DACO FIRE EQUIPMENT

Rosenbauer Fire Apparatus Proposal

FOR

Alabama-Coushatta Indian Nation

Volunteer Fire Department

Maverick 1250 GPM – 1500 Tank CAFS Pumper/Tanker

SAM KOETTER

DACO FIRE EQUIPMENT

November 4, 2015

LOCATIONS

201 AVENUE R – LUBBOCK, TX 79415
6000 HUDDLESTON ST. – FORT WORTH, TX 76137

ROSENBAUER FIRE APPARATUS PROPOSAL

DATE: OCTOBER 20, 2015 REVISED 12-1-2015

This proposal has been prepared for:

Alabama-Coushatta Indian Nation
Volunteer Fire Department
571 State Park Road 56
Livingston, Texas 77351

We hereby propose to furnish to you, subject to proper execution of the attached agreement by you and by a representative of this Company in Fort Worth, Texas the following Rosenbauer built in accordance with the attached specifications:

MODEL AND DESCRIPTION

ONE (1) ROSENBAUER MAVERICK PUMPER/TANKER APPARATUS, WATEROUS 1250 GPM PTO SINGLE STAGE PUMP SYSTEM, STAINLESS STEEL PLUMBING, ROWE "CAFS" SYSTEM, FOAMPRO 2002 INJECTION FOAM SYSTEM WITH A 30 GALLON FOAM TANK, BUMPER MOUNTED REMOTE CONTROLLED TURRET WITH FRONT BUMPER JUMPLINE, HOSE REEL, (2) SPEEDLAY 1-1/2" DISCHARGES, FOUR (2) 2-1/2" DISCHARGES, SIDE MOUNT PUMP PANEL, FX MAVERICK SERIES ALUMINUM BODY WITH ROBINSON ROLLUP DOORS, 1500 GALLON POLY TANK, 10" REAR NEWTON DUMP VALVE WITH ROSENBAUER SWIVEL DUMP, PASSENGER SIDE UPPER LADDER STORAGE, LOWER ZICO 12 VOLT PASSENGER SIDE FOLDING TANK COMPARTMENT, LED WARING LIGHTS, INTERNATIONAL 4X2, 7500 SERIES 2-DOOR CAB/CHASSIS, 44,000# GVW, 14,000# FRONT AXLE, 30,000# REAR AXLE, 350 HP DIESEL ENGINE WITH 3000EVS ALLISON AUTOMATIC TRANSMISSION, SEATING FOR TWO (2). FEDERAL SIGNAL BACKUP CAMERA WITH 7" SCREEN, AM/FM WEATHERBAND RADIO.
HGAC CONTRACT ITEM CB03. HGAC ADMIN FEE INCLUDED IN BID PRICE

UNIT PRICE - $ 344,660.00

DELIVERY –

Delivery will be made approximately 295-325

Terms of payment are **NET ON DELIVERY**, unless otherwise stated.

This proposal shall expire unless accepted within 30 days after the date first set above. This expiration date may be extended, in writing, at the discretion of the Company.

DACO FIRE EQUIPMENT, INC.

By: Sam Koetter

MAVERICK SERIES 1250 GPM – 1500 GALLON PUMPER TANKER "CAFS" APPARATUS INTERNATIONAL 2-DOOR CAB/CHASSIS

2016 NAVISTAR 7500 SBA 4X2 (SA637) CONVENTIONAL 2-DOOR CHASSIS

CHASSIS

The commercial chassis shall be an International 7500 SBA 4X2, 2 door cab with the following equipment:

GVW RATING

The gross vehicle weight rating shall be 44,000#.

FRAME

The chassis frame rails shall be channel type, 10.125" x 3.580" x 0.312". The frame rails shall be formed from 120,000 psi yield, heat treated alloy steel.

Frame reinforcement, Outer "C" channel, heat treated alloy steel, 120,000 PSI Yield, 10.813" x 3.892" x 0.312".

BUMPER

A full width, aerodynamic, chrome plated steel bumper, 0.189" material thickness shall be provided.

WHEELBASE

The wheelbase shall be approximately 195".

TOW HOOKS

Two (2) frame mounted, painted front tow hooks shall be supplied.

FRONT AXLE

Meritor MFS-14-143A, wide track, I-beam type, 14,000-lb capacity Non-Driving Axle

FRONT SUSPENSION

The front suspension shall be spring parabolic, taper leaf, with a 14,000# capacity and shock absorbers. Spring pins rubber bushings, maintenance-free.

FRONT TIRES AND WHEELS

Front tires shall be Continental HSC1, 12R22.5, tubeless type 16 ply radial tires with highway tread mounted on 22.5" painted steel disc, 2 Hand Hole, 10 stud hub-piloted disc wheels.

Black hard rubber mud flaps shall be provided behind the front tires.

REAR AXLE

The rear axle shall be single reduction Dana Spicer S30-190, with a capacity of 30,000# and a ratio of 5.38. Rear axle drain plug, magnetic type.

REAR SUSPENSION

The rear suspension shall be Vari-Rate, 30,000#, with 4500 lb. auxiliary rubber spring.

REAR TIRES AND WHEELS

Rear tires shall be Continental HDR2 315/80R22.5 tubeless type 20 ply radial tires mounted on 22.5" painted steel disc, 5 Hand Hole, 10 stud hub-piloted disc wheels.

BRAKE SYSTEM

The vehicle shall be equipped dual air brake system with ABS 4-channel with automatic traction control for straight truck application.

The ABS (Bendix AntiLock Brake System) with full vehicle wheel control system, shall provide anti-lock braking control on both the front and rear wheels. It shall be a digitally controlled system that utilizes microprocessor technology to control the anti-lock braking system. Each wheel shall be monitored by the system. When any wheel begins to lockup, a signal shall be sent to the control unit. This control unit shall then reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lock-up of any wheel to help prevent the apparatus from skidding out of control.

The brake system air compressor shall be a Bendix Tu-Flo 550, 13.2 CFM with a Bendix AD-9 dryer with heater. Two (2) air tanks mounted inline under left frame rail, back of cab.

Front Brakes: S-Cam, 16.5" x 5.0" includes Haldex 20 sq. in. long stroke brake chambers

Rear Brakes: S-Cam, 16.5" x 7.0" with 36/36 sq. in. long stroke brake chamber and spring actuated parking brake.

The brake system shall include the following:

- Color coded nylon brake lines
- Twist type drain valve
- Front and rear brake dust shields
- Front and rear automatic slack adjusters
- Automatic drain valve with heater, Bendix DV-2 for air tank
- Parking brake valve with yellow knob located on the instrument panel

ENGINE

The chassis shall be equipped with an Navistar N10, EPA 2010, SCR, Electronic, turbocharged, six-cylinder, electronic engine, 350HP @ 2000 RPM, 1,150 lb-ft torque @ 1200 RPM, 2200 RPM governed speed.

Engine accessories shall include:

- Intake manifold electric grid heater with engine ECM control
- Electronic cruise control integral with steering wheel
- Electronic key operated engine shutdown
- Fuel/water separator
- Engine spin-on type oil filter
- Air cleaner restriction gauge, air cleaner mounted
- Fan Drive (Horton Drivemaster Polar Extreme), Direct Drive Type, 2-speed with residual torque device for disengaged fan speed
- Ember screen mounted to grille and cowl tray to keep hot embers out of Engine and HVAC Air intake system
- 2015 Emission approved engine
- Delco Remy 38MT type 300 starting motor, 12 volt
- Engine exhaust brake, electronically activated
- The engine shall come with a 5 year/100,000 mile warranty, provided by International.

COOLING SYSTEM

The radiator shall be aluminum, 1228 sq. in with 648 sq. in charge air cooler and 369 sq. in. low temperature radiator down flow, with in-tank transmission oil cooler. The radiator shall include a deaeration tank with surge tank, and sight glass and premium rubber radiator hoses. The cooling system shall be provided with anti-freeze protection to -40 degrees Fahrenheit. Expanded engine temp effects to allow higher engine operating temperature range. Low coolant indicator with audible alarm.

EXHAUST SYSTEM

The exhaust shall be a single aluminized steel horizontal muffler and tailpipe includes a Temperature Control Device. The tail pipe shall exit on the right side ahead of the rear wheel. Aftertreatment device, frame mounted right side. 3-position switch for exhaust, ON/CANCEL, center stable, INHIBIT REGEN, Mounted in IP Inhibits Diesel Particulate Filter Regeneration when switch is Move to ON while engine is running, resets when ignition is turned OFF.

A heat deflector shield shall be provided where the tailpipe is routed under any side compartmentation.

FUEL TANK

A 50 gallon fuel tank shall be mounted right side under cab at the front door. The tank shall be constructed of non polished aluminum and shall include a quick connect outlet. Fuel lines shall be Nylon tubing with O-ring, snap-on, quick connect fittings at both ends.

A fuel/water separator with filter restriction/change indicator shall be provided, includes standard equipment water-in-fuel sensor.

5 U.S. gallon DEF tank, frame mounted outside left rail, under cab.

TRANSMISSION

An Allison 3000EVS automatic 5-speed transmission with overdrive shall be provided. The push button shift control shall be located within easy reach of the driver and shall be indirectly lit for after dark operation. A label shall be provided, within easy view of the driver, to indicate the chassis transmission shift selector position to be used for pumping. Transmission oil cooler shall be a Modine water to oil type. Transmission shift control, push-button type. Synthetic oil shall be furnished.

A 5-year/unlimited miles parts and labor warranty shall be provided as standard by Allison Transmission.

STEERING

The steering shall be a hydraulically driven Sheppard, model M-100, power steering gear. A 2-spoke, 18" diameter, black steering wheel with stationary steering column shall be provided.

BATTERY SYSTEM

A single start battery system shall be provided consisting of three (3) International maintenance free, 12 volt, 1950CCA total batteries mounted in steel battery box with plastic lid. Jump start stud located on the positive terminal of outermost battery. SAE-blade type electrical fuses. Joseph Pollak battery disconnect switch for cab power, lever operated.

Data recorder, includes display mounted in overhead console

ALTERNATOR

The alternator shall be a Leece-Neville 14931 PAH, brush type, 12 volt 320 amp capacity alternator.

CAB

The cab shall be a conventional 2-door cab, engine forward design, constructed of welded steel with fiberglass front tilting hood. Cab accessories shall include:

- Tinted glass in all windows
- Five (5) flush mounted DOT clearance/marker lights
- Deluxe grey interior trim with vinyl upholstery
- Black rubber floor mat
- Soft padded cloth headliner
- Dual sun visors
- Interior grab handle on the "A" pillar on the passenger side
- Interior grab handles (2) on front of "B" pillar mounted one each side
- Electric Windshield washer
- Electric windshield wipers with 2 speed switch integral with turn signal switch with wash and intermittent feature
- Stationary chrome front grille
- Two (2) chrome towel bar type with anti-slip rubber inserts for cab entry, mounted left and right, each side at “B” Pillar
- International Blend-Air heater with defroster
- Two (2) 7.09" x 15.75" Lang Mekra, rectangular mirrors with bright finish heads and brackets, integral convex both sides, 102” spacing, breakaway type, heated heads thermostatically controlled, power both sides, clearance lights LED
- Interior overhead console with driver side door storage pocket

- Interior center mounted dome light, door activated and timed theater dimming
- (2) Padded sun visors integral to the overhead console
- Halogen headlights, composite aero design for two light system, includes daytime running lights
- Cigar Lighter
- Two cup holders located in lower center of instrument panel
- Air bag type rear cab suspension

CAB INSTRUMENTS

The following cab instruments shall be provided:

- Ignition switch - keyless
- Cigar lighter
- Engine oil pressure gauge - electronic
- Odometer display with miles, trip miles, engine hours, trip hours, and fault code readout
- Warning system with low fuel, low oil pressure, high engine coolant temp, low battery voltage (visual and audible)
- Water temperature gauge – electronic
- Tachometer - electronic
- Voltmeter
- Transmission oil temperature gauge
- Air 1 and Air 2, Air pressure gauge located in the instrument cluster
- Fuel gauge – electronic
- IP cluster display with on board diagnostics display of fault codes in gauge cluster

AIR CONDITIONER

The cab shall be supplied with an International Blend-Air air conditioner with integral heater and defroster.

SEATING

The seating capacity in the cab shall be for two (2) personnel. A permanent plate in the driver's compartment shall be installed, specifying that seating for two (2) shall be provided.

The driver’s seat shall be National Model 2000, NFPA compliant, air suspension, high back with integral headrest, vinyl isolator, 2 position front cushion adjust, -3 to +14 degree back angle adjust with 3-point lap and shoulder belt type.

The passenger seat shall be a National Model 2000, NFPA compliant, air suspension, high back with integral headrest, vinyl isolator, 2 position front cushion adjust, -3 to +14 degree back angle adjust with 3-point lap and shoulder belt type.

Seat belt warning prewire includes seat belt switches and seat sensors for all belted positions in the cab and a harness routed to the center of the dash for the aftermarket installation of the Data Recorder and Seatbelt Indicator System for 2 seat belts.

CHASSIS RELATED ITEMS

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:

- Engine oil
- Engine coolant
- Chassis transmission fluid
- Drive axle lubricant
- Power steering fluid
- Pump transmission lubrication fluid
- 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.

CAB SEATING POSITION LIMITS

The label shall also include the seating positions for firefighters. A weight allowance of 250 pounds for each shall be factored into the gross vehicle weight rating of the chassis.

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 TOWING PROVISIONS

There shall be two tow eyes furnished under the rear of the body and attached directly to each chassis frame rail. There shall be a reinforcement spreader bar connecting the two tow eyes. Tow eyes are to be constructed of 3/8" plate steel with a 4" I.D. hole, large enough for passing through a tow chain end hook.

The tow plates shall be painted black.

BUMPER EXTENSION

The chassis frame shall be extended 21" with reinforced steel angle and structural channel by the body builder. The extension shall be designed to support the bumper and other equipment to be installed.

FRONT BUMPER GRAVELSHIELD

A 21" front to rear filler panel constructed from NFPA compliant, slip resistant aluminum tread plate shall be provided on the front chassis frame extension. The extension shall be covered on the top and sides, up to the level of front bumper and shall be reinforced to support one (1) firefighter (approximately 250 pounds) and the equipment specified to be installed.

FRONT BUMPER COMPARTMENT

One (1) recessed fire hose compartment constructed from smooth aluminum shall be installed in the center of the front bumper extension. Water drain holes shall be drilled in the bottom.

BUMPER COMPARTMENT DOOR

One (1) aluminum tread plate door for the front bumper compartment shall be supplied. The flat door shall have a stainless steel hinge at the rear and a latch to secure the compartment.

BUMPER COMPARTMENT DOOR SHOCK

A gas shock shall be supplied to hold the front bumper compartment door in the open position.

COMPARTMENT MATTING

The bumper compartment floor shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking units, 12 x 12 square by 3/4" thick. This material shall be resistant to temperature, ultra-violet radiation, mechanical impacts, chemical actions and corrosion free.

TOW HOOKS

Two (2) tow hooks shall be mounted to the bumper extension under the bumper towards the rearward section of the extension. The tow hooks shall be steel and shall be painted black.

TIRE PRESSURE INDICATOR

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

AIR HORNS

Two (2) Stuttertone chrome plated air horns shall be mounted on the side of the hood of the commercial chassis. An air protection valve shall be provided in the air horn piping that will not allow the chassis air brake system to drop below 90 PSI.

ELECTRIC TRAFFIC HORN AND AIR HORN SELECTOR SWITCH

One (1) selector switch shall be provided on the cab's dash that will allow the chassis steering wheel horn button to activate either the electric traffic horn or air horn system.

AIR HORN FOOT SWITCH

One (1) foot switch shall be installed to activate the air horn system on the officer's side of the floor.

APPARATUS DATA

OVERALL HEIGHT

The overall height for this apparatus shall be approximately 9’6.5”.

OVERALL LENGTH

The overall length for this apparatus shall be approximately 28’4”.

OVERALL WIDTH

The overall width for this apparatus shall be approximately 101”,

WHEELBASE

The wheelbase for this apparatus shall be approximately 195”.

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.

CENTER OF GRAVITY

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

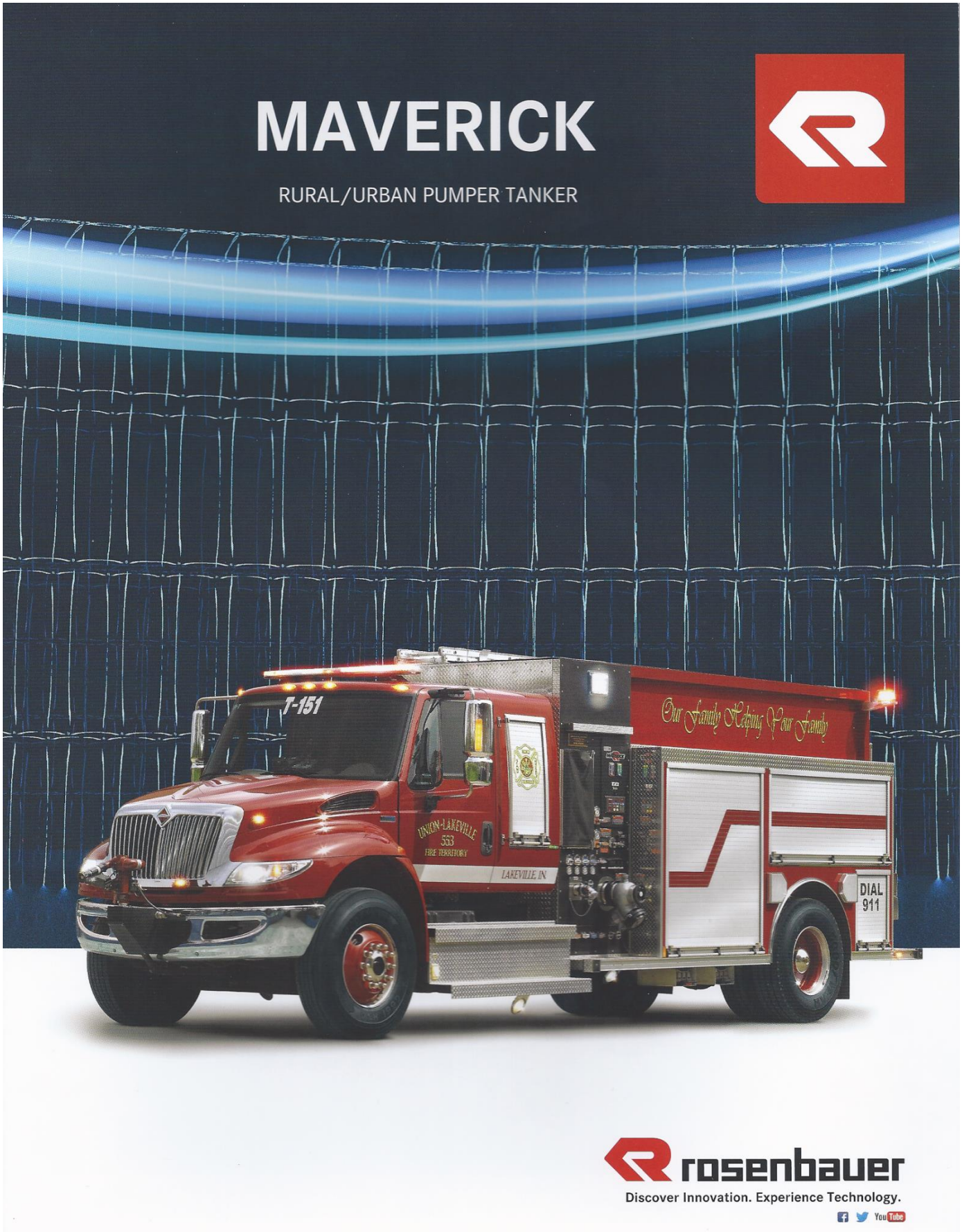
A calculated center of gravity shall be provided. The calculated or measured center of gravity (CG) shall be no higher that 80-percent of the rear axle track width.

DELIVERY

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

MAVERICK

RURAL/URBAN PUMPER TANKER



rosenbauer

Discover Innovation. Experience Technology.

WARRANTIES

BUMPER TO BUMPER WARRANTY

We warrant each new motorized fire apparatus manufactured by ROSENBAUER AMERICA, LLC 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 ROSENBAUER AMERICA, LLC, 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 ROSENBAUER AMERICA, LLC.

ALUMINUM BODY WARRANTY - FIVE YEAR

Rosenbauer America, LLC warrants to the original purchaser only, that the all aluminum body, fabricated by Rosenbauer America, LLC, under normal use and with reasonable maintenance, be structurally sound and will remain free from corrosion perforation for a period of FIVE (5) 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.

ROSENBAUER AMERICA, LLC 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.

Rosenbauer America, LLC 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 Rosenbauer America, LLC elects to repair this body, the extent of such repair shall be determined solely by Rosenbauer America, LLC, and shall be performed solely at the Rosenbauer America, LLC 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.

Rosenbauer America, LLC 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.

Rosenbauer America, LLC will be given a reasonable opportunity to investigate all claims. The purchaser must commence any action arising out of, based upon or relating to 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.

GALVANIZED SUBFRAME WARRANTY

Subject to the provisions, limitations and conditions set forth in this warranty, Rosenbauer America, LLC (hereby referred to as "seller"), hereby warrants to each original purchaser only that each new hot dip galvanized body subframe (exclusive of paint finish and hardware) is structurally sound and free of all structural defects of both material and workmanship and further warrants that it will maintain such structural integrity for the duration of ownership by the original purchaser. This warranty terminates upon transfer of possession or ownership by original purchaser.

This warranty is conditioned upon normal use and reasonable maintenance of such subframe; prompt written notice of all defects to seller or one of the seller's then authorized dealers in the area; no repair or additions there to except by seller or authorized by it; said defect not resulting from misuse, negligence, accident, remount, overloading beyond applicable weight rating by customer or third parties. If any such conditions are not complied with, this warranty shall become void and unenforceable.

Should repairs become necessary under the terms or the warranty, the extent of that repair shall be determined solely by the seller and shall be performed solely at Rosenbauer America, LLC or a repair facility designated by the seller. The expense of any transportation to or from such repair facility shall be that of the purchaser and is not an item covered by this warranty.

Seller reserves the unrestricted right at any time from time to time to make changes in the design of and/or improvements on its products without thereby imposing any obligation on itself to make corresponding changes or improvements in or on its products theretofore manufactured.

EXCLUSIONS AND LIMITATIONS: THIS MANUFACTURER'S WARRANTY IS PROVIDED IN PLACE OF ANY AND ALL OTHER REPRESENTATIONS OR IMPLIED WARRANTIES. NO PERSON IS AUTHORIZED TO MAKE ANY REPRESENTATIONS OR WARRANTY ON BEHALF OF ROSENBAUER AMERICA, LLC OR ANY OF ITS DISTRIBUTORS OTHER THAN SET FORTH IN THIS MANUFACTURER'S WARRANTY. YOUR RIGHT TO SERVICE AND REPLACEMENT OF PARTS ON THE TERMS EXPRESSLY SET FORTH HERIN ARE YOUR EXCLUSIVE REMEDIES AND NEITHER THE MANUFACTURER NOR ANY OF ITS DISTRIBUTORS SHALL BE LIABLE FOR DAMAGES, WHETHER ORDINARY, INCIDENTAL OR CONSEQUENTIAL.

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.

PAINT WARRANTY FIVE YEAR

The PPG paint performance guarantee will cover the areas of the vehicle finished with the specified product for a period of FIVE (5) years beginning the day the vehicle is delivered to the purchaser.

The full apparatus body, manufactured and painted by Rosenbauer America, LLC, shall be covered for the following paint failures as outlined on the guarantee certificate:

- Peeling or delaminating of the topcoat and/or other layers of paint.
- Cracking or checking.
- Loss of gloss caused by cracking, checking, or hazing.
- Any paint failure caused by defective PPG Fleet Finishes, which are covered by this guarantee.

All guarantee exclusions, limitations, and methods of claims are covered in the full certificate provided to the original purchaser.

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.

PUMP WARRANTY

Waterous warrants, to the original buyer only, that products and parts manufactured by Waterous will be free from defects in material and workmanship under normal use and service for a period of five (5) years from the date the product is first placed in service, or five and one half 5-1/2 years from the date of shipment by Waterous, whichever period will be the first to expire; provided the buyer notifies Waterous in writing, of the defect in said product within the warranty period, and said product is found by Waterous to be conforming with the aforesaid warranty.

When required in writing by Waterous, defective products must be promptly returned by the buyer to the Waterous Company at Waterous' plant at South St. Paul, Minnesota, or at such other place as may be specified by Waterous with transportation and other charges prepaid. A returned materials authorization (RMA) is required for all products and parts and may be requested by phone, fax or mail. The previously mentioned warranty excludes any responsibility or liability of Waterous for:

A. Damages or defects due to accident, abuse, misuse, abnormal operating conditions, negligence, accidental causes or improper maintenance, or attributable to written specifications or instructions furnished by buyer;

B. Defects in products manufactured by others and furnished by Waterous hereunder, it being understood and agreed by the parties that the only warranty provided for such products shall be the warranty provided by the manufacturer thereof which, if assignable, Waterous will assign to the buyer, if requested by Buyer;

C. Any product or part, altered, modified, serviced or repaired other than by Waterous, without its prior written consent.

D. The cost of dismantling, removing, transporting, storing, or insuring the defective product or part and the cost of reinstallation.

E. Normal wear items (packing, strainers, filters, light bulbs, anodes, intake screens, etc.)

This warranty is subject to Waterous' conditions of sale (Waterous Company form number F-2190 as currently in effect all of which are herein incorporated and by this reference made a part hereof.

All other warranties are excluded, whether expressed or implied by operation of law or otherwise, including all implied warranties of merchantability or fitness for purpose. Waterous shall not be liable for consequential or incidental damages directly or indirectly arising or resulting from breach of any of the terms of this limited warranty or from the sale, handling, or use of any other product or part. Waterous' liability hereunder, either for breach of warranty or for negligence, is expressly limited at Waterous' option:

A. To the replacement at the agreed point of delivery of any product or part, which upon inspection by Waterous or its duly authorized representative, is found not to conform to the limited warranty set forth above, or

B. To the repair of such product or part, or

C. To the refund or crediting to buyer of the net sales price of the defective product or part.

Buyer's remedies contained herein are exclusive of any other remedy otherwise available to the buyer.

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 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.

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.

MANUALS

COMPLETE PRINTED MANUAL

ROSENBAUER 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 compact disk (CD) 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
- 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, **ROSENBAUER** 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. Rosenbauer America, LLC shall submit with the bid proposal, a sample set of on line 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 **ROSENBAUER** part number to the vendor parts. Example: **ROSENBAUER** 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

ROSENBAUER 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

manufacturers "stripper" (line item listing) of the manufacturing document. **ROSENBAUER** shall submit, upon request, a sample schematic.

Digital Images within Manuals

In addition to two and three-dimensional installation drawings, **ROSENBAUER** 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. **ROSENBAUER** shall submit a sample of these upon request.

Installation Instructions within Manuals

ROSENBAUER "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. **ROSENBAUER** 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.

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

ELECTRICAL SYSTEM / WARNING LIGHTS

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 using 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 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.

WEATHER RESISTANT ELECTRICAL JUNCTION BOX

The 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. The main body junction panel shall be located in the pump compartment.

DASH MOUNTED EMERGENCY ELECTRICAL SWITCH PANEL

An electrical switch panel shall be designed and mounted in the cab dash area. All switches shall be provided with backlighted snap-in legend inserts.

SWITCHES

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.

An internally lighted "master" switch shall be provided and wired through a heavy-duty relay to activate power to the emergency lights.

ENGINE COMPARTMENT LIGHT

One (1) 12 volt LED light with switch shall be mounted in the engine enclosure.

The control switch shall be mounted on the light head.

PUMP ENCLOSURE LIGHTS

One (1) incandescent work light shall be provided in the pump enclosure.

The control switch shall be mounted on the light head.

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 Customer must be installed before the apparatus is placed into service.

VEHICLE DATA RECORDER

Apparatus shall be equipped with a Class1 "Vehicle Data Recorder (VDR) that is connected to the power train CAN (Controller Area Network) bus consisting of transmission (TCM), engine control (ECM) and anti-lock brake (ABS) modules mounted on the apparatus. The VDR will function per NFPA 1901-2009 sections 4.11 (Vehicle Data Recorder) utilizing the power train s J1939 data.

The VDR data shall be downloadable by USB cable to a computer using either Microsoft ™ or Apple ™ Operating Systems using Class 1/ O.E.M. supplied reporting software.

NOTE: The VDR shall only be provided as long as the chassis options include provisions to access vehicle data information.

SEAT BELT WARNING SYSTEM

Apparatus shall be equipped with a Class1 Seat Belt Warning System" (SBW) that is connected to the power train CAN (Controller Area Network) bus consisting of transmission (TCM), engine control (ECM) and anti-lock brake (ABS) modules mounted on the apparatus. The SBW will function per NFPA 1901-2009 14.1.3.10 (Seat Belt Warning) using the Class1 "Seat Belt Input Module" for seat occupied and belt status information.

The SBW system shall have the ability to use either normally open (NO) or normally closed (NC) switches (user selectable by "dip switches" at ground potential) for operation.

NOTE: The SBW system shall only be installed, as long as the chassis manufacturer provides the correct provisions for the installation of the SBW system by the body manufacturer.

SEAT BELT WARNING DISPLAY

A small rocker style display shall be installed in the chassis cab for the seat belt warning system.

MARKER LIGHTS

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

TAIL LIGHTS

One (1) pair of Whelen M6 LED tail/brake lights shall be provided. The rectangular 4"x6" lights shall be red.

TURN SIGNALS

One (1) pair of Whelen M6 LED turn signals with populated sequential chevron arrow shall be provided.

BACKUP LIGHTS

One (1) pair of Whelen Series M6 LED backup lights shall be installed on the rear of the apparatus body. The dimensions shall be 4" x 6" and the lens color shall be clear.

FOUR LIGHT HOUSING

One (1) pair of chrome plated tail light housings shall be supplied. Each housing shall be designed to hold four (4) Whelen M6 rear lights located at the lower rear corners of the body.

CAB GROUND LIGHTS

Two (2) LED ground lights shall be installed on the chassis cab, one under each cab door.

PUMP PANEL GROUND LIGHTS

Two (2) LED ground lights shall be installed under the pump panel running boards. 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.

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.

12VOLT SCENE LIGHTS

Four (4) Strobes N More Model EFlood 7560 LED Flood/Spot Combo lights shall be furnished. The lights shall have a die-cast aluminum black housing, 7560 lumens, 12 volt, approximately 7" wide and 4 inches deep with an adjustable stainless steel mounting bracket.

- **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 LOCATION**

- Two (2) scene light shall be located on the rear of the apparatus body.

- **SCENE LIGHT SWITCHING**

- Four (4) scene light switch with indicator shall be installed on the pump panel to control all scene light(s). The switch shall be labeled "SCENE LIGHTS".

SCENE LIGHT

Two (2) Strobes N More Model Eflood 13000 flood lights shall be furnished one each top of the hose bed. The light shall have a die-cast aluminum housing, produce 12960 lumen dual row hybrid flood/spot combination lightbar. The lightbar shall be approximately26.5" wide x 4" deep.

- **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**

- Two (2) scene light switch with indicator shall be installed on the cab main switch panel to control all scene light(s). The switch shall be labeled "SCENE LIGHTS".

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 295HFS2 electronic siren control head with remote amplifier shall be provided and flush mounted in the switch panel with a location specific to the customer's needs. The siren shall feature 200-watt output, hands free mode and shall be in "standby" mode awaiting instruction. The siren shall offer radio broadcast, public address, wail, yelp, or piercer tones and hands free operation which shall allow the operator to turn the siren on and off from the horn ring if a horn/siren selector switch option is also selected.

SPEAKER

One (1) Federal Signal DynaMax 100-watt speaker, Model #ES100, shall be installed. The speaker shall feature a Neodymium driver and a high strength composite housing that is chemical resistant and maintains rigidity at high temperatures.

A Federal Signal #ESFMT recess mount, stainless steel polished trim ring shall be used to flush mount each speaker.

SPEAKER

One (1) stainless steel grille shall be installed on the speaker.

SPEAKER LOCATION

The siren speaker shall be installed in the center of the apparatus bumper.

FEDERAL MECHANICAL SIREN

One (1) Federal Signal Q2B mechanical siren shall be pedestal mounted onto the front bumper. The "Q" siren shall feature a highly polished chrome body and grille. The siren's distinctive mechanical wail sound shall produce 123 db at 10'. The siren control switches shall be installed in the cab.

SIREN CONTROL

One (1) foot switch shall be provided on the driver's side of the cab floor to activate the Federal Signal Q2B siren.

SIREN CONTROL

One (1) foot switch shall be provided on the officer's side of the cab floor to activate the Federal Signal Q2B siren.

SIREN BRAKE

One (1) push button siren brake to silence the Federal Signal Q2B siren shall be provided on the driver's side dash.

LIGHTBAR

One (1) Whelen Justice series light bar shall be included with the apparatus cab. The light bar shall be a model JE2NFPA and shall be mounted on the roof of the cab, towards the front, above the windshield.

The light bar shall feature:

- A 56" light bar designed for high performance
- Four (4) red Linear Super LED corner modules
- Four (4) red CON3 LED hinged modules
- Two (2) white CON3 LED hinged modules with exterior clear optic lenses
- Clear hard coated lenses to provide extended life/luster protection against UV & chemical stresses
- Designed in accordance with NFPA Zone A requirements

LIGHTBAR ACTIVATION

The front upper light bar activation shall be wired into the master warning switch.

UPPER REAR WARNING LIGHTS

One (1) pair of Whelen Rota-Beam warning lights shall be installed on the upper corners of the rear body. The unit shall have dual rotators with total dimensions of 7" high x 8" deep.

The driver side warning light shall be a Whelen rotator, model RB6TAP with a amber lens.

The officer side warning light shall be a Whelen rotator, model RB6TRP with a red lens.

REAR WARNING LIGHT MOUNTING

The upper rear lights shall be mounted on cast aluminum stanchions attached to the apparatus body, one on each side.

LOWER FRONT WARNING LIGHTS

One (1) pair of Whelen model M6 LED warning lights shall be installed, one each side one the front of the chassis cab. The dimensions of the lights shall be 4-5/16" x 6-3/4".

The driver side warning light shall be a Whelen Model M6R red Super-LED™ with color lens.

The officer side warning light shall be a Whelen Model M6R red Super-LED™ with color lens.

Each light shall be mounted with a Whelen Model M6FC chrome flange.

INTERSECTION WARNING LIGHTS

One (1) pair of Whelen model M6 LED warning lights shall be installed one each side of the chassis cab. The dimensions of the lights shall be 4-5/16" x 6-3/4".

The driver side warning light shall be a Whelen Model M6R red Super-LED™ with color lens.

The officer side warning light shall be a Whelen Model M6R red Super-LED™ with color lens.

Each light shall be mounted with a Whelen Model M6FC chrome flange.

LOWER MID-BODY WARNING LIGHTS

One (1) pair of Whelen model M6 LED warning lights shall be installed , one each side of the apparatus, mid-body. The dimensions of the lights shall be 4-5/16" x 6-3/4".

The driver side warning light shall be a Whelen Model M6R red Super-LED™ with color lens.

The officer side warning light shall be a Whelen Model M6R red Super-LED™ with color lens.

Each light shall be mounted with a Whelen Model M6FC chrome flange.

LOWER REAR SIDE WARNING LIGHTS

One (1) pair of Whelen model M6 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 4-5/16" x 6-3/4".

The driver side warning light shall be a Whelen Model M6R red Super-LED™ with color lens.

The officer side warning light shall be a Whelen Model M6R red Super-LED™ with color lens.

There shall be cast aluminum step light housing provided for the warning lights. The housing shall have a pyramid tread on the top of the housing.

Each light shall be mounted with a Whelen Model M6FC chrome flange.

LOWER REAR WARNING LIGHTS

One (1) pair of Whelen model M6 LED warning lights shall be installed, one each side on the lower rear of the apparatus body. The dimensions of the lights shall be 4-5/16" x 6-3/4".

The driver side warning light shall be a Whelen Model M6R red Super-LED™ with color lens.

The officer side warning light shall be a Whelen Model M6R red Super-LED™ with color lens.

TRAFFIC ARROW LIGHT

One (1) Strobes N More Model E48 Series Super LED traffic advisor shall be furnished on the rear of the apparatus. The unit shall have 32 flash patterns, includes full function control head with LED readout, internal reflector for superior output, 12 volt with a two (2) year warranty. The unit shall be 35.25" wide x 1.57" high x 2.17" deep. The bright E4 series light heads shall be mounted in a sealed ABS extrusion and comes with a switch box with LED flash pattern indicator.

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

BACKUP CAMERA SYSTEM

One (1) Federal Signal model CAMSET70-NTSC-4 rear view safety system shall be furnished utilizing a color high resolution camera for improved picture quality. A cast aluminum sealed camera enclosure shall be utilized along with military type electronic connections. The monitor shall be a CAMLCD-70 7" and include a cable connection assembly.

AM/FM RADIO

One (1) AM/FM stereo radio with Weatherband feature with dual speakers shall be furnished.

PUMP AND CAFS SYSTEM

WATEROUS CXVK SINGLE STAGE PUMP

A Waterous model CXVK fire pump shall be midship mounted, single-stage centrifugal type and shall meet the requirements of the NFPA 1901 standard. The pump must be tested by the pump manufacturer for 10 minutes hydrostatically at a pressure of 350 psig. Certification by the pump manufacturer must be provided.

IMPELLER

The bronze impeller shall be specifically designed for the fire service. The impeller shall be accurately balanced, both mechanically and hydraulically, for vibration free operation. The impeller shaft shall be stainless steel heat-treated and precisely ground to size and supported on both ends by oil or grease lubricated ball bearings.

The wear rings shall be replaceable, bronze, reverse-flow, labyrinth-type. The fire pump shall have deep grove ball bearings located outside the pump to give rugged support and proper alignment to the impeller shaft. Bearings shall be oil or grease lubricated. All pump bearings shall be completely separated from the water being pumped.

PUMP MOUNTING

The pump shall be bolted to steel angles in pump module, using grade 8 bolts.

The midship mounted fire pump shall be mounted with steel angles and channel from the frame using grade 8 bolts, to both the frame and pump to permit removal of the pump for service. The pump shall be equipped with bolt flanges or Victaulic couplings on the suction and discharge side of the pump to provide for removal of fire pump without disturbing piping.

DRIVE LINE

Fire pump shall be driven by a heavy duty 10 bolt PTO capable of enough torque to operate the fire pump at rated capacity for continuous duty. The PTO shall be of a "Hot Shift" style.

Hollow-tube drivelines and universals shall be properly matched to the engine and transmission output torque ratings.

1250 GPM FIRE PUMP SPECIFICATIONS

The centrifugal type fire pump shall be a Waterous model CXK with a rated capacity of 1250 GPM. The pump shall meet NFPA 1901 requirements.

The pump shall be certified to meet the following deliveries:

1250 GPM @ 150 PSI
1250 GPM @ 165 PSI
875 GPM @ 200 PSI
625 GPM @ 250 PSI

LEFT SIDE -- 6" UNGATED INTAKE

One (1) 6" ungated suction intake shall be installed on the left side pump panel to supply the fire pump from an external water supply. The threads shall be 6" NST. The intake shall be provided with a removable screen.

One (1) 6" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped long handles.

RIGHT SIDE -- 6" UNGATED INTAKE

One (1) 6" ungated suction intake shall be installed on the right side pump panel to supply the fire pump from an external water supply. The intake shall be provided with a removable screen.

One (1) 6" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped long handles.

FIRE PUMP MECHANICAL SHAFT SEAL

The Waterous fire pump shall be equipped with self-adjusting, maintenance free, 'mechanical shaft seal' which is designed to be functional in the unlikely event of a seal failure.

IMPELLER HUBS

The Waterous fire pump impeller hubs shall be standard bronze type.

PTO PUMP SHIFT SPECIFICATIONS -- PUMP AND ROLL

An electric powered PTO pump shift shall be installed in the cab driver's area where not subject to accidental engagement.

An rocker switch for PTO pump engagement shall be installed in the cab driver's area. The pump shift system shall permit "pump and roll" operations, as well as stationary pumping operations.

The following indicator lights shall be included with pump shift.

1. A green indicator light, labeled "PUMP ENGAGED" shall indicate pump PTO has successfully been engaged.

2. A green indicator light, labeled "OK TO PUMP" shall indicate the PTO is engaged and parking brake is activated. Pump control is through the pressure governor.

3. A red flashing indicator light, labeled "PUMP & ROLL" shall indicate the PTO is engaged and parking brake is released. Pump control is through the driver's throttle pedal.

4. Pump shift and interlocks shall comply with applicable sections of the NFPA standards.

5. An instruction label and nameplate shall be provided to indicate proper pump engagement instructions.

FIRE PUMP PRIMING SYSTEM

A Waterous model number VPO electrically driven, positive displacement, rotary vane type 'oil less' priming pump shall be installed. The system shall be activated with a push button type control.

The pump shall be capable of taking suction and discharging water with a lift of 10 feet in not more than 30 seconds with the pump dry, through 20 feet of suction hose of appropriate size. The priming system shall comply with applicable sections of the NFPA standards.

PRESSURE GOVERNOR AND ENGINE-PUMP MONITORING

One (1) Fire Research InControl series TGA300 pressure governor and monitoring display kit shall be installed. The kit shall include a control module, intake pressure sensor, discharge pressure sensor, and cables. The control module case shall be waterproof and have dimensions not to exceed 5 1/2" high by 10 1/2" wide by 2" deep. Inputs for monitored information shall be from a J1939 databus or independent sensors. Outputs for engine control shall be on the J1939 databus or engine specific wiring.

The following continuous displays shall be provided:

- Pump discharge; shown with four daylight bright LED digits more than 1/2" high
- Pump Intake; shown with four daylight bright LED digits more than 1/2" high
- Pressure / RPM setting; shown on a dot matrix message display
- Pressure and RPM operating mode LEDs
- Throttle ready LED
- Engine RPM; shown with four daylight bright LED digits more than 1/2" high
- Check engine and stop engine warning LEDs
- Oil pressure; shown on a dual color (green/red) LED bar graph display
- Engine coolant temperature; shown on a dual color (green/red) LED bar graph display
- Transmission Temperature: shown on a dual color (green/red) LED bar graph display
- Battery voltage; shown on a dual color (green/red) LED bar graph display.

The dot-matrix message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information, stored data, and program options when selected by the operator. All LED intensity shall be automatically adjusted for day and night time operation.

The program shall store the accumulated operating hours for the pump and engine to be displayed with the push of a button. It shall monitor inputs and support audible and visual warning alarms for the following conditions:

- High Battery Voltage
- Low Battery Voltage (Engine Off)
- Low Battery Voltage (Engine Running)
- High Transmission Temperature
- Low Engine Oil Pressure
- High Engine Coolant Temperature
- Out of Water (visual alarm only)
- No Engine Response (visual alarm only).

The program features shall be accessed via push buttons located on the front of the control panel. There shall be an USB port located at the rear of the control module to upload future firmware enhancements.

Inputs to the control panel from the pump discharge and intake pressure sensors shall be electrical. The discharge pressure display shall show pressures from 0 to 600 psi. The intake pressure display shall show

pressures from -30 in. Hg to 600 psi.

The governor shall operate in two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between modes. A throttle ready LED shall light when the interlock signal is recognized. The governor shall start in pressure mode and set the engine RPM to idle. In pressure mode the governor shall automatically regulate the discharge pressure at the level set by the operator. In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi. Other safety features shall include recognition of no water conditions with an automatic programmed response and a push button to return the engine to idle.

The pressure governor, monitoring and master pressure display shall be programmed to interface with a specific engine.

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 push-pull 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.

WATER TANK TO PUMP LINE

One (1) 3" water tank to fire pump line shall be provided with a full flow quarter turn ball valve, 3" piping, and with flex hose and stainless steel hose clamps. The tank to pump line shall be equipped with a check valve to prevent pressurization of the water tank.

The line shall be flow tested during the fire pump testing and shall meet applicable requirements of NFPA standards.

The tank to pump valve shall be controlled at the pump operator's panel.

The valve shall be an Akron 8000 Series three-inch (3") valve with a stainless ball.

One (1) Akron valve equipped with a manually operated pull rod, with quarter-turn locking feature shall be provided on the intake. The handle shall be equipped with a color-coded name plate.

FIRE PUMP TO WATER TANK FILL LINE

One (1) 2" 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 2" piping and flex hose to tank. The valve control handle shall have a nameplate located near the valve control.

The valve shall be an Akron 8000 Series two-inch (2") valve with a stainless ball.

One (1) Akron valve equipped with a manually operated pull rod, with quarter-turn locking feature shall be provided on the intake. The handle shall be equipped with a color-coded name plate.

ROWE CAFS / FOAMPRO

ROWE CAFS SYSTEM

One (1) ROWE Industries "Equalizer CAFS" System shall be installed to provide compressed air foam. It shall be capable of providing foam solution or compressed air foam from any of the specified CAFS discharges simultaneously.

COMPRESSOR TYPE

Vanair 200 UDSM PTO Driven air compressor, rotary screw type

CAPACITY

200 CFM free air at 100 psig. Compressor to be capable 200 PSIG operation

COMPRESSOR

Sullair 10 series Powertech design oil flooded rotary screw. The air compressors shall be completely manufactured and assembled in the USA . Air compressor inlet control valve shall be an integral design incorporated in the cast iron housing. No bolt on inlet control valves

INPUT SPEED

Air compressor shall produce 200 CFM at 2075 RPM input speed Ratings per CAGI/PNEUROP PN2CPTC3

GEAR RATIO

Air Compressor gear ratio shall be 3.94:1 to ensure lowest possible engine speed

AIR INTAKE FILTER

Separate two-stage, heavy duty, dry-type air filters shall be provided for air compressor.

AIR RECEIVER

The receiver shall be ASME code approved rated at a 225 psig working pressure. The receiver shall be equipped with an ASME air pressure relief valve located upstream of the final oil separator. The receiver shall be equipped with a fill cap and easily readable sight glass, ¾ inch service valve and a spin-on air compressor oil filter with built in by-pass protection.

AIR/FLUID SEPARATOR

Separator to be located internally in air receiver tank. Separator shall be constructed with a pleated media, welded straps, scrim barrier, support screen, expanded metal outer wrap and internal and external grounding. Vanair separator shall provide for enhanced air quality, reduced operating and maintenance cost and optimized compressor performance.

INSTRUMENT PANEL

Panel to include compressor air pressure gauge, hour meter, compressor oil temperature gauge and over-temperature/over-pressure reset switch.

PROTECTIVE CIRCUIT

Compressor to automatically shutdown in case of high compressor temperature or over pressurization. Additional protective features provided include automatic blow down valve, receiver relief valve and minimum pressure valve.

COOLING SYSTEM

Compressor cooling system shall allow rated air delivery and pressure operation continuously in 125 degree Fahrenheit ambient temperatures. Cooler to be mounted in a powder coated sheet metal enclosure with a suction type fan assembly. (No ABS plastic shrouding) Compressor fluid shall be filtered by a 25 micron full flow spin-on replaceable filter canister. A fan temperature switch shall be provided to regulate compressor cooling. The compressor oil cooler is approximately 14.58" in length, 6.50" in diameter and 7.64" in height.

CONTROLS

Pneumatic inlet control valve shall be integrated into compressor system and automatically modulate output from 0 to 100% in response to air demand

SPEED CONTROL

Electronically controlled engines speed control shall allow modulation of engine speed to match air demand.

DRIVELINES

2 ½ inch 1310 series driveline with universal joint, yoke and companion flange

GENERAL

The compressor shall be manufactured in an ISO 9001 certified quality system.

COMPRESSOR WARNING LIGHT AND HORN

The compressor unit will be supplied with a visual "LED Light" and audible "Horn" compressor warning systems. When these go off, your compressor has either overheated or has over pressurized. If these alarms go off, turn off the compressor to keep from overheating and causing compressur damage.

AIR MANIFOLD

The Rowe CAFS air manifold shall be fabricated from stainless steel and pressure tested by Rowe Industries. Connections will consist of four (4) 1-/2" for 1" and 1-1/2" CAFS discharges, two (2) 3/4" for 2-1/2" CAFS discharges, one (1) 1" air inlet connection and one (1) 1/4" drain connection. The air manifold shall be mounted in the pump compartment area.

One (1) 1/4" standard air chuck shall be furnished and mounted on the side panel for auxiliary air supply.

1.5" ADJUSTABLE EQUALIZER DISCHARGES

A total of three (3) 1-1/2" discharges shall be furnished with the adjustable equalizer to produce CAFS foam. With the Equalizer, the water is separated into 19 individual streams each individual stream is surrounded by 6 air injection points in the low pressure area giving over 100 mixing points. Each shall be plumbed off the foam manifold provided by the body builder.

Each 1.5" CAFS discharge shall include:

> - 1/2" air on/off solenoid valve #1225
> - 1/2" air check valve #VAC008
> - FT150 Equalizer, fabricated from stainless steel with no moving internal parts, #RM0908
> - Potentiometer # RM0702 with #RM0704 mount
> - Valve Piston Ring # RM0703
> - Cable Guide #RM0705
> - Wet to Dry Display #RM0701
> - CAFS / NON CAFS Panel Tag with Selector Switch #1061
> - TFT Flip Tip CAFS nozzle #FTGF36D1S

The two (2) speedlays and the front bumper jumpline shall have CAFS along with the 1" booster reel.

2.5" ADJUSTABLE EQUALIZER DISCHARGES

A total of two (2) 2-1/2" discharges shall be furnished with the adjustable equalizer to produce CAFS foam. With the Equalizer, the water is separated into 62 individual streams with 6 air injection points around each stream giving the 2.5" discharge over 370 mixing points. Each shall be plumbed off the foam manifold provided by the body builder.

NOTE: For 2-1/2" bumper turret discharge and the rear 2-1/2" discharge.

Each 2.5" CAFS discharge shall include:

> - 3/4" air on/off solenoid valve #1282
> - 3/4" air check valve #VAC012
> - EQ1000 - 2-1/2" Equalizer, fabricated from stainless steel with no moving internal parts, #RM0909
> - Potentiometer # RM0702 with #RM0704 mount
> - Valve Piston Ring # RM0703
> - Cable Guide #RM0705
> - Wet to Dry Display #RM0701
> - CAFS / NON CAFS Panel Tag with Selector Switch #1061

WARRANTY

The rotary screw compressor unit air end is warranted for life when adhering to the prescribed maintenance schedule is warranted for twelve (12) months.

FOAM PRO FOAM SYSTEM

One (1) FoamPro part number S105-2002 electronic foam proportioning system shall be provided. The system shall be capable of using Class A and most Class B foam concentrates. 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 digital electronic control display suitable for installation on the pump panel. There shall be a microprocessor incorporated within the electronic controls 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.

Paddlewheel-type flowmeter(s) shall be installed in the discharges specified to be "foam capable". When the use of more than one (1) flowmeter is required, an electronic interface module will be provided to total these flows and send the flow total to the microprocessor in the computer control module.

The digital computer control display shall enable the pump operator to perform the following control and operation functions for the foam proportioning system:

- Provide push-button control of foam proportioning rates from 0.1% to 3%, in 0.1% increments
- Show current flow-per-minute of water
- Show total volume of water discharged during and after foam operations are completed
- Show total amount of foam concentrate consumed
- Simulate flow rates for manual operation
- Perform setup and diagnostic functions for the computer control microprocessor
- Flash a "low concentrate" warning when the foam concentrate tank (s) become low
- Flash a "no concentrate" warning and shut the foam concentrate pump off, preventing damage to the pump, should the foam tank(s) become empty

A 12-volt electric motor driven positive displacement foam concentrate pump shall be provided and installed in an accessible location. The pump capacity range shall be 0.1 to 5 GPM (9.5L/min) at 150 PSI with a maximum operating pressure up to 400 PSI (27.6 BAR). The system shall draw a maximum of 40 amps at 12 volts. An electronic driver for the pump motor shall be mounted to the base of the pump and shall receive signals from the computer control display, and regulate the 3/4 horsepower (.56 Kw) electric motor directly coupled to the concentrate pump in a variable speed duty cycle to ensure that the correct proportion of concentrate, preset by the pump operator is injected into the water stream.

A full flow check valve shall be provided to prevent foam contamination of the fire pump and water tank or water contamination of the foam tank.

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

- Operator control and display
- Paddlewheel flowmeter(s)
- Pump and electric motor/motor driver
- Wiring harnesses
- Low level tank switch
- Foam injection check valve
- Main waterway check valve

The foam system shall be installed and calibrated to 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 FOR FOAM SYSTEM

The FoamPro 2002 Series foam system shall be provided with a twelve (12) foot control cable from the controller to the foam pump assembly.

PUMP PANEL CONTROL FOR FOAM SYSTEM

The FoamPro 2002 Series foam system shall be provided with pump panel mounted control assembly.

INSTRUCTION AND RATING LABEL -- FOAM SYSTEM

A FoamPro part number 6032-0021 instruction and system rating label shall be provided. The label shall display information for a FoamPro 2002 Series foam system and shall meet applicable sections of NFPA standards.

SCHEMATIC LABEL -- FOAM SYSTEM

A FoamPro foam system schematic label shall be installed on the pump panel near foam controls. The label shall be a diagram of the FoamPro 2002 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 -- 30 GALLON

One (1) thirty (30) 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.

FOAM TANK DRAIN -- UNDER TANK

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

FOAM REFILL SYSTEM

One (1) FoamPro Power-Fill, part number 3435-0134, on-board 12 volt electronic, automatic foam concentrate refill system shall be provided. The system shall operate independently of the foam proportioner allowing simultaneous use.

The system shall be capable of handling Class A or Class B foam concentrates, emulsifiers, gels and decontamination concentrates. The apparatus shall be plumbed from the externally accessed intake/flush ports to the on board foam concentrate cell following the recommendations supplied by manufacturer.

An external fill and flush connections shall be supplied with quick-connect, cam-lock fittings. The internal piping shall incorporate check valves to prevent backflow. The concentrate tank inlet shall be positioned to minimize agitation per manufacturer's recommendations. The refill operation shall be designed for direct measurement of concentrate level in tank. The foam concentrate refill system shall utilize the chassis electrical system as a power source and will activate when the master power switch is in the on position.

The system shall be capable of automatically stopping when the cell is full and shall include a manual override feature. The system shall be equipped with an electronic control that shall be installed on the pump panel. Incorporated within the control shall be a microprocessor that receives input from the system while controlling foam concentrate pump output. An all bronze three-way valve shall be included to allow the operator to flush the system after use. Valve control, intake and flush ports shall be located within the corresponding panel plate.

The system shall enable the operator to perform the following control and operational functions with status indicators for the refill operation:

1. Provide push-button start/stop control of foam refill
2. Solid green light advises operator concentrate cell is full
3. Flashing green indicates system is running
4. Green light off, system off
5. Allow override of “full tank” condition
6. Provide a means to flush the pump and intake piping

The system shall include a 12-volt electric motor driven, positive displacement concentrate pump. The pump shall deliver a minimum flow of 10 GPM (37.8 L/min) while operating at 20 PSI. The pump body

shall be of all bronze construction while the other exposed components and piping shall be constructed of non-corrosive materials. The system shall draw a maximum of 38 amps at 12 volts.

A pump/motor solenoid shall be mounted to the base of the pump. It shall receive signals from the computer control display and power the 1/2 horsepower (0.4 Kw) electric motor that shall be directly coupled to the concentrate pump. The system shall receive readings when the concentrate tank is full and shall stop operation to prevent overfill.

Components of the complete refill system shall include:

1. Operator control and display with Weather-Pac connectors
2. Refill/flush quick-connect cam-lock fittings and cap
3. Check valves
4. Pump/motor assembly and solenoid
5. Strainer
6. Tank level switch
7. Three-way fill/flush valve
8. Stainless steel pick-up wand and 6 feet of reinforced suction hose, 1inch in diameter to allow for maximum flow
9. Instruction label provided

An installation and operation manual shall be provided. A one (1) year warranty shall be provided by the refill system manufacturer.

CLASS A FOAM TANK GAUGE

One (1) Fire Research TankVision model WLA260-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 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 aluminum, 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, 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 foam tank vent shall be installed on the foam fill tower. Wiring shall be weather resistant and have automotive type plug-in connectors.

MIDSHIP FIRE PUMP DRIVESHAFTS AND INSTALLATION

The midship PTO fire pump shall be installed and shall include installation of the fire pump, modification and/or fabrication of new drivelines and all pump-mounting brackets. The PTO drive shaft(s) shall be spin balanced prior to final installation.

INTAKE RELIEF/DUMP VALVE

One (1) TFT A18 series, 2-1/2" intake relief/dump valve preset at 125 psi shall be permanently installed on

the suction side of the fire pump. The valve shall have an adjustment range of 75 psi to 250 psi, and shall be designed to automatically self-restore to a non-relieving position when excessive pressure is no longer present.

Discharge side of the intake relief valve shall be plumbed away from the pump operator.

FIRE PUMP COOLING

The fire pump shall be equipped with 3/8" cooling line from the pump to the water tank. This re-circulation line shall be controlled by a pump panel control valve with nameplate label noting it as the "fire pump bypass cooler". There shall be a check valve installed in the pump cooler line to prevent tank water from back flowing into the pump when it is not in use.

CHASSIS ENGINE HEAT EXCHANGER COOLING SYSTEM

The apparatus shall be equipped with a heat exchanger for supplementary chassis engine cooling during fire pump operations. A manually opened valve, mounted at the operator's panel, shall direct water from the fire pump to the heat exchanger that is mounted in the engine radiator cooling hose. The system shall provide cooling water from the fire pump to circulate around the engine radiator coolant without mixing or coming in direct contact with the engine coolant. The complete installation shall be done by the fire apparatus manufacturer.

A nameplate label shall be installed on the pump panel noting "engine cooling system" with "on-off" opening directions noted.

UNDERWRITERS LABORATORIES FIRE PUMP TEST

The pump shall undergo an Underwriters Laboratories Incorporated test per applicable sections of NFPA standards, prior to delivery of the completed apparatus.

The UL acceptance certificate shall be furnished with the apparatus on delivery.

FIRE PUMP TEST LABEL

A fire pump performance and rating label shall be installed on the fire apparatus pump panel. The label shall denote levels of pump performance and testing completed at factory. These shall include GPM at net pump pressure, RPM at such level, and other pertinent data as required by applicable NFPA standards. In addition, the pressure control device, tank to pump flow tests, and other required testing shall be completed.

In addition, the entire pump, suction and discharge passages shall be hydrostatically tested to a pressure as required by applicable NFPA standards. The pump shall be fully tested at the pump manufacturer's factory to the performance specifications as outlined by applicable NFPA standards. Pump shall be free from objectionable pulsation and vibration.

If applicable, the fire pump shall be tested and rated as follows:

100% of rated capacity at 150 pounds net pressure.
70% of rated capacity at 200 pounds net pressure.
50% of rated capacity at 250 pounds net pressure.
100% or rated capacity at 165 pounds net pressure.

HIGH ALTITUDE FIRE PUMP TEST

The pump shall be capable of flowing full pump rating at a higher than standard altitude. The altitude for the delivered apparatus shall be: 400 feet above sea level.

LEFT SIDE -- 2-1/2" GATED INTAKE

One (1) 2-1/2" gated suction intake shall be installed on left side pump panel to supply the fire pump from an external water supply. The control valve shall be a quarter turn ball valve and shall have 2-1/2" NST female thread of chrome plated brass.

The intake shall be equipped with a ¾" drain and bleeder valve. A nameplate label and removable screen shall be installed.

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) 2-1/2" chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain or cable securement.

The valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

The valve shall be equipped with one (1) manually operated, swing-type manual control located adjacent the intake. The valve shall be equipped with a color-coded name plate.

DISCHARGES

2" DISCHARGE FRONT CENTER BUMPER

One (1) 2" discharge shall be installed at front center bumper area with brass swivel outlet with 1-1/2" NST male threads. The valve control shall be on pump panel and a nameplate label provided at valve control area.

The plumbing shall be flexible hose with abrasion resistant support mountings. Auxiliary low point drains shall be provided on the discharge line.

A Class 1 automatic type 3/4" bleeder valve shall be installed.

The hose connection for the front discharge shall be swivel type located above the front bumper deck level.

The specified valve shall be an Akron 8000 Series two-inch (2") valve with a stainless ball.

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed

color-coded label.

One (1) 2-1/2" Noshok discharge pressure gauges (-30-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

TWO (2) 2" SPEEDLAY DISCHARGES

Two (2) 2" pre-connect hose speedlays shall be installed above the pump, controlled with quarter turn 2" diameter ball valves. The outlets shall be equipped 2" NPT female chicksan swivel x 1-1/2" male NST hose threads.

The hosebed decking shall be constructed with a removable slat material.

The hose bed shall provide a minimum capacity of 200 feet of 1-3/4" diameter double jacket hose with hose and nozzle provided by fire department.

A Class 1 automatic type 3/4" bleeder valve shall be installed.

REMOVABLE TRAY FOR PRE-CONNECTED HOSE BEDS

The 1-3/4" pre-connect hosebed(s) shall be equipped with a "U" shaped aluminum hose tray. The unit shall be equipped with pull out hand holes and retaining devices to secure the tray, nozzle, and hose in transit.

The specified valve shall be an Akron 8000 Series two-inch (2") valve with a stainless ball.

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

Two (2) 2-1/2" Noshok discharge pressure gauges (-30-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

LEFT SIDE PUMP PANEL -- 2-1/2" DISCHARGE

One (1) 2-1/2" discharge shall be installed on the left side pump panel area and shall be controlled by a quarter turn ball valve. The discharge shall have 2-1/2" NST male hose threads. A color coded nameplate label shall be provided adjacent 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.

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

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

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

One (1) 2-1/2" Noshok discharge pressure gauges (-30-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

RIGHT SIDE PUMP PANEL -- 2-1/2" DISCHARGE

Two (2) 2-1/2" discharge shall be installed on the right side pump panel area and shall be controlled by a quarter turn ball valve. The discharge shall have 2-1/2" NST male hose threads. A color coded nameplate label shall be provided adjacent 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.

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

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

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

Two (2) 2-1/2" Noshok discharge pressure gauges (-30-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

REAR RIGHT SIDE -- 2-1/2" DISCHARGE

One (1) 2-1/2" discharge shall be installed on the right side rear panel of the apparatus body and shall be controlled by a quarter turn ball valve on the pump panel. The discharge shall have 2-1/2" NPT x 2-1/2" NST male hose threads. The outlet shall be equipped with an engraved nameplate label shall be installed adjacent the valve 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.

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

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

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

One (1) 2-1/2" Noshok discharge pressure gauges (-30-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

FRONT BUMPER MONITOR DISCHARGE

One (1) 2-1/2" discharge shall be piped to the front center bumper area with 2-1/2" NPT male threads. The quarter turn ball valve shall be controlled in the cab. The monitor shall be supplied by a flexible high pressure hose mounted with adequate support brackets and abrasion resistant mountings.

Low point drains shall be installed where necessary. A color coded nameplate label shall be provided.

A Class 1 automatic type 3/4" bleeder valve shall be installed.

ELECTRICALLY REMOTE CONTROLLED MONITOR

One (1) TFT Model Y2-E84A bumper monitor shall be provided. The lightweight monitor shall have a vaned waterway. The monitor shall be equipped with a 12 volt electric motor. The monitor is designed to mount on a front bumper of an apparatus.

The monitor shall have a 2" NPT female inlet with a 1-1/2" NST male outlet. For resistance to corrosion the monitor shall be constructed from hardcoat anodized aluminum with a silver powder coat interior and exterior finish.

One (1) TFT Y4E-JS joystick control for front monitor shall be installed.

REMOTE ELECTRIC NOZZLE TIP

Task Force Tips Ultimatic 125, model # B-TOS-ERP adjustable nozzle with electrically operated pattern control shall be provided. The nozzle design shall allow for straight stream through dense wide fog patterns and be able to be flushed without shutting down.

The electric drive unit shall develop over 400 pounds of torque, be enclosed in a waterproof cast aluminum housing and include a manual override device in the event the power source fails. The unit shall be compatible with 12 or 24 volt power systems and require no more than a 3 amp power draw and include a 6" connection cable with plug.

Nozzle stream shaper actuator shall have position encoder for smooth transition between straight stream and fog pattern with fine stream adjustment. Nozzle stream shaper shall stop and pause at full fog position. A second electrical actuation of the stream shaper shall move the shaper to the flush position for removing debris from the nozzle.

For corrosion resistance and durability the nozzle shall be constructed from hardcoat anodized aluminum alloy, a protective rubber bumper with fog teeth, laser engraved serial number, reflective labeling and five year warranty.

The nozzle shall have a 1-1/2" female NH swivel rocker lug coupling and a user adjustable flow range of 15-120 GPM at 100 PSI. A waterproof six-pin electrical connection for use with TFT remote control monitors shall be included. The nozzle shall be designed to accept the TFT FJ-U or FJ-UMX FoamJet low expansion air aspirating attachments.

One (1) 2-1/2" diameter Class 1 discharge pressure gauges (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located in the chassis cab.

ELECTRIC REWIND HOSE REEL

One (1) Hannay painted steel hose reel with leak proof ball bearing swing joint, adjustable friction brake, electric rewind shall be installed. The reel shall be plumbed with wire reinforced, high-pressure hose coupled. The reel shall be bolted to a mounting system for easy service or removal.

The hose reel is to be mounted in the upper rear body compartment.

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.

One (1) 1" discharge shall be provided and piped from the fire pump to the hose reel with flexible high pressure hose. The quarter turn ball valve shall be controlled on pump panel. A color-coded nameplate label shall be provided near the valve 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.

The specified hose reel shall be piped to the normal pressure side of the fire pump.

One (1) Akron 8000 Series one-inch (1") valve with a stainless ball shall be supplied.

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

One (1) 2-1/2" Noshok discharge pressure gauges (-30-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

Three (3) 50' foot lengths of 1" water hose (150') with pin lug couplings and 800 PSI working pressure shall be provided and mounted on the specified hose reel.

One (1) stainless steel four sided captive type roller assembly shall be provided. The location of the captive rollers shall be:

HOSE REEL PAINTING

The hose reel(s) shall be painted silver grey.

PUMP HOUSE

SIDE MOUNT PUMP ENCLOSURE

All pump suction and discharge controls are to be mounted on the driver side pump operator's panel so as to permit operation of the pump from a central location. The control panel shall be located at the front of the apparatus body, on the left side. Panel shall house pressure gauge and controls for the pump, including throttle if specified. Panel shall have an anodized aluminum shield with adequate illumination for nighttime operation. The lights shall be controlled by the operator's panel light switch. The valve controls shall be neatly arranged for access and visibility. All controls shall be clearly marked with permanent type labels and color-coded. The electrical wiring and all gauge lines shall be properly tie wrapped to prevent kinking or cutting of the lines.

The following controls and equipment shall be provided on the pump panel or within the pump enclosure:

- Primer.
- Pump and plumbing area service lights.
- Pressure control device and throttle control.
- Fire pump and engine instruments.
- Pump intakes and discharge controls.
- Master intake and discharge gauges.
- Tank fill control.
- Tank suction control.
- Water tank level gauge.
- Pump panel lights.

OPEN DUNNAGE COMPARTMENT -- OVER PUMP ENCLOSURE

One (1) open compartment shall be located on the top of the pump module. The compartment will be constructed as large as space permits with removable slip resistance floor material or decking in the base of the compartment.

LEFT SIDE RUNNING BOARD -- SIDE MOUNT PANEL

The left side mount pump panel shall be equipped with side running board. The running board will extend along the width of the pump enclosure from the forward end of the body module to behind the chassis cab.

The running board shall be constructed of aluminum tread plate, bolted in place with stainless steel fasteners. The step surfaces shall be in compliance with applicable sections of NFPA requirements.

RIGHT SIDE RUNNING BOARD -- SIDE MOUNT PANEL

The right side mount pump panel shall be equipped with side running board. The running board will extend along the width of the pump enclosure from the forward end of the body module to behind the chassis cab.

The running board shall be constructed of aluminum tread plate, bolted in place with stainless steel fasteners. The step surfaces shall be in compliance with applicable sections of NFPA requirements.

PUMP ENCLOSURE ACCESS DOOR -- RIGHT SIDE UPPER

A pump panel access door shall be provided on the upper right side of the side mount pump enclosure. The access door shall be approximately 18" high and as wide as possible. The door shall be constructed of aluminum tread plate with push button type latches.

PUMP PANEL -- SIDE MOUNT

The pump operator's panel, along with the lower left hand and right hand pump panels shall be constructed of black thermoplastic coating aluminum material and be fastened to the pump enclosure with 1/4" stainless steel bolts.

The instrument area shall have a stainless steel continuous hinge that shall swing for easy access to gauges.

LEFT SIDE PUMP PANEL -- BOLTED

The pump panel installed on the left hand side of the pump enclosure shall be fastened to the pump enclosure with 1/4" stainless steel bolts.

RIGHT SIDE PUMP PANEL -- BOLTED

The pump panel installed on the right hand side of the pump enclosure shall be fastened to the pump enclosure with 1/4" stainless steel bolts.

PUMP PANEL COLOR TRIM PANELS

Innovative Controls intake and discharge trim rings shall be installed to the apparatus with mounting bolts. These bezel assemblies will be used to identify intake and discharge ports with color and verbiage. These trim rings are designed and manufactured to withstand the specified apparatus service environment and shall be backed by a warranty equal to that of the exterior paint and finish. The specified assemblies feature

a chrome-plated panel-mount bezel with durable UV resistant polycarbonate inserts. These UV resistant polycarbonate graphic inserts shall be sub-surface screen printed to eliminate the possibility of wear and protect the inks from fading. All insert labels shall be backed with 3M permanent adhesive (200MP), which meets UL969 and 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.

MIDSHIP PUMP PANEL LIGHTS -- LEFT SIDE

Three (3) Weldon #2025 or equal lights with clear lenses shall be installed under an instrument panel light hood on the left side pump panel. The lights shall be controlled by a switch located on the operator's instrument panel.

MIDSHIP PUMP PANEL LIGHTS -- RIGHT SIDE

Two (2) Weldon #2025 or equal lights with clear lenses shall be installed under an instrument panel light hood on the right side pump panel. The lights shall be controlled by a switch located on the operator's instrument panel.

PUMP ENGAGED LIGHT

One (1) pump panel light shall be illuminated at the time the fire pump is engaged into operation. The remaining lights shall be controlled by a switch located on the operator's instrument panel.

MASTER DISCHARGE AND INTAKE GAUGES

Two (2) 4" diameter Noshok discharge pressure and intake gauges (30"-0-600 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

The master gauges shall have clear scratch resistant molded crystals with captive O-ring seals shall be used to ensure distortion free viewing and to seal the gauge. The gauges shall be filled with a synthetic mixture to dampen shock and vibration, lubricate the internal mechanisms, prevent lens condensation and ensure proper operation from –40°F to +160°F. Each gauge shall exceed ANSI B40.1 Grade A requirements with an accuracy of +/- 1.5% full scale and include a size appropriate phosphorous bronze bourdon tube with a reinforced lap joint and large tube base to increase the tube life and gauge accuracy. A polished chrome-

plated brass bezel shall be provided to prevent corrosion and protect the lens and gauge case.

TEST TAPS

Test taps for pump intake and pump pressure shall be provided on the pump instrument panel and be properly labeled.

WATER TANK GAUGE

One (1) Fire Research TankVision model WLA200-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 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 aluminum, 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, 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 place on the interior of the tank. Wiring shall be weather resistant and have automotive type plug-in connectors.

WATER TANK LEVEL LIGHTS

Three (3) Whelen PS-TANK vertically mounted LED lights shall be installed one each side of the apparatus and one (1) on the rear to allow for monitoring the water tank level from a distance.

They shall be configured as follows:

- GREEN - Position 1 indicates FULL
- BLUE - Position 2 indicates 3/4
- AMBER - Position 3 indicates 1/2
- RED - Position 4 indicates 1/4

Each light shall remain illuminated until the water level drops below full 3/4, 1/2, or 1/4 levels. When the level drops below 1/4 the RED light will flash to indicate an empty tank. The Whelen PS-TANK water tank level lights shall be controlled with a Fire Research Corporation TankVision remote driver.

BOOSTER TANK

WATER TANK - 1500 GALLON

The apparatus shall be equipped with a one thousand five-hundred (1500) gallon polypropylene water tank. The tank shall be equipped with a four-inch (4") overflow pipe (a six-inch (6") overflow pipe shall be provided if required by dump valve installation).

WATER TANK

The apparatus shall be equipped with a "T" shaped tank.

WATER TANK FILL TOWER

A fill tower measuring approximately 10” x 10” square shall be provided on the water tank up to and including 1500 gallons total capacity.

The apparatus shall be equipped with a polypropylene water tank. The tank body and end bulkheads shall be constructed of .75" thick, polypropylene, nitrogen-welded and tested inside and out. Tank construction shall conform to applicable NFPA standards. The tank shall carry a lifetime warranty.

The transverse and longitudinal .375" thick swash partitions shall be interlocked and welded to each other as well as to the walls of the tank. The partitions shall be designed and equipped with vent holes to permit air and liquid movement between compartments.

The .5" thick cover shall be recessed .375" from the top of the side walls. Hold down dowels shall extend through and be welded to both the covers and the transverse partitions, providing rigidity during fast fill operations. Drilled and tapped holes for lifting eyes shall be provided in the top area of the booster tank.

A combination vent/water fill tower shall be provided at front of the tank. The 0.5" thick polypropylene fill and overflow tower shall be equipped with a hinged lid and a removable polypropylene screen. The overflow tube shall be installed in fill tower and piped with a minimum schedule 40 PVC pipe through the tank.

The water tank sump shall be located in the forward area of the tank. There will be a schedule 40 polypropylene tank suction pipe from the front of the tank to the tank sump. The tank drain and clean out shall be located in the bottom of the tank sump. The sump shall have a minimum 3" threaded outlet on the bottom to be used for a combination clean out and drain.

The pump to tank refill connection shall be a sized to mate with tank fill discharge line. A deflector shield inside the tank will also be provided.

The tank shall rest on the body cross members in conjunction with such additional cross members, spaced at a distance that would not allow for more than 530 square inches of unsupported area under the tank floor. In cases where overall height of the tank exceeds 40 inches, cross member spacing must be decreased to allow for not more than 400 square inches of unsupported area.

The tank must be isolated from the cross members through the use of hard rubber strips with a minimum thickness and width dimension of 1/4” x 1” and a hardness of approximately 60 durometer. The rubber must be installed so it will not become dislodged during normal operation of the vehicle. Additionally, the tank must be supported around the entire bottom outside perimeter and captured both in the front and rear as well as side to side to prevent tank from shifting during vehicle operation.

A picture frame type cradle mount with a minimum of 2" x 2" x 1/4” mild steel, stainless steel, or aluminum angle shall be provided or the use of corner angles having a minimum dimension of 4" x 4" x 1/4” by 6” high are permitted for the purpose of capturing the tank.

Although the tank is designed on a free floating suspension principle, it is required that the tank have adequate vertical hold down restraints to minimize movement during vehicle operation. If proper retention has not been incorporated into the apparatus hose floor structure, an optional mounting restraint system shall be located on top of the tank, half way between the front and the rear on each side of the tank. These stops can be constructed of steel, stainless steel or aluminum angle having minimum dimensions of 3" x 3" x 1/4” and shall be approximately 6” to 12” long. These brackets must incorporate rubber isolating pads

with a minimum thickness of 1/4” inch and a hardness of 60 durometer affixed on the underside of the angle. The angle should then be bolted to the body side walls of the vehicle while extending down to rest on the top outside edge of the upper side wall of the tank.

Hose beds floors must be so designed that the floor slat supports extend full width from side wall to side wall and are not permitted to drop off the edge of the tank or in any way come in contact with the individual covers where a puncture could occur. Tank top must be capable of supporting loads up to 200 lbs per sq. foot when evenly distributed. Other equipment such as generators, portable pumps, etc. must not be mounted directly to the tank top unless provisions have been designed into the tank for that purpose. The tank shall be completely removable without disturbing or dismantling the apparatus structure.

The tank construction shall include PolyProSeal™ technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method shall provide a liquid barrier, offering leak protection in the event of a weld compromise.

The tank shall be equipped with Polychromatic fill towers. The water fill tower shall be blue in color. The foam tank fill towers, if applicable, shall be yellow for foam A and green for foam B and black for any additional foam fill towers.

The water tank shall be certified for the capacity of the water tank prior to delivery of the apparatus. This capacity shall be recorded on the manufacturer's record of construction and the certification shall be provided to the purchaser when the apparatus is delivered.

The tank shall be manufactured by United Plastic Fabricating (UPF).

DIRECT TANK FILL

One (1) 2-1/2" diameter direct tank fill inlet shall be provided, including a 2-1/2" female NH swivel, plug and screen.

The valve shall be located and controlled on the left side rear of body.

The valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.

The valve shall be equipped with one (1) manually operated, swing-type manual control located adjacent the intake. The valve shall be equipped with a color-coded name plate.

TANK FILL ELBOW

The direct tank fill shall be equipped with a 30-degree elbow and a 3/4" drain.

The direct tank fill inlet shall include a 2-1/2" female NH swivel, plug and screen.

QUICK DUMP - REAR

One (1) Newton 10" quick dump valve shall be provided and externally mounted. The location shall be at the center rear of the apparatus.

One (1) manual operated lever control shall be used to open and close the rear dump valve.

The Newton dump valve installed on the water tank shall be painted grey.

One (1) swivel dump shall be fabricated with .125” aluminum and attached to the Newton Quick Dump. The swivel dump shall have the ability to dump water from the driver’s side or the officer’s side and any point in between. The swivel dump is 70 inches long when fully extended. The swivel dump shall have an extension that is hinged and can be folded up when the dump is not in use. The dump shall have the ability to be stowed on either the driver’s side or the officer’s side of the truck. The latch that holds the extension in the stowed position shall also help support the swivel dump extension.

When the extension is in the down and extended position, there shall be no less than a 34 inch clearance from level ground to the bottom of the dump to ensure that there is enough clearance for the swivel dump to offload into all portable drop tanks.

The dump shall meet NFPA requirements for water delivery on three sides of the vehicle.

APPARATUS BODY

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 a minimum of 55 cubic feet of fire department supplied fire hose.

The hose bed shall be designed to have storage capacity for four (4) 50-ft lengths of 2.5” Double Jacket fire hose.

The hose bed shall be designed to have storage capacity for six (6) 50-ft lengths of 3” Double Jacket fire hose.

The hose bed shall be designed to have storage capacity for five (5) 100-ft lengths of 5” LDH Single Jacket rubber fire.

ALUMINUM HOSEBED DIVIDER

Two (2) adjustable hosebed divider constructed of .250" aluminum shall be installed on the apparatus.

VINYL HOSEBED COVER

The apparatus shall be equipped with a vinyl hosebed cover.

The cover, approximately 74” wide, shall be secured utilizing a velcro fastening system at the front and sides of the hosebed body.

The vinyl cover shall be red in color.

1/8" 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 the 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.

Compartment floors shall be of the sweep out design with the floor higher than the compartment door lip 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. To fully protect the wheel well area from road debris and to aid in cleaning, a full depth radius wheel well liner shall be provided. 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 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 aluminum treadplate material.

GALVANIZED SUB-FRAME

The apparatus body subframe shall be constructed entirely of heavy steel structural channel material.

Two full frame lengths, three-inch (3") 3.4 pound per foot longitudinal steel channels shall form the sides of the body subframe and sides of the water tank cradle. Subframe crossmembers shall be fabricated with three inch (3") 3.4 pound per foot heavy steel channel cross members welded to the longitudinal body subframe sides and the full length frame pads.

Two full frame length 1/2" x 3" flat steel frame pads shall be attached to the body subframe and rest on top of the chassis frame rails for proper frame weight distribution.

The steel frame pads, longitudinal steel channels and 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 rear subframe and lower body platform support members shall be of the "two piece" design, fabricated of 3.4 lb. Per foot heavy channel and welded to the full length subframe channel liners at the rear.

A minimum of two rear platform support channels shall be provided and constructed of 3.4 lb. Per foot heavy steel material. Each support channel shall have welded in gusset where the support meets the rear subframe rails.

After fabrication the entire subframe assembly shall be hot dip galvanized to prevent corrosion. The hot dip galvanized subframe shall have a lifetime warranty against failure due to corrosion.

This steel subframe shall carry the weight of the apparatus body, tank, water and equipment. This method of apparatus construction gives an excellent strength/weight ratio.

BODY CONFIGURATION

The aluminum apparatus body shall be up to 220" long, reference the drawing for actual body length.

SINGLE AXLE WHEEL AREA

For ease of accessibility and maintenance, wheel well panels shall be double break formed painted smooth plate that is welded in place.

To fully protect the wheel well area from road debris and to aid in cleaning, a full depth (minimum of 25") radius wheel well liner shall be provided. Wheel well liner shall be smooth aluminum 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.

BODY WIDTH

The overall width of the pumper body shall not exceed 102".

COMPARTMENT DEPTH

The left side compartments on the pumper body shall have the following dimensions:

Lower portion depth of 26"
Upper portion depth of 13"

The lower right side compartments on the pumper body shall be 26" deep.

HOSEBED WIDTH

The width of the pumper body hosebed shall be 74".

COMPARTMENT HEIGHT

The left side body compartments shall be 66" high.

COMPARTMENT HEIGHT

The right side body compartments shall be 30" high.

ROLL UP DOOR CONSTRUCTION

The roll up door(s) shall be fabricated from aluminum extrusions and be manufactured and assembled in the United States.

The door slats shall be double-wall extrusions with dimensions of 1.366" high x .315" thick. The exterior surface shall be flat and the interior surface concave to deflect loose equipment to prevent the door from jamming. Each slat shall have interlocking end shoes to prevent the slat from moving side to side resulting in binding of the door. Each slat shall be separated by a co-extruded PVC and rubber inner seal to prevent metal to metal contact and minimize dirt and moisture from entering the compartment. The inner seal shall not be visible from the exterior to maintain a clean appearance of door. The slats shall have interlocking joints with a folding locking flange to provide security and prevent penetration by sharp objects.

The track shall be a one (1) piece aluminum assembly that has an attaching flange and finishing flange incorporated into the design that facilitates installation and provides a finished look to the door without additional trim or caulking. A low profile side seal shall be utilized to maximize usable compartment space.

A drip rail designed to prevent water from dripping into the compartment shall be provided. The drip rail shall have a built in replaceable non-contacting seal to eliminate scratching of the surface of the door.

Bottom rail extrusion must have smooth back to prevent loose equipment from jamming the door and have "V" shaped double seal to prevent water and debris from entering the compartment. The door latch system shall be a full width one (1) piece lift bar that enables the user to operate with one hand.

The roll mechanism shall have a clip system that connects the curtain slats to the operator drum to allow for easy tension adjustment without tools. A four (4) inch diameter counterbalanced operator drum to shall be incorporated to assist in lifting the door.

LEFT FRONT COMPARTMENT

There shall be one (1) full height compartment located ahead of the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door. The compartment shall be approximately 59" wide x 66" high x 26" deep in the lower area and 13" deep in the upper area.

The compartment shall be equipped with the following:

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.

COMPARTMENT LIGHT

One (1) incandescent light fixture shall be installed in the compartment, mounted on the wall of the compartment. The compartment light shall have a clear lens.

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

LEFT OVERWHEEL COMPARTMENT

There shall be one (1) compartment above the rear wheels. The compartment shall be equipped with a single natural finish roll up door. The compartment shall be approximately 91" wide x 36" high x 13" deep.

The compartment shall be equipped with the following:

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.

COMPARTMENT LIGHT

One (1) incandescent light fixture shall be installed in the compartment, mounted on the wall of the compartment. The compartment light shall have a clear lens.

The compartment light will be controlled by an automatic "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 low single natural finish roll up door. The compartment shall be approximately 29" wide x 30" high x 26" deep.

The compartment shall be equipped with the following:

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.

COMPARTMENT LIGHT

One (1) incandescent light fixture shall be installed in the compartment, mounted on the wall of the compartment. The compartment light shall have a clear lens.

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

RIGHT FRONT COMPARTMENT

There shall be one (1) low compartment located ahead of the rear wheels. The compartment shall be equipped with a low single natural finish roll up door. The compartment shall be approximately 59" wide x 30" high x 26" deep.

The compartment shall be equipped with the following:

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.

COMPARTMENT LIGHT

One (1) incandescent light fixture shall be installed in the compartment, mounted on the wall of the compartment. The compartment light shall have a clear lens.

The compartment light will be controlled by an automatic "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 low single natural finish roll up door. The compartment shall be approximately 29” wide x 30” high x 26” deep.
The compartment shall be equipped with the following:

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.

COMPARTMENT LIGHT

One (1) incandescent light fixture shall be installed in the compartment, mounted on the wall of the compartment. The compartment light shall have a clear lens.

The compartment light will be controlled by an automatic "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 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.

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

EXTERIOR LADDER MOUNTING

Exterior ladder mountings shall be provided for the specified ladders on the passenger side of the apparatus body.

LADDER MOUNT LOCATION

The location of the ladder mounting assembly shall be located on the right hand side of the apparatus body.

EXTERIOR FOLDING ATTIC LADDER MOUNTING

An exterior mounting shall be provided for the specified folding attic ladder.

LADDER SOURCE

New ground ladders shall be provided by the body builder.

PIKE POLE/ATTIC LADDER COMPARTMENT

A compartment shall be provided in the "T" of the water tank. A hinged rear access door constructed of aluminum diamond plate shall be provided with quarter turn latch mechanism.

PIKE POLE SOURCE

The pike poles shall be provided by the body builder.

HARD SUCTION MOUNTING

Two (2) horizontally mounted aluminum hard suction hose tray with velcro straps shall be provided above the left side body compartments.

SUCTION HOSE SOURCE

New suction hose shall be provided by the body builder.

PORTABLE WATER TANK MOUNTING SYSTEM

There shall be one (1) ZICO Quic-lift, electrically operated folding tank storage carrier provided on the passenger side of the booster tank and above the lower compartments to carry a portable folding tank. The tank carrier shall hold the folding tank in the vertical position for travel, and fold down over the lower body side for loading and unloading. The folding tank carrier shall have two high strength aluminum casting sets and dual Warner 12-volt linear actuators. The linear actuators shall be controlled with a weather-tight momentary switch located on passenger side of the body. There shall be a reinforcement plate installed on the compartment top where the folding tank carrier is attached. The Quic-lift system shall be capable of being lowered manually in the event of electrical failure.

The folding tank storage carrier shall be provided with a smooth aluminum cover enclosing the folding tank, painted to match the body.

FOLDING TANK SOURCE

New folding tank shall be provided by the body builder.

FOLDING STEPS LEFT SIDE FRONT

Four (4) folding steps 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 left side front compartment face.

FRONT BODY PROTECTION PANELS

Aluminum tread plate overlays and panels shall be installed on the front corners of the body. The material shall be bolted in place and sealed to prevent any moisture entry between the overlay and the body structure.

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 STEPS LEFT SIDE REAR

Four (4) folding steps 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 steps shall be installed on the rear left side of the body.

FOLDING STEPS RIGHT SIDE REAR

Two (2) folding steps 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 steps 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.

HANDRAIL BELOW HOSEBED

One (1) extruded aluminum non-slip handrail, approximately 48” in length, shall be provided and horizontally mounted below the hosebed on the rear of the apparatus.

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 rubrail and the body. This shall allow wash out and replacement in the event of damage.

WHEEL WELL PROVISION LOCATION

The wheel well provisions shall be located on the left side of the apparatus, behind of the rear wheels.

One (1) breathing air cylinder storage compartment for four (4) SCBA cylinders (not supplied) shall be provided and located in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be provided with a gasket between door and body side, bolted in-place and removable for repair or replacement.

Compartment shall be provided with SCBA cylinder scuff protection. A painted aluminum door shall be installed.

Four (4) one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

WHEEL WELL PROVISION LOCATION

The wheel well provisions shall be located on the right side of the apparatus, behind of the rear wheels.

Two (2) fire extinguisher storage compartment shall be provided in the rear wheel well area. The compartment shall be designed with ample room for the specified extinguisher. A painted aluminum door shall be installed.

Two (2) one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

PAINT, LETTERING, STRIPING

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.

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 first coating to be applied is a pre-treat self etching primer (PPG DX1787) (.5 to 1.0 dry film build) for maximum adhesion to the body material. The next two to four coats (depending on need) shall be an acrylic urethane primer surfacer (PPG K36). 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.

INTERIOR COMPARTMENT FINISH

Six (6) 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 top coat.

WHEEL PAINTING

The exterior faces of the front wheels and outer rear wheels only, shall be finish painted to match the apparatus body. Wheels shall be properly prepared and finished with primer coats and top coats as specified.

TOUCH-UP PAINT

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

SCOTCHLITE REFLECTIVE LETTERING

The lettering shall be applied with Scotchlite reflective material, shaded in black.

A quantity of seventy-five (75), four (4) inch letters are to be placed on the cab and on the body as directed by fire department.

SCOTCHLITE REFLECTIVE LETTERING

The lettering shall be applied with Scotchlite reflective material, shaded in black.

A quantity of fifty (50) letters are to be placed on the cab and on the body as directed by fire department. The letters shall be between eight and twelve inches in height.

APPARATUS DOOR GRAPHICS

Two (2) custom door graphics designed primarily with artistic features shall be proposed for installation on the apparatus.

REFLECTIVE STRIPING

A 1" x 6" x 1" wide 3M brand Scotchlite 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 "Z" 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 amber 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.

REFLECTIVE STRIPE

Reflective striping shall be installed on the interior of each chassis door. The lower portion of the doors shall have red and amber Chevron applied to it that matches the rear of the apparatus. A matching reflective stripe shall be applied on the vertical outer edge of the door.

OTHER EQUIPMENT

ROOF LADDER

One (1) Alco-Lite Model PRL-14, 14 foot aluminum roof ladder with folding steel roof hooks on one end and rubber safety shoes on the other end shall be provided on the apparatus. The ladder shall meet or exceed all latest NFPA Standards.

EXTENSION LADDER

One (1) Alco-Lite Model PEL-24, 24 foot two (2) section aluminum extension ladder shall be provided on the apparatus. The ladder shall meet or exceed latest NFPA standards.

FOLDING ATTIC LADDER

One (1) Alco-Lite Model FL-10, 10 foot folding aluminum attic ladder shall be provided. The ladder shall meet or exceed all the latest NFPA Standards.

PIKE POLE

Two (2) 6' pike pole with round handle shall be provided. The pike pole shall be of fiberglass construction.

PIKE POLE

Two (2) 8' pike pole with round handle shall be provided. The pike pole shall be of fiberglass construction.

PIKE POLE

Two (2) 10' pike pole with round handle shall be provided. The pike pole shall be of fiberglass construction.

SUCTION HOSE

Two (2) 6.0" x 10 foot length of PVC flexible suction hose shall be supplied. The suction hose shall have light weight couplings provided.

HOSE COUPLINGS

Lightweight aluminum couplings shall be provided on the suction hose. A long handle female swivel shall be provided on one end and a rocker lug male shall be provided for the other end.

FOLDING PORTABLE WATER TANK

One (1) 2100 gallon, 22 oz vinyl, portable water tank shall be provided. The tank shall include an aluminum support frame.

LOOSE EQUIPMENT TO BE FURNISHED BY DACO FIRE EQUIPMENT:

ITEM DESCRIPTION	VENDER AND PART NUMBER	QUAN.
6# Flat Head Axe with 36” Fiberglass Handle	AKRON FHY-6	2
6# Pick Head Axe with 36” Fiberglass Handle	AKRON PHY-6	2
Axe Blade Bracket For Horizontal Mounting	AKRON AS-510	4
Axe Handle Bracket	AKRON AS-520	4
6" LOW LEVEL STRAINER	KOCHEK LL60	1
6" BARREL STRAINER	KOCHEK BS60	1
TRASH HOOKS, 6' Round Handle	Darley BL92603	2
HOOLIGAN BARS 30"	Darley AZ393	2
RUBBER MALLETS, 2 LB.	Darley A311	2
SAFETY CONES 18"	Darley T445	5
20 LB. ABC FIRE EXTINGUISHER	Darley AF567	1
15 LB. CO-2 FIRE EXTINGUISHER	Darley H792	1
SCBA BRACKETS FOR 60 MIN CYLINDERS	Darley AR045	4
PELICAN FLASHLIGHTS W/CHARGERS	Darley Big Ed AS005	2
FIRE PUBLICSAFEETY VEST	Darley BG516	4
FIRST AID KIT	Darley AG100	1
Set Triple Holder (1) K08 Storz Hyd, (2) K01 spanner	Kochek K49-3	4

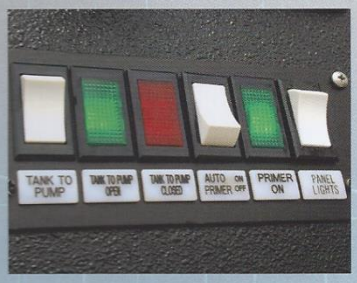
PAGE REVISED 11/16/2015 – ADDED WRENCH SETS

MAVERICK

RURAL/URBAN PUMPER TANKER

AUTOMATIC PRIMER ROSENBAUER EXCLUSIVE

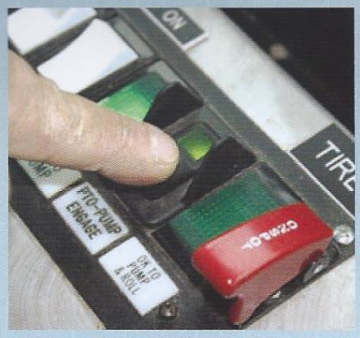
The hands-free automatic primer allows operator to assist with other tasks, and it can run for extended periods without causing damage or draining the battery. This unit automatically re-primes if the prime is lost.



UP TO 1,250 GPM

1,250 GPM

The Maverick has good ISO points and enough capacity for many structure fires.

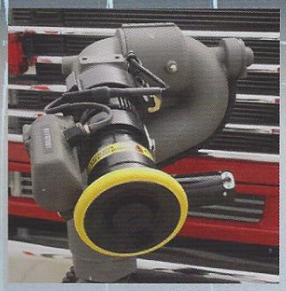


PTO DRIVEN PUMP

This lightweight, easy to engage pump has no gear clashing and is compact and easy to service. The maintenance-free mechanical seal also reduces service cost. In less than 1 hour, the pump can be completely removed from the truck.

LARGE COMPARTMENTATION - 1/8" ALUMINUM BODY

With 104 cubic feet of storage space, the Maverick can carry all required equipment and none of the space is used by pump controls. The long-life, lightweight aluminum body is resistant to corrosion.



PUMP-N-ROLL/NH SERIES PUMP

The pump-n-roll is perfect for grass and brush fires and expands the use of the truck. With up to 100 GPM at 100 PSI at 0-10 mph in forward or reverse, the NH series is the best pump-n-roll pump in its class.

MAVERICK

- Short Wheel Base Chassis - 186 inches axle to axle
- 1250 GPM PTO Driven Pump
- Rosenbauer NH Pump with Pump-n-Roll
- Aluminum Body with Galvanized Subframe
- Automatic Primer Rosenbauer Exclusive
- Swivel Style Dump Valve Extension
- Large Tank Sizes - Up to 2,000 Gallons Available
- Rosenbauer High Pressure Foam System
- Other Pumps Available

SHORT WHEEL BASE CHASSIS

The Maverick chassis is 186" axle to axle with excellent maneuverability.

SWIVEL STYLE DUMP VALVE EXTENSION

With a 180-degree swivel off the rear, it provides flexibility when off-loading water. The extension meets NFPA requirements.

LOW CROSSLAYS WITH REMOVABLE TRAYS

The crosslays are easy to deploy, and the trays are easy to remove for ground level reloading. Personnel do not need to climb on top of the truck, which reduces injuries.

GALVANIZED SUBFRAME

The Maverick's galvanized subframe resists corrosion, is durable enough for off-road use and has a long life.

HIGH GROUND CLEARANCE (PUMP DOES NOT HANG BELOW RAILS)

The pump's high ground clearance prevents damage from road conditions and keeps it from getting hung up in uneven terrain.

ENGAGE/DISENGAGE PUMP ON THE GO WITH SAFETY CUTOUT

The cut-out provision prevents pump damage. It's great for pump-and-run operations on large grass fires.

LARGE TANK SIZES - UP TO 2,000 GALLONS AVAILABLE

The Maverick's tank is large enough for initial attack until other supply units arrive. Made of corrosion-free polypropylene, the tank can also support other apparatus with water.

Connect with Rosenbauer online @ RosenbauerAmerica.com

FIVE YEAR SERVICE

As part of our proposal we are including five (5) year service for the apparatus. This includes annual PM's that include filters and fluid for the engine, transmission, Waterous pump gear case, rear axle and CAFS unit. The annual service will be completed at the fire department.

At the time of delivery the fire department will be instructed into the operation of the vehicle in regards to the midship pump, primer, pressure governor, CAFS foam system, FoamPro injection foam system, Whelen emergency warning system including the lights and siren, front bumper remote controlled turret,