltese Cross D-handle with slam type latches. D-handles shall have the large style "bent" D-ring for ease of grabbing the handle even when wearing mitts or gloves. Chrome plated standard steel D-handles are not acceptable.

Door handles shall be held in place with four stainless steel stud fasteners secured on the interior of the door skin to eliminate bolt heads on the exterior latch ring. To prevent possible interaction between dissimilar metals, the studs shall not break any painted surface. A non-moisture absorbing gasket shall be installed between the door latch and the door skin panel.

Handles which are held in place with visible fasteners, two-sided tape or glue do not meet the intent of this requirement.

COMPARTMENT HEIGHT

The left side body compartments shall be 60" high.

LEFT FRONT COMPARTMENT

There shall be one (1) full height compartment located at the front of the apparatus body. The compartment shall be equipped with a single full-height hinged door.

The compartment shall be equipped with the following items:

Compartment to be approximately 40" high x 32" wide

One (1) louver with filter shall be installed in the compartment.

ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

ADJUSTABLE SHELF

One (1) adjustable shelf shall be constructed of .188” smooth aluminum plate with 1.5” formed vertical lip front & back. Shelf supports on each side to be constructed of .188” aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8” bolts and spring-loaded cam locks. If shelf is longer than 40” a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.

The shelf/tray shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

The floor area of the compartment shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material

shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

COMPARTMENT LIGHTS

Two (2) 36" long OnScene Solutions Access LED lights shall be installed, one on each side of the door opening. The lights shall contain 24 LEDs per light producing approximately 120 lumens (six LEDs and 30 lumens every 9"). The light stick shall be rated at 100,000 hours of service and shall be provided with a 5-year free replacement warranty. The light shall have a 5/8" LEXAN™ polycarbonate tube enclosure for severe duty applications.

The light stick shall be waterproof and be connectible via a jumper wire to add additional lights in series if required.

The compartment light will be controlled by a magnetic "On-Off" switch located on each compartment door.

LEFT OVERWHEEL COMPARTMENTS

There shall be three (3) compartments above the rear wheels. The compartments shall be equipped with a single hinged lift up door.

The compartment directly above the wheels shall be approximately 76" wide x 22" high. High enough to fit a saw with a full wrap handle Sthill ms 462

Above this compartment shall be two narrower compartments. Both upper compartments shall measure approximately 38" wide x 18" high.

The compartments shall be equipped with the following:

Three (3) louvers with filter shall be installed in the compartment.

The floor area of the compartment shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

COMPARTMENT LIGHTS

Two (2) 8" long OnScene Solutions Access LED lights shall be installed, one on each side of the door opening. The lights shall contain six LEDs producing approximately 30 lumens per light. The light stick shall be rated at 100,000 hours of service and shall be provided with a 5-year free replacement warranty. The light shall have a 5/8" LEXAN™ polycarbonate tube enclosure for severe duty applications.

The light stick shall be waterproof and be connectible via a jumper wire to add additional lights in series if required.

The compartment light will be controlled by a magnetic "On-Off" switch located on each compartment door.

LEFT REAR COMPARTMENT

There shall be one (1) low compartment located behind the rear wheels. The compartment shall be equipped with a single full-height hinged door.

The compartment shall be equipped with the following:

Compartment shall be approximately 24" wide x 20" high

One (1) louver with filter shall be installed in the compartment.

COMPARTMENT LIGHTS

Two (2) 8" long OnScene Solutions Access LED lights shall be installed, one on each side of the door opening. The lights shall contain six LEDs producing approximately 30 lumens per light. The light stick shall be rated at 100,000 hours of service and shall be provided with a 5 year free replacement warranty. The light shall have a 5/8" LEXAN™ polycarbonate tube enclosure for severe duty applications.

The light stick shall be waterproof and be connectible via a jumper wire to add additional lights in series if required.
The compartment light will be controlled by a magnetic "On-Off" switch located on each compartment door.

RIGHT SIDE BODY COMPARTMENTS

The right-side body compartmentation shall be as follows:

COMPARTMENT HEIGHT

The right-side body compartments shall be 60" high.

RIGHT FRONT COMPARTMENT

There shall be one (1) full height compartment located at the front of the apparatus body. The compartment shall be equipped with a single full-height hinged door.

The compartment shall be equipped with the following items:

compartment to be approximately 40" high x 32" wide

One (1) louver with filter shall be installed in the compartment.

ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

ADJUSTABLE SHELF

One (1) adjustable shelf shall be constructed of .188” smooth aluminum plate with 1.5” formed vertical lip front & back. Shelf supports on each side to be constructed of .188” aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8” bolts and spring-loaded cam locks. If shelf is longer than 40” a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.

The floor area of the compartment shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

COMPARTMENT LIGHTS

Two (2) 36" long OnScene Solutions Access LED lights shall be installed, one on each side of the door opening. The lights shall contain 24 LEDs per light producing approximately 120 lumens (six LEDs and 30 lumens every 9"). The light stick shall be rated at 100,000 hours of service and shall be provided with a 5-year free replacement warranty. The light shall have a 5/8" LEXAN™ polycarbonate tube enclosure for severe duty applications.

The light stick shall be waterproof and be connectible via a jumper wire to add additional lights in series if required.

The compartment light will be controlled by a magnetic "On-Off" switch located on each compartment door.

RIGHT OVERWHEEL COMPARTMENT

There shall be three (3) compartments above the rear wheels. The compartments shall be equipped with a single hinged lift up door.

The compartment directly above the wheels shall be approximately 76" wide x 22" high.

Above this compartment shall be two narrower compartments. Both upper compartments shall measure approximately 38" wide x 18" high.

The compartment shall be equipped with the following:

Three (3) louver with filter shall be installed in the compartment.

COMPARTMENT LIGHTS

Two (2) 18" long OnScene Solutions Access LED lights shall be installed, one on each side of the door opening. The lights shall contain 12 LEDs per light producing approximately 60 lumens (six LEDs and 30 lumens every 9"). The light stick shall be rated at 100,000 hours of service and shall be provided with a 5-year free replacement warranty. The light shall have a 5/8" LEXAN™ polycarbonate tube enclosure for severe duty applications.

The light stick shall be waterproof and be connectible via a jumper wire to add additional lights in series if required.

The compartment light will be controlled by a magnetic "On-Off" switch located on each compartment door.

RIGHT REAR COMPARTMENT

There shall be one (1) low compartment located behind the rear wheels. The compartment shall be equipped with a single drop-down hinged door.

The compartment shall be equipped with the following:

Compartment shall be approximately 24" wide x 20" high

One (1) louver with filter shall be installed in the compartment.

The floor area of the compartment shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 9/16" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.

COMPARTMENT LIGHTS

Two (2) 8" long OnScene Solutions Access LED lights shall be installed, one on each side of the door opening. The lights shall contain six LEDs producing approximately 30 lumens per light. The light stick shall be rated at 100,000 hours of service and shall be provided with a 5 year free replacement warranty. The light shall have a 5/8" LEXAN™ polycarbonate tube enclosure for severe duty applications.

The light stick shall be waterproof and be connectible via a jumper wire to add additional lights in series if required.

The compartment light will be controlled by a magnetic "On-Off" switch located on each compartment door.

REAR BODY CONFIGURATION

The rear of the apparatus body shall be of the flat back design.

REAR BODY

The apparatus body, behind the rear wheels shall be raised to allow for a high angle of departure.

REAR STEP - 12” BOLT-ON

A 12" deep step surface shall be provided at the rear of the apparatus body, bolted in place and easily removable for replacement or repair. The tailboard shall be constructed of .188" aluminum diamond plate or equal non-slip surface in compliance with NFPA #1901 standards. Zico #PS-8-5

A label shall be provided warning personnel that riding on the rear step while the apparatus is in motion is prohibited.

SPARE TIRE STORAGE - REAR

The spare tire shall be stored in a pocket at the rear of the apparatus under the pump assembly in a separate compartment. The compartment shall be constructed to be able to fit the spare tire and contain a means of automatically draining moisture from the compartment.

COVER FOR WATER TANK

An expanded aluminum cover with tie down eyelets shall be provided above the water tank.

HARD SUCTION MOUNTING

One (1) hard suction hose compartment shall be provided below the body compartments, on the right side. The design shall allow the hose to be individually removed from the rear of the apparatus. The compartment shall be constructed of treadplate material. The hard suction hose compartment shall have a hinged door with push to latch door catches.

Compartment sized to hold 2.5" hoses with handles. Approximately 4" high.

The hinged door shall be constructed of smooth material, with chevron striping applied to match the rear of the apparatus body.

SUCTION HOSE SOURCE

A new suction hose shall be provided by the body builder.

FRONT BODY PROTECTION PANELS

Aluminum tread plate overlays and panels shall be installed on the front of the body compartment from the lower edge to the top of the compartment doors.

REAR BODY PROTECTION PANELS

The rear body panels of the body shall be a smooth material, to allow for the proper application and installation of a "Chevron" stripe on the rear.

FOLDING STEP LEFT SIDE REAR

A folding step of die cast high-strength zinc/aluminum alloy, plated with a superior automotive grade chrome finish shall be provided. The greater than 42 sq. in. serrated non-skid step traction area also offers an oversized non-slip grasp hand-hold. A heavy-duty stainless-steel spring design firmly holds the step in the open or closed positions. A rubber stop prevents any transit noise and rattles in the closed position. Step lighting shall be from a LED light mounted above the step.

The step has been third part tested to assure conformation of NFPA 1901 and FHA, 49CFR specifications for stepping surfaces and handhold.

The step shall be installed on the rear left side of the body.

WHEEL CHOCK PROVISION

Wheel Chock AC-32-W with associated mount shall be provided and installed on a vertical surface to be determined at preconstruction.

FOLDING STEP RIGHT SIDE REAR

A folding step of die cast high-strength zinc/aluminum alloy, plated with a superior automotive grade chrome finish shall be provided. The greater than 42 sq. in. serrated non-skid step traction area also offers an oversized non-slip grasp handhold. A heavy-duty stainless-steel spring design firmly holds the step in the open or closed positions. A rubber stop prevents any transit noise and rattles in the closed position. Step lighting shall be from a LED light mounted above the step.

The step has been third part tested to assure conformation of NFPA 1901 and FHA, 49CFR specifications for stepping surfaces and handhold.

The step shall be installed on the rear right side of the body.

HANDRAIL REAR STEP

Two (2) extruded aluminum non-slip handrails, approximately 30" in length, shall be provided and vertically mounted on the rear of the apparatus, one (1) on each side of the body.

EXTRUDED ALUMINUM RUB RAILS

Full body length polished aluminum rub rails shall be bolted in place on the lower right and left body sides. The side rub rails shall be a heavy extruded aluminum "C" channel.

NYLON SPACERS FOR RUB RAILS

There shall be nylon spacers provided between the rub rail and the body. This shall allow wash out and replacement in the event of damage.

WHEEL WELL CABINET PROVISION LOCATION

The wheel well cabinet provisions shall be located on the left side of the apparatus, behind the rear wheels. The cabinet shall include a drain and vent to the atmosphere for fuel and oil storage.

FUEL PIPING AND FILL CAP

There shall be a fuel fill cap provided in the recessed area of the left side rear wheel well clearly marked, "DIESEL FUEL ONLY". The fill shall be piped to the fuel tank.

FRONT MOUNTED ELECTRIC WINCH

One (1) Warn, model VR12-S Gen II electric winch, with 12,000 lb. capacity shall be provided and mounted on the front of the apparatus by the purchaser. The winch shall be secured directly to the chassis frame rails by a heavy steel support structure designed to withstand the pulling force of the winch.

The winch shall include 125 ft. 3/8" galvanized cable with clevis hook, 25 foot minimum or longer remote-control pendant, 4-way roller fairlead through the bumper.

The installation shall maintain access to the winch controls.

BODY PAINT PROCESS

All bright metal fittings, if unavailable in stainless steel shall be heavily chrome plated. Iron fittings shall be copper plated prior to chrome plating. If applicable, any and all accessory times shall be removed from the body prior to cleaning and painting. Any accessory items that are to be painted shall be painted separately and installed after the body is painted and cured.

All seams shall be caulked, both inside and along the exterior edges, with a urethane automotive sealant to prevent moisture from entering between any body panels.

The body and all parts shall be thoroughly washed with a grease cutting solvent (PPG DX330) prior to any sanding. After the body has been sanded and the weld marks and minor imperfections are filled and sanded, the body shall be washed again with (PPG DX330) to remove any contaminants on the surface.

The next two to four coats (depending on need) shall be a PPG DelFleet F4936 High Solids Epoxy Gray Primer. The film build shall be 4-6 mils when dry. The primer surfacer coat, after appropriate dry time, shall be sanded with 320-600 grit sandpaper to ensure maximum gloss of the paint. The last step is the application of at least three coats of PPG DelFleet polyurethane two-component color (single stage). The film build being 2-3 mils dry. The single stage polyurethane, when mixed with component (PPG F3270) catalyst shall provide a UV barrier to prevent fading and chalking.

All products and technicians are certified by PPG every two (2) years.

APPARATUS COLOR

The apparatus shall be Ford race red in color.

INTERIOR COMPARTMENT FINISH

Ten (10) apparatus side compartment interiors are to be painted with a spatter finish material. The compartments shall be cleaned with a grease remover, and then the surface sanded and prepared for painting. The compartment shall be provided with two (2) coats of white epoxy. The compartments are then coated with a splatter paint topcoat.

TOUCH-UP PAINT

One (1) two (2) ounce bottle of touch-up paint shall be furnished with the completed truck at final delivery.

UNDERCOATING

The cab fenders and entire underside of the four-door commercial chassis cab is to be cleaned and properly prepared for application of a sprayed on automotive type undercoating for added corrosion resistance. Undercoating is to be a solvent based, rubberized coating, black in color.

UNDERCOATING

The entire underside of the single axle apparatus body is to be cleaned and properly prepared for application of a sprayed on automotive type undercoating for added corrosion resistance. Undercoating is to be a solvent based, rubberized coating, black in color.

LETTERING

The builder shall supply and install the apparatus lettering. The lettering shall be gold leaf with the existing City design and markings.

REFLECTIVE STRIPING

A 1" x 4" x 1" wide 3M brand Scotch lite reflective multi-stripe shall be affixed to the perimeter of the vehicle. There shall be a 1" gap between each of the stripes. Striping shall conform to applicable NFPA requirements. At least 50% of the perimeter length of each side and width of the rear, and at least 25% of the perimeter width of the front of the vehicle shall have reflective striping.

The striping shall be applied in a large "hockey stick" pattern the same as the existing Town of Huachuca City striping pattern

COLOR OF STRIPING MATERIAL

The color of the 3M brand striping material shall be white.

CHEVRON STRIPING

The entire rear portion of the body shall have 3M reflective red and yellow striping installed. The chevron style striping shall be applied at a 45-degree upward angle pointing towards the center upper portion of the rear panel.

YELLOW SAFETY TAPE - STANDING & WALKING SURFACES

The apparatus shall be NFPA standard 15.7.1.6 designating any horizontal standing or walking surface higher than 48-in (1220 mm) from the ground and not guarded by railing or structure at least 12-in (300 mm) high shall have at least a 1-in (25 mm) wide safety yellow line delineation that contrasts with the background to mark the outside perimeter of the designated standing or walking surface area, excluding steps and ladders.

LOOSE EQUIPMENT

The following equipment shall be shipped with the completed unit.

One (1) Dewalt DWNT75000 200-piece mechanics tool kit.
One (1) set of snow chains
One (1) Stihl 462 27” bar with cover chainsaw with mounting bracket
One (1) Orca or equivalent 568 cooler (red)

Two (2) Vulcan 180 flashlights and mounts
DOT Triangles
10lb extinguisher