INTENT OF SPECIFICATIONS

It shall be the intent of these specifications to provide a complete apparatus equipped as hereinafter specified. With a view to obtaining the best results and the most acceptable apparatus for service in the Department, these specifications cover only the general requirements as to the type of construction and tests to which the apparatus must conform, together with certain details as to finish, equipment and appliances with which the successful bidder must conform. Minor details of construction and materials where not otherwise specified are left to the discretion of the contractor, who shall be solely responsible for the design and construction for all features. The National Fire Protection Association Standard 1901, current edition, unless otherwise specified in these specifications, shall prevail.

Bids shall only be considered from companies that have an established reputation in the field of fire apparatus construction and have been in business for a minimum of twenty-five years.

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

Because of the severe service requirements the department will impose on this apparatus, each bidder shall provide a list of at least six (6) departments serving populations of over 250,000 in which similar apparatus utilizing the brand of chassis proposed have been in service for over one year. This list shall include contact names and phone numbers.

Each bid shall be accompanied by a set of "Contractor's Specifications" consisting of a detailed description of the apparatus being furnished under this contract which conform. Computer runoff sheets are not acceptable as "Contractor's Specifications". Note: Each bidder shall submit their bid in the same sequence as these specifications to allow the department to easily compare bid. There shall be no exception to this requirement.

QUALITY AND WORKMANSHIP:

The design of the Apparatus must embody the latest approved automotive engineering practices.

The workmanship must be of the highest quality in its respective field. Special consideration will be given to the following points: Accessibility of the various units that require periodic maintenance operations, ease of operation (including both pumping and driving) and symmetrical proportions.

Construction shall be rugged and ample safety factors shall be provided to carry loads as specified and to meet both on and off road requirements and to speed conditions as set forth under "Performance tests and requirements".

Welding shall be employed in the assembly of the apparatus in a manner that will not prevent the ready removal of any component part for service or repair.

DELIVERY:

Apparatus, to insure proper break-in of all components while still under warranty, shall be delivered under its own power. A qualified delivery engineer representing the contractor shall instruct the Fire Department Personnel in the proper operation, care and maintenance of the equipment delivered.

PERFORMANCE TESTS AND REQUIREMENTS:

A road test shall be conducted with the apparatus fully loaded and a continuous run of ten miles or more will be made, during which time the apparatus shall show no loss of power or overheating. The transmission drive shaft or shafts and rear axles shall run quietly and be free from abnormal vibration or noise throughout the operating range of the apparatus. The successful bidder shall furnish a Weight Certificate showing weights on front axle, rear axles and total weight for the completed apparatus at time of delivery.

A. The apparatus shall be capable of accelerating to 35 MPH from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed RPM of the engine.

B. From a steady space of 15 MPH the vehicle shall accelerate to 35 MPH within 30 seconds. This shall be

accomplished without moving the gear selector.

C. The service brakes shall be capable of stopping the fully loaded vehicle in 35 feet at 20 MPH on level dry concrete highway.

D. The apparatus, fully loaded, shall be capable of obtaining a minimum speed of 50 MPH on a level dry concrete highway with the engine not exceeding its governed RPM (fully loaded).

E. If optioned, the apparatus shall be tested and approved by the Underwriter's Laboratories Incorporated in accordance with their standard practices for pumping engines.

F. The Contractor shall furnish copies of the Pump Manufacturer's Certification of hydrostatic test, the Engine Manufacturer current certified brake horsepower curve, and the Manufacturer's record of pumper construction details when delivered.

If optioned, the vendor, at their expense, shall have the Underwriter's Laboratories Incorporated conduct the tests required by the Underwriter Laboratories Incorporated (Guide for the Certification of Fire Department Pumper subject 822 dated 1995 or latest). A copy of all tests shall accompany the Apparatus.

The contractor shall supply the final manufacturer's furnished certification of GVWR and GAWR on a nameplate affixed to the vehicle.

A permanent plate shall be mounted in the driver's compartment to specify the quantity and type of the following fluids used in the vehicle: Engine oil, engine coolant, and chassis transmission fluid, pump transmission lubrication fluid, pump primer fluid (if used) and drive axle lubrication fluid.

A permanent plate in the driver's compartment shall be installed, specifying the seating capacity of the enclosed cab.

Signs that state "OCCUPANTS MUST BE SEATED AND BELTED WHEN APPARATUS IS IN MOTION" shall be provided and will be visible from each seated position. An accident prevention sign shall be located at the rear step area of the apparatus. It shall warn all personnel that standing on the step while apparatus is in motion shall be prohibited.

A nameplate indicating the chassis transmission shift selector position to be used when pumping shall be provided in the driving compartment and located so that it can be easily read from the driver's position.

LIABILITY:

The bidder, if their bid is accepted, shall defend any and all suits and assume all liability for the use of any patented device or article forming part of the apparatus or any appliance furnished under the contract.

GENERAL CONSTRUCTION:

The apparatus shall be designed with due consideration to distribution of load between the front and rear axles, so that all specified equipment, including filled water tank, a full complement of personnel and fire hose will be carried without injury to the apparatus. Weight balance and distribution shall be in accordance with the recommendations of NFPA 1901.

The apparatus shall be designed so that the operator could perform all recommended daily maintenance checks easily without the need for hand tools. Apparatus components that interfere with repair or removal of other major components must be attached with fasteners (cap, screws, nuts, etc.) so that the components can be removed and installed with normal hand tools. These components must not be welded or otherwise permanently secured into place.

The GAWR and GVWR of the chassis shall be adequate to carry the fully equipped apparatus including all tanks filled, the specified hose load, unequipped personnel weight, ground ladders and a miscellaneous equipment allowance per NFPA criteria. It shall be the responsibility of the purchaser to provide the contractor with the weight of equipment to be carried if it is in excess of the allowance as set forth by NFPA.

The unequipped personnel weight shall be calculated at 200 lbs. per person times the maximum number of persons to ride on the apparatus.

The height of the fully loaded vehicle's center of gravity shall not exceed the chassis manufacturer's maximum limit.

The front to rear weight distribution of the fully loaded vehicle shall be within the limits set by the chassis manufacturer. The front axle loads shall not be less than the minimum axle loads specified by the chassis manufacturer, under full loads and all other loading conditions.

The difference in weight on the end of each axle, from side to side, when the vehicle is fully loaded and equipped shall not exceed 7 percent.

The apparatus shall be so designed that the various parts are readily accessible for lubrication, inspection, adjustment and repair.

Where special tools manufactured or designed by the contractor and are required to provide routine service on any component of the apparatus built or supplied by the contractor, such tools shall be provided with the apparatus.

EXCEPTIONS TO SPECIFICATIONS:

The following Chassis, Pump and Body specifications shall be strictly adhered to. Exceptions shall be allowed if they are equal to or superior to that specified and provided they are listed and fully explained on a separate page entitled "Exceptions to Specifications". The exception list shall refer to specification page number and paragraph. Proposals taking total exception to specifications or total exception to certain parts of the specifications such as Electrical Systems, Body or Pump, will not be accepted. Apparatus shall be inspected upon apparatus completion for compliance with specifications. Deviations will not be tolerated and will be cause for rejection of Apparatus unless they were originally listed in bidder's proposal and accepted in writing by the department.

If the bidder takes an exception, on the exception page, the bidder must state an option price to bring their specifications into full compliance with the Department specifications. Failure to provide this information shall be cause to reject the proposal as being non-responsive.

PURCHASER'S RIGHTS:

The Purchaser reserves the right to accept or reject any or all bids as it deems to be of their best interest to do so.

BID DRAWINGS

Drawings including, but not limited to, the overall dimensions, wheelbase, and overall length of the proposed apparatus shall be required with the bid. The drawing shall include right, left, and rear views of the apparatus.

Large "D" size drawings of the units proposed, has been furnished with this proposal as specified.

APPARATUS TEST BY UNDERWRITERS LABORATORIES

The following Apparatus shall comply with all NFPA 1901 applicable regulations in effect as of the contract signing date. There shall be multiple tests performed by the contractor and Underwriter's Laboratories when the apparatus has been completed. The manufacturer shall furnish the completed Test Certificate(s) to the purchaser at time of delivery. Since the inspection services of Underwriters Laboratories are available to all bidders on an equal basis, no other third party testing service shall be acceptable. The tests conducted on the apparatus shall include, but not be limited to:

PUMP & PLUMBING PERFORMANCE TEST

The apparatus pump and plumbing system shall be tested and certified.

12 VOLT ELECTRICAL TEST

The apparatus low voltage electrical system shall be tested and certified.

SUPPLIED INFORMATION & EXTRAS

The apparatus manufacturer shall supply two (2) copies of apparatus manuals with all manufactured apparatus. The manuals shall include, but not be limited to: all component warranties, users manuals and information for supplied products, apparatus engineering information including drawings and build prints, and whatever other pertinent information the apparatus manufacturer can supply to its customer regarding the said apparatus.

Included in the delivery of the unit, the apparatus manufacturer shall also include spare hardware and extra fasteners, paint for touch-up, information regarding washing and care procedures, as well as other recommendations for care and upkeep of the general apparatus.

The apparatus manufacturer shall also supply a manufacturer's record of apparatus construction details, including the following information:
Owner name and address;
Apparatus manufacturer, model, and serial number;
Chassis make, model, and serial number;
GAWR of front and rear axles;
Front tire size and total rated capacity in pounds;
Rear tire size and total rated capacity in pounds;
Chassis weight distribution in pounds with water (if applicable) and manufacturer mounted equipment (front and rear);
Engine make, model, serial number, rated horsepower, related speed and no load governed speed;
Type of fuel and fuel tank capacity;
Electrical system voltage and alternator output in amps;
Battery make and model, capacity in CCA;
Paint numbers;
Weight documents from a certified scale showing actual loading on the front axle, rear axle(s), and overall vehicle (with the water tank full (if applicable) but without personnel, equipment, and hose);
Written load analysis and results of the electrical system performance tests;

Transmission make, model, and type;
Pump to drive through the transmission (yes or no);
Engine to pump gear ratio and transmission gear ratio used;
Pump make, model, rated capacity in gallons per minute, serial number, and number of stages,
Pump manufacturer's certification of suction capability;
Pump manufacturer's certification of hydrostatic test;
Pump manufacturer's certification of inspection and test for the fire pump;
Copy of the apparatus manufacturer's approval for stationary pumping applications;
Pump transmission make, model and serial number;
Priming device type;
Type of pump pressure control system;
The engine manufacturer's certified brake horsepower curve for the engine furnished, showing the maximum no load governed speed;
Certification of water tank capacity;

NO PRECONSTRUCTION CONFERENCE

There shall be no preconstruction conference, prior to manufacturing, with individuals from the Fire Department.

ON-LINE CUSTOMER INTERACTION

The manufacturer shall provide the capability for online access through the manufacturer's web site. There shall be a dedicated section of the web site for customers to access the status of their apparatus during the construction phases. In this secured area customers will be able view specified digital photos of their apparatus during the construction phases. The following photos will be provided with this service:

1. Chassis (front, left and right side)
2. Body, pre-paint (front, rear, left and right side)
3. Body painted and pump module mounted (front, rear, left and right side)
4. Assembly (front, rear, left and right side)

Due to the complex nature of fire apparatus and the importance of communication between the manufacturer and customer, this line item is considered a critical requirement. NO EXCEPTIONS

DELIVERY

A factory-authorized individual shall deliver the unit under its own power. The unit will remain insured by the apparatus manufacturer until the department accepts the unit.

GENERAL WARRANTY

We warrant each new fire apparatus manufactured by Crimson Fire for a period of one (1) year from the date of delivery, except for the commercial chassis and certain other components as noted in the next paragraph.

In the case of a commercial chassis being used, the warranty on the chassis, engine, transmission, tires, 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 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 Crimson Fire. Please see the official warranty document in the appendix (attached) for specific details.

STRUCTURAL WARRANTY

A structural warranty will be provided by the apparatus manufacturer for products of its manufacture to be free from defects in material and workmanship, under normal use and service, for a period of twenty (20) years. Please see the official warranty document in the appendix (attached) for specific details.

PAINT WARRANTY

A ten (10) year Paint Warranty will be included with the apparatus. Please see the official warranty document in the appendix (attached) for specific details.

PUMP WARRANTY

A pump warranty shall be provided by the pump manufacturer for products of its manufacture to be free from defects in material and workmanship, under normal use and service, for a period of five (5) years or five thousand (5000) hours of usage, whichever comes first. Please see the official warranty document in the appendix (attached) for specific details.

TANK WARRANTY

A lifetime tank warranty shall be provided by the tank manufacturer. Please see the official warranty document in the appendix (attached) for specific details.

MULTI-PLEXED ELECTRICAL WARRANTY

A multi-plexed electrical warranty will be provided by the apparatus manufacturer under normal use and service, for a period of four (4) years. One (1) year parts and labor remainder three (3) years parts only. Please see the official warranty document in the appendix (attached) for specific details.

MAXIMUM OVER ALL WIDTH OF NINETY-NINE (99) INCHES

The Apparatus specified shall be constructed as detailed and shall NOT exceed a Maximum Over All Width of Ninety-nine (99) Inches. This dimension shall include the primary construction of the apparatus body and chassis cab. Any peripherals that are 'removable' shall not be incorporated into this measurement. Items that are considered 'removable' are: Rub Rails, Fenderettes, Mirrors, Lights, Handrails, Front Bumpers,Etc.

Vehicle Summary

Unit			Chassis	
Model:	T3 Series Conventional		Fr Axle Load (lbs):	12000
Type:	FULL TRUCK		Rr Axle Load (lbs)	23000
Description:	CRIMSON STOCK 38K 4 DR		G.C.W. (lbs):	38000
Application			Road Conditions:	
Intended Serv.:	Fire truck service. Vehicles used in fighting		Class A (Highway)	80

Commodity: Fire apparatus		Class B (Hwy/Mtn)		20	
				Class C (Off-Hwy)	00
Body				Class D (Off-Road)	00
Type:	Fire truck-pumper			Maximum Grade:	6
Length (ft):	20.0			Wheelbase (in):	260
Height (ft):	12.0			Fr Axle to BOC (in):	68
Max Laden Weight (lbs):	4000			Cab to Axle (in):	192
				Cab to EOF (in):	275
Trailer					
No. of Trailer Axles:	0				
Type:					
Length (ft):	0.0		**Special Req.**		
Height (ft):	0.0		U.S. Domestic (non-Californian Registry)		
Kingpin Inset (in):	0				
Corner Radius (in):	0				
Restrictions					
Length (ft):	120				
Width (in):	102				
Height (ft):	15.0				

Data	Code	Description		Weight
Model				
0000310			**T3 Series Conventional**	9,932
	O		Electric Door locks LH/RH; Ignition and doors keyed alike; Single electric horn; Single-piece wind shield; Electric windshield wipers: 2-speed plus intermittent; Electric windshield washers; Steering wheel 18in 4-spoke;Glovebox door, with locking latch ;D	
0070011			**Class 7 Or Class 8 Medium Duty**	0

ROCKER SWITCH PANEL

All specified lighting fixtures and electrical components shall be activated by Carlingswitch V-series rocker style switches. The switches shall be located on a separate embossed electrical panel, fabricated with aluminum complete with backlit name tags describing the function of each individual switch. An internally lighted red rocker switch shall be furnished on the left and identified as the "MASTER EMERGENCY SWITCH".

ELECTRICAL CONTROL CENTER CONSOLE

The rocker switch panel shall be mounted in the dash between the driver and officer. Other components such as open door warning light, pump shift controls, vacuum fluorescent display, siren head controller, etc may be mounted on the console as well (depending on space required). If space isn't available on the console, the remaining controls shall be mounted on or below the cab dash for access by either the driver or officer.

BATTERY SWITCH - LEVER STYLE

There shall be a Cole Hersee #9500 battery disconnect switch installed to activate the battery system. There shall be a green "battery on" pilot light located adjacent to the switch and visible from the driver's position.

BACK UP ALARM

An electronic backup alarm shall be furnished and installed. It shall be 97 decibels and actuate automatically when transmission gear selector is placed in reverse.

HAZARD LIGHT IN CAB

There shall be a "Door Open" indicator light mounted in the cab. The light shall be mounted to the cab dash between the driver and officer (if possible) and shall activate when the parking brake is released and a compartment door or any additional specified devices are not closed completely. There shall be a placard stating "Do Not Move Apparatus When Light Is On." The light shall be a Weldon LED marker lamp, red in color.

REFLECTIVE STRIPPING

Reflective stripping shall be added to the inside of the cab doors in accordance to NFPA regulations.

BUMPER EXTENSION

There shall be no front bumper extension provided on the apparatus.

HORIZONTAL EXHAUST

The chassis shall have a horizontal exhaust system piped to the side of the apparatus body just ahead of the rear wheels.

CAB STEP OVERLAYS

No cab step dress-up panels shall be provided to the OEM equipment.

COMMERCIAL CAB FACTORY FINISH

The chassis cab shall have a factory finish.

ENGINE COMPARTMENT LIGHTS

There shall be one (1) 12 volt work light(s) installed in the engine compartment. Each light shall be enclosed in an ABS case. Each light head shall be removable and have a retractable wire that can be extended a minimum of 10 feet to allow maintenance personnel to relocate and direct the light as needed. Each light shall have an on/off switch.

DRIVE LINE MODIFICATION

The chassis drive line shall be modified from its OEM Status to accommodate any changes required by the OEM for wheelbase, pump installation, or otherwise.

BATTERY & AIR CHARGERS

A battery charger and air pressure leakage compensator shall be furnished and installed. The battery charger shall have a 15 amp output to the batteries with several "battery saver" outputs, allowing up to 3 amps of 12 volt rechargeable items to be wired through the charger, only allowing charging when the shoreline is plugged in. There shall be a bar graph display, to indicate battery condition, mounted near the shoreline.

The air compressor shall be 12 volts and also operate off of the charger, maintaining brake pressure to a minimum 75 psi. The components shall be manufactured by Kussmaul Electronics and be model Pump Plus 1000.

There shall be a Kussmaul "Super Auto-Eject" 110 volt, 20 amp shoreline receptacle furnished and installed. When the ignition switch is activated, the electrical current shall be interrupted before the plug is automatically ejected to prevent arcing. The plug for the receptacle shall be shipped loose to be installed on the shoreline cord.

The shoreline connection(s) shall be installed under the driver's door area at the lower step level. The connection(s) shall be placed forward of the immediate stepping area if space allows.

SIREN

One (1) Whelen electronic siren, model # 29SLSA1 shall be furnished and installed. It shall be 100 watts and feature wail, yelp, phaser, air horn and manual wail. The microphone shall have noise canceling circuitry and Public Address override. The siren and hard wired microphone shall be installed with-in reach of the driver and officer unless otherwise directed by the fire department.

SIREN SPEAKER

There shall be a 100 watt siren speaker furnished and installed. It shall be a Cast Products model specially contoured for the front bumper SA-4301-1

There shall be one (1) speaker(s) installed in the front bumper, mounted on the left side.

AIR HORNS

There shall be two (2) chrome plated air horns furnished and installed on the vehicle. They shall be manufactured by Grover and be the Stuttertone model # 1510.

The air horn(s) shall be mounted on the chassis hood.

The air horns shall be actuated by foot switch, one mounted on the driver's side and one mounted on the passenger's side of the chassis cab.

PRESSURE PROTECTION VALVE

There shall be a pressure protection valve to prevent the use of air horns or other air operated accessories when the system air pressure drops below 85 psi.

CHASSIS REQUIRED LABELING

Signs that state "Occupants must be seated and belted when apparatus is in motion" shall be provided. They shall be visible from each seating position.

There shall be a lubrication plate mounted inside cab listing the type and grade of lubrication used in the following areas on the apparatus and chassis:

- Engine oil
- Engine Coolant
- Transmission Fluid
- Pump Transmission Lubrication Fluid
- Drive Axle Lubrication Fluid

- Generator Lubrication Fluid (if applicable)
- Tire Pressures

VEHICLE INFORMATION LABEL

There shall be a travel clearance warning label located in the chassis cab. The travel clearance warning label shall be located in easy view of the driver. The travel clearance warning label to include the following information:

1. Overall travel clearance height in feet and inches.
2. Overall travel clearance length in feet and inches.
3. Overall travel clearance width in feet and inches.

MUD FLAPS

Heavy-duty rubber mud flaps shall be provided behind the rear wheels. The mud flaps shall be black rubber type and be bolted in place.

WHEEL COVERS

There shall be chrome plated lug nut covers and hub caps furnished and installed on the front and rear wheels. There will also be chrome Baby Moon hub cover for the rear wheels.

MIDSHIP PUMP

The pump shall have a capacity of 1500 gallons per minute, measured in US gallons. The pump shall be a Darley model LDM, single stage midship pump.

Pump casing shall be of fine grain alloy cast iron, vertically split; with a minimum tensile strength of 30,000 PSI-bronze fitted pump is to have a heating jacket in the main pump casing.

Impeller to be high-strength bronze alloy of mixed flow design accurately balanced for precision fit and durability. Impeller is to feature a double-suction inlet design with opposed volute cutwaters to minimize radial thrust. Renewable bronze, double-labyrinth, wraparound seal rings are to be furnished in the pump. Pump shaft to be precision-ground stainless steel. Pump shaft is to be splined to receive a broached impeller hub. Bearings are to be heavy duty, deep groove, and radial-type ball bearings, oversized for long life. Bearings to be protected at all openings from road dirt and water splash with oil seals and water slingers.

Transmission case to be alloy cast iron of heavy-duty design with adequate oil reserve capacity to maintain low operating temperature. Magnetic drain plug is to be provided. Pump drive shaft shall be precision-ground, heat treated alloy steel-minimum 2 1/2" x 10-spline ends. Power to drive the fire pump shall be provided by the vehicle engine.

Pump ratio to be selected by manufacturers Engineering Department. Gears are to be helical in design and precision cut for quiet operation and long life. Gears to be cut from high strength alloy steel, heat treated and gas nitrided. Gear face to be minimum of 3-1/2". Chain drive and/or designs requiring extra lubricating pump are not acceptable. The entire pump shall be the Class "A" type and shall deliver the following;

100 % of rated capacity at 165 PSI net pumps pressure
100 % of rated capacity at 150 PSI net pumps pressure
70 % of rated capacity at 200 PSI net pumps pressure
50 % of rated capacity at 250 PSI net pumps pressure

Since this pump is available to all bidders on an equal basis, and because of the desire to standardize within the department for training and parts stocking purposes, there shall be no exception to the Darley pump specifications. Hale or Waterous pumps will not be acceptable.

MASTER DRAIN VALVE

There shall be a manifold type drain valve installed in the pump compartment. All pump drains shall be connected to the master drain valve. The drain valve shall be controlled on the left side lower pump house sill. The control shall be a hand wheel knob marked "open" and "closed".

PUMP SEALS

The pump shall come equipped with pump packing. The stuffing box is to be a single-plunger injection style,

utilizing a plastallic, graphite composite packing that equalizes pressure around the shaft. Packing renewal is made by removing the plunger and inserting pellet form of packing as needed. Replacement of packing, or adjustment, should be able to be made within fifteen minutes. This type of packing gland is desired in order to minimize friction, heat generation and apparatus downtime. Shaft seals or braided rope packing gland designs do not meet this requirement. Steel with long-wearing, titanium hard coating provided under the packing gland plunger. The pump shaft shall have long wearing ceramic hard coating under packing glands.

PUMP SHIFT

The drive unit shall be provided with an air pump shift system. The control valve shall be a spring loaded guard lever that locks in "Road" or "Pump" mode.

Near the pump shift control, there shall be two indicator lights to show the position of the pump when the control is moved to "Pump" position. A green light shall be energized when the pump shift has been completed and shall be labeled "PUMP ENGAGED"; a second green light shall be labeled "OK TO PUMP" energized when both the pump shift has been completed and the chassis automatic transmission is engaged.

A third green indicator light shall be installed adjacent to the throttle on the pump operator's panel. This light shall be labeled "Throttle Ready".

In addition to this indicator light, an additional indication shall be provided to the pump operator at the panel when the pump is ready to pump. This additional indication shall be that one (1) of the operator's panel illumination lights will only activate when the "OK TO PUMP" indicator is lit. The remaining panel lights shall be controlled via push button switch.

PRIMER SYSTEM

The pump primer shall be U. L. Approved and capable of developing a minimum of 22" of vacuum the primer shall be an electrically driven, positive displacement, rotary vane design, complete with valve, solenoid, motor and pump. Priming pump shall be constructed of heat-treated and hard coated aluminum alloy. Model# AP00960.

PRIMER CONTROL

There shall be a push/pull priming knob shall be located on the operator's panel.

PUMP COOLING LINE

There shall be a 3/8" line run from the pump to the water tank to assist in keeping the pump water from overheating. There shall be a 1/4 turn on/off valve installed on the operator's panel.

STEAMER INLETS

There shall be two (2) 6" inlets furnished, one on either side of the pump. The inlets shall protrude 1-2" away from the side panels and shall each have 6" NST threads and a removable strainer.

6" CHROME PLATED BRONZE CAP(S)

There shall be two (2) 6" long handled chrome plated caps furnished. The cap(s) shall be National Standard Thread.

STAINLESS STEEL PLUMBING

All auxiliary suction and discharge plumbing related fittings, waterways, and manifolds shall be fabricated with stainless steel pipe; brass or high pressure flexible piping with stainless steel couplings - NO EXCEPTIONS. Galvanized components and/or iron pipe shall NOT be accepted to ensure long life of the plumbing system without corrosion or deterioration of the waterway system. Where waterway transitions are critical (elbows, tees, etc), no threaded fittings shall be allowed to promote the smooth transition of water flow to minimize friction loss and turbulence. All piping components and valving shall be non-painted. All piping welds shall be wire brushed and cleaned for inspection and appearance.

The high pressure flexible piping shall be black SBR synthetic rubber hose with 300 PSI working pressure and 1200 PSI burst pressure for flexible piping sizes 1.5" through 4". Sizes 3/4", 1" and 5" are rated at 250 PSI working pressure and 1000 PSI burst pressure. All sizes are rated at 30 in HG vacuum. Reinforcement consists of two plies of high tensile strength tire cord for all sizes and helix wire installed in sizes 1" through 5" for maximum performance in tight bend applications. The material has a temperature rating of --40° F to +210° F.

The stainless steel full flow couplings are precision machined from high tensile strength stainless steel. All female couplings are brass. Mechanical grooved and male 3/4" and 1" couplings are brass. A high tensile strength stainless steel ferrule with serrations on the I. D. Is utilized to assure maximum holding power when fastening couplings to hose.

2 1/2" LEFT SIDE SUCTIONS

There shall be one (1) 2 1/2" gated suction inlet(s) installed on the apparatus. Each intake valve shall be equipped with a 3/4" bleeder.

Each suction shall be plumbed with a 2 1/2" Akron Brass 8000 series swing-out valve with a stainless steel ball.

Each suction shall be controlled with a lever directly attached to the valve.

Each side suction shall be plumbed with 2 1/2" piping. The plumbing shall be drained with a quarter-turn drain system. The drain control shall be located on the lower sill on either side of the pump house.

The suction shall terminate with a heavily chrome plated brass 2 1/2" NST swivel female adapter with screen. In addition, a 2 1/2" NST male plug shall be included secured by a chain or cable to the inlet termination location.

2 1/2" RIGHT SIDE DISCHARGES

There shall be one (1) 2 1/2" gated discharge(s) installed on the right side of the apparatus.

Each discharge shall utilize an Akron Brass 2 1/2" 8000 series swing-out valve with a stainless steel ball.

Each discharge shall be controlled from the side operator's panel.

Each discharge shall be plumbed with 2 1/2" piping. The plumbing shall be drained with a quarter-turn drain system. The drain control shall be located on the lower sill on either side of the pump house.

The discharge shall terminate with a 2 1/2" NST adapter and a 2 1/2" NST female by male swivel 45 degree elbow. In addition, a 2 1/2" NST cap shall be included, secured by a chain or cable to the outlet termination location.

A No Shok 2 1/2" liquid filled gauge shall be supplied for discharge pressure reading.

2 1/2" LEFT SIDE DISCHARGES

There shall be two (2) 2 1/2" gated discharge(s) installed on the left side of the apparatus.

Each discharge shall utilize an Akron Brass 2 1/2" 8000 series swing-out valve with a stainless steel ball.

Each discharge shall be controlled with a 'swing-type' lever directly attached to the valve. The lever shall operate just over 90 degrees of travel to provide full open / full closed positioning of the valve.

Each discharge shall be plumbed with 2 1/2" piping. The plumbing shall be drained with a quarter-turn drain system. The drain control shall be located on the lower sill on either side of the pump house.

The discharge shall terminate with a 2 1/2" NST adapter and a 2 1/2" NST female by male swivel 45 degree elbow. In addition, a 2 1/2" NST cap shall be included, secured by a chain or cable to the outlet termination location.

A No Shok 2 1/2" liquid filled gauge shall be supplied for discharge pressure reading.

MASTER DISCHARGE(S)

There shall be one (1) master discharge(s) installed on the right side of the apparatus.

Each gated discharge outlet furnished shall utilize an Akron Brass 3" 8000 series swing-out valve with a stainless steel ball. In addition, the valve shall be a slow closing type.

Each discharge shall be controlled from the side operator's panel.

Each discharge shall be plumbed with 3" piping. The plumbing shall be drained with a quarter-turn drain system. The drain control shall be located on the lower sill on either side of the pump house.

The discharge shall terminate with a heavily chrome plated brass 3" NPT to NST adapter and a 3" NST female swivel by 4" Storz cast aluminum 30 degree elbow. In addition, a 4" Storz cap shall be included secured by a chain or cable to the outlet termination location.

A No Shok 2 1/2" liquid filled gauge shall be supplied for discharge pressure reading.

2 1/2" RIGHT REAR DISCHARGES

There shall be one (1) 2 1/2" gated discharge(s) installed in the rear of the apparatus, on the right side of the truck.

Each discharge shall utilize an Akron Brass 2 1/2" 8000 series swing-out valve with a stainless steel ball.

Each discharge shall be controlled from the side operator's panel.

Each discharge shall be plumbed with 2 1/2" Class 1 high pressure vapor hose and stainless steel couplings and/or stainless steel piping. The plumbing shall be drained with a quarter-turn drain system. The drain control shall be located on the lower sill on either side of the pump house.

The discharge shall terminate with a 2 1/2" NST adapter and a 2 1/2" NST female by male swivel 45 degree elbow. In addition, a 2 1/2" NST cap shall be included, secured by a chain or cable to the outlet termination location.

A No Shok 2 1/2" liquid filled gauge shall be supplied for discharge pressure reading.

DELUGE PLUMBING

There shall be one (1) deluge waterway(s) installed on the apparatus.

Each gated discharge outlet furnished shall utilize an Akron Brass 3" 8000 series swing-out valve with a stainless steel ball. In addition, the valve shall be a slow closing type.

Each discharge shall be controlled from the side operator's panel.

The deluge shall be plumbed with 3" piping that terminates 3" above the top of the pump compartment unless otherwise specified or required by a specific deck gun selection as noted. The plumbing shall be drained with an auto-drain located at the lowest point of the waterway system if required.

The monitor pipe will be capped with a stainless steel cap to allow for future installation of deck gun.

A No Shok 2 1/2" liquid filled gauge shall be supplied for discharge pressure reading.

The deluge pipe shall be located up through the pump compartment, centered from left to right.

DOUBLE STACK CROSSLAYS

The crosslay hose beds shall be located in the upper portion of the pump compartment. The crosslay shall be constructed with a fifteen (15) inch approximate depth for laying a double stack of each hose size specified below. The crosslay area shall be located at the front of side control module apparatus and at the rear of top control module apparatus. The crosslay area shall span the entire width of the pump module apparatus. Slotted aluminum flooring shall be provided for hose area drainage. Stainless steel scuff plates shall be installed at the bottom and at the vertical edges of the crosslay opening. Chicksan swivels shall be installed just below the floor of each crosslay bed just high enough for hose couplings to be accessed and tightened on to chicksans . Chicksan swivels shall swing from left to right to allow attached hose to be deployed from either side.

Two (2) crosslay(s) shall be provided for up to 200 feet of 1 3/4" hose.

Each discharge shall utilize an Akron Brass 2" 8000 series swing-out valve with a stainless steel ball.

Each discharge shall be controlled from the side operator's panel.

Each discharge shall be plumbed with 2" Class 1 high pressure vapor hose and stainless steel couplings and/or stainless steel piping. The plumbing shall be drained with an auto-drain located at the lowest point of the

waterway system.

The discharge shall terminate with a brass 1 1/2" NST chicksan swivel. This discharge is intended to be pre-connected to hose, so no cap shall be provided.

A No Shok 2 1/2" liquid filled gauge shall be supplied for discharge pressure reading.

CROSSLAY COVER

The crosslay hose bed area shall have a vinyl cover installed on the top and sides of the crosslay area. The cover shall be held in place by an aluminum extrution at the top and shock cord and two hooks per side at the bottom.

The crosslay hose bed cover shall be red.

CROSSLAY HOSE BED LIGHT

There shall be one flood light furnished and installed on the pump compartment to illuminate the crosslay hose bed. It shall be 6" in diameter and be 50 watts. The light shall be manufactured by Unity.

TANK TO PUMP LINE

The connection between the tank and the pump shall be capable of the flow recommendations as set forth in NFPA Pamphlet 1901, latest revision and shall be tested to those standards when the pump is being certified. One (1) non-collapsible flexible hose(s) and valve(s) shall be incorporated into the tank to pump plumbing to allow movement in the line as the chassis flexes to avoid damage during normal road operation. Schedule 10 stainless steel or schedule 40 Poly-Vinyl Chloride piping may be used to complete the connection from the tank to pump valve to the water tank.

One (1) Akron Brass 3" swing-out valve(s) with a stainless steel ball shall be installed.

Each valve shall be controlled from the side operator's panel.

TANK TO PUMP CHECK VALVE

There shall be a tank to pump check valve, conforming to NFPA standards, which shall be of bronze construction. The check valve shall be mounted as an integral part of the pump suction extension.

TANK FILL LINE

One (1) 2" tank fill/recirculation line shall be installed from the pump directly to the booster tank.

One (1) Akron Brass 2" swing-out valve(s) with a stainless steel ball shall be installed.

Each valve shall be controlled from the side operator's panel.

PUMP COMPARTMENT

The complete apparatus pump compartment shall be constructed of a combination of structural tubing and formed sheet metal. The same materials used in the body shall be utilized in the construction of the pump compartment. The structure shall be welded utilizing the same A. S.W. Certified welding procedure as used on the structural body module. These processes shall ensure the quality of structural stability of the pump compartment module.

The pump compartment module shall be separated from the apparatus body with a gap. This gap is necessary to accommodate the flexing of the chassis frame rails that is encountered while the vehicle is in transit so that harmful torsional forces are not transmitted into the structural framework.

RUNNING BOARDS

The running boards shall be made of a structural tubular framework. The tubular frame support all loads by transmitting the loads through the pump compartment structure directly to the chassis frame rails. The running boards shall be independent of the apparatus body and shall be tied only to the pump compartment structure, thereby eliminating any pump compartment to body interference. This is essential in keeping a truly 'modular' configuration. Slip-resistant abrasive shall be applied to the top surface of the running board framework to provide a suitable stepping surface.

EMBOSSED TREAD PLATE OVERLAY

The left side running board shall have a 1/8" embossed aluminum tread plate overlay installed. The stepping area shall be as large as possible, overlapping the perimeter of the structural running board framework. The embossed tread plate material shall meet the latest NFPA abrasiveness criteria for materials utilized in stepping and/or standing areas.

EMBOSSED TREAD PLATE OVERLAY

The right side running board shall have a 1/8" embossed aluminum tread plate overlay installed. The stepping area shall be as large as possible, overlapping the perimeter of the structural running board framework. The embossed tread plate material shall meet the latest NFPA abrasiveness criteria for materials utilized in stepping and/or standing areas.

TORSION PUMP MODULE MOUNTING SYSTEM

The entire pump module assembly shall be mounted so that it “floats” above the chassis frame rails with vibration and torsion isolator assemblies. The body substructure shall be mounted above the frame to allow independent flexing to occur between the body and the chassis. Each assembly shall be mounted to the chassis frame rails with steel, gusseted mounting brackets. Each bracket shall be powder coated for corrosion resistance. Each body mount bracket shall be mounted to the side chassis frame flange with two 5/8”-UNC Grade 5 HHCS.

Each assembly shall have a two-part rubber vibration isolator. The isolator shall be of a specific durometer to carry the necessary loads of the apparatus body, equipment, tank, water, and hose. The quantity of mounts utilized shall correspond directly to the anticipated weight being supported. Certain assemblies shall also incorporate a torsion spring. Helical coil springs shall be incorporated into specific mounts in tandem with the rubber isolators to minimize the stress absorbed by the body caused from chassis frame rail flexing. There shall be a ¼” thick UHMW polymer bearing washer between the body structure and each torsion mount. This washer shall provide dissimilar metals contact between the body structure and each mount. The UHMW bearing washer shall also act as a wear pad due to its low wear material properties.

There shall be no welding to the chassis frame rail sides, web or flanges, or drilling of holes in the top or bottom frame flanges between axles. All body to chassis connections shall be bolted so that in the event of an accident, the body shall be easily removable from the truck chassis for repair or replacement.

Because of the constant vibration and twisting action that occurs in chassis frame rails and suspension, the torsion mounting system is required to minimize the possibility of premature body structural failures. NO EXCEPTIONS.

OPERATORS PANEL

The pump operator's panel shall be located on the left upper side of the apparatus pump compartment. The panel shall be split into an upper and lower section. The left upper panel shall house all gauges and controls and be hinged to allow easy access to those components. The door shall have a stainless steel hinge, a dual point chrome push button latch and a rubber seal provided to prevent excessive moisture from entering or leaving the pump house.

The tubular structure shall be overlaid underneath the removable panels on each side of the compartment shall be made of brushed stainless steel.

Valve controls shall be immediately adjacent to its respective gauge. The valve controls shall be properly labeled and color coded for ease of use. All markings shall be permanent in nature.

Adequate illumination shall be provided for all gauges and controls by means of a shielded light assembly with three (3) Weldon 2030 lights on the left side or an adequate amount of lights space permitting and one directional light on the right side panel.

There shall be a switch located on the pump panel to turn two (2) of the pump panel lights and the directional light on or off. This switch shall also activate any area step lighting. The third light on the pump panel shall illuminate when the pump is engaged and it is "OK TO PUMP".

PUMP COMPARTMENT SERVICE ACCESS

The front portion of the pump compartment structure (directly behind the chassis cab) shall not be overlaid to provide an opening for access to the midship fire pump.

The structural framework of the pump compartment shall be self-supportive and independent of the apparatus body. The pump module shall be approximately 74" in width as measured laterally across the apparatus and approximately 70" in height. The width of the apparatus as measured longitudinally (measured within the wheelbase dimension of the apparatus) shall be specified in the remainder of the specifications.

The width of the pump compartment (front to back) shall be 44".

APPARATUS LABELING

The apparatus shall be descriptively tagged with color coded metal labels. The labels shall be applied near Apparatus features that require a user function description. Wherever necessary, the labels shall be color coded to differentiate controls and their respective functions to simplify and clarify complex configurations.

BEZELS FOR DISCHARGE GAUGES

Deluxe metal bezels shall be supplied around the discharge pressure gauges.

BEZELS FOR VALVE CONTROL HANDLES

Mirrored stainless steel bezels shall be supplied around the openings in the pump panels for all valve control handles.

BEZELS FOR DISCHARGES AND SUCTIONS

Mirrored stainless steel bezels shall be supplied around the openings in the pump panels for all discharge and suction fittings.

BRUSHED STAINLESS STEEL SIDE PANELS

The tubular structure shall be overlaid on each side of the pump compartment underneath the access panels and each shall be made of brushed stainless steel.

There shall be two (2) side pump panels on the right side of the pump compartment, one upper panel and one lower panel. The left, upper side panel shall be the pump operator's panel. Each upper panel shall be accessible by a quick-release type latch, closing against a door seal. Each lower panel shall be easily removed for a large access to the pump for service. All panels shall be manufactured from heavy duty brushed stainless steel, capable of withstanding the effects of extreme weather and temperature.

TESTING PORTS

There shall be a pressure and vacuum test gauge adapter with chrome plated plugs furnished and installed on the pump operator’s panel.

PRESSURE GOVERNOR, ENGINE INFORMATION AND MASTER GAUGE SYSTEM

A Crimson pressure governor, engine information display and master gauge intake and pressure display system shall be provided.

The pressure governor control system shall have two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between pressure and RPM modes. When the pump engaged interlock signal is recognized an OK TO PUMP indicator will light to indicate throttle ready and the governor shall be in pressure mode with the engine RPM set to idle. In pressure mode the governor shall automatically regulate the discharge pressure at the level set by the operator. In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The governor shall be waterproof and have lights to indicate PSI mode, RPM mode, and OK TO PUMP.

A means of monitoring chassis engine information shall be furnished and installed on the pump panel of the apparatus. The information system shall provide the pump operator with Engine RPM, Oil Pressure, Engine Temperature, and Electrical System Voltage. This unit shall also contain all required engine audible alarms including the low voltage alarm.

A means of monitoring master intake and master discharge pressure shall be furnished and installed on the pump

panel of the apparatus. They shall be capable of monitoring the master intake vacuum or pressure from -30 to 400 psi and the master discharge pressure from -30 to 400 psi.

SUCTION RELIEF VALVE

A suction relief valve with a range of pressure adjustment from 75 to 250 PSI shall be furnished, and installed inside pump compartment piped to the suction side of the pump. The valve shall be preset at 125 PSI suction inlet pressure. The valve shall be installed inside the pump compartment where it will be easily accessible for future adjustment. The excess water shall be plumbed to the atmosphere via the unloader pipe and shall dump on the opposite side of the pump operator. The valve shall come with 2 1/2" male NPT threads that can be capped if the relief valve fails in the open position. For normal pumping operations, the relief valve shall not be capped and there shall be a placard stating "DO NOT CAP" installed.

Pump Panel Harness for PSG

HEAT EXCHANGER

There shall be a supplementary heat exchanger cooling system furnished and installed for use of water from the discharge side of the fire pump through the engine compartment, without intermixing, for absorption of excess heat. The heat exchanger shall be adequate in size to maintain the temperature of the coolant in the pump drive engine not in excess of the engine manufacturer's temperature rating under all pumping conditions. Appropriate drains shall be provided to allow draining the heat exchanger to prevent damage from freezing. A manual shut-off valve shall be supplied at the pump operator's position.

PUMP COMPARTMENTTOP OVERLAY

The top of the pump compartment shall be an approved stepping surface constructed of embossed tread plate approved by the latest NFPA standards for abrasiveness.

EXTRUDED ALUMINUM BODY CONSTRUCTION

The complete apparatus body shall be constructed of a combination of structural tubing and formed sheet metal. These components shall be welded together utilizing an A.W.S. Certified welding procedure. This process shall ensure the quality of structural stability of the apparatus body.

Aluminum tubular extrusions with a minimal wall thickness of 1/8 inch shall be used in the construction of the structural framework. These extrusions shall be as thick as 1/4 inch in strategic locations for added body strength. Both 6061 T-6 and 6063 T-52 grade aluminum extrusions shall be used in the construction of the framework. The tubular construction shall form a framework which provides the structural integrity for the entire body module. Common sizes extrusions used for construction are 2-1/2" x 2-1/2" and 2-1/2" x 1".

Sheet metal Panels complete the structure by forming the compartmentation specified. Wherever this sheet metal serves as a load-bearing component, it shall be reinforced with structural tubular supports to ensure sound construction for lasting service. Body compartment floors shall be 'sweep-out' in design to aid in regular cleaning maintenance of the apparatus. In most areas, 1/8" 3003 sheeting is used, but may be substituted by 3/16" or 1/4" sheet if necessary in extreme load bearing applications.

Absolutely no dissimilar metals shall be used in the body and its supporting substructure without being separated by a sufficient corrosion and electrolysis inhibitor. Bodies which utilize "L" style brackets bolted to the chassis frame shall not be acceptable. Bodies which utilize a design that requires the compartments to be bolted to a separate sub-frame shall not be acceptable.

The interior of the compartments shall have a common wall construction. This will maximize the useable space by utilizing the exterior body overlays as interior compartment enclosures.

RUB RAILS

The bottom edge of the compartments and the rearward edge of the rear step shall be trimmed with rub rails to absorb minor damage while protecting the body. The rub rails shall be fabricated of brightly anodized aluminum channel. The rub rails shall be bolted in place with stainless steel bolts and locking nuts, and shall be spaced away from the body with 1/2" nylon spacers to help prevent the collection of water and debris. Each rub rail section shall be easily removable and replaced should it become damaged.

REAR TAILBOARD

The rear tailboard shall be fabricated of the same tubular materials as used in the apparatus body. The tailboard shall be an independent assembly welded to the rear body structural framing to provide body protection and a solid rear stepping platform. The rear step shall be designed to incorporate "crush zone" technology. This idea incorporates lighter materials in the tailboard than the body structure so the step will "crush" in a collision before the body structure.

The rear of the apparatus body shall be vertical in design - otherwise known as a 'flat-back'. On the rear body surface, a sign shall be attached that states: "DO NOT RIDE ON REAR STEP, DEATH OR SERIOUS INJURY MAY RESULT."

The rear tailboard and body shall be constructed such that the angle of departure shall be no less than 8 degrees at the rear of the apparatus when fully loaded (Per NFPA 1901).

The rear tailboard shall be approximately thirteen and one-half (13.5) inches deep and shall incorporate a 1/8" embossed aluminum tread plate overlay. The stepping area shall span the width of the apparatus, overlapping the perimeter of the structural tailboard framework. The embossed tread plate material shall meet the latest NFPA abrasiveness criteria for materials utilized in stepping and/or standing areas.

FOLDING STEPS

Each surface of the folding step shall have grip material with a minimum of 42 sq. inches in size. Each step shall be capable of sustaining a 500 lb. static load. The steps shall be manufactured by Austin/Thomas Hardware model #PHS100.

The following steps shall be installed:
Three (3) folding steps shall be installed on the left forward wall of the front compartment. These steps shall be utilized to access the water tank fill tower of the apparatus. The steps shall also be utilized to gain access to the top of the pump compartment structure and any equipment located in the immediate vicinity.

One (1) light(s) shall be mounted to illuminate stepping areas provided. Each light shall be Weldon chrome shielded 12 candle powers light. Each light shall be directed towards and positioned above the stepping surfaces.

One (1) 10" long x 1 1/4" diameter handrail constructed of knurled #3 polished stainless steel tubing shall be mounted in a best fit location above the step(s) to assist in climbing the steps according to NFPA 1901. There shall be a 2" minimum clearance between the bracket and the body.

Three (3) folding steps shall be installed on the left rear vertical face of the body.

One (1) light(s) shall be mounted to illuminate stepping areas provided. Each light shall be Weldon chrome shielded 12 candle powers light. Each light shall be directed towards and positioned above the stepping surfaces.

One (1) 10" long x 1 1/4" diameter handrail constructed of knurled #3 polished stainless steel tubing shall be mounted in a best fit location above the step(s) to assist in climbing the steps according to NFPA 1901. There shall be a 2" minimum clearance between the bracket and the body.

PAINT SPECIFICATIONS

All bright metal fittings, if unavailable in stainless steel, shall be heavily chrome plated.

Critical body and sub-frame area which cannot be primed after assembly shall be pre-painted.

All welded metal surfaces shall be ground to a smooth surface prior to a degreasing and high pressure, high temperature phosphatizing process. The entire surface shall then be sprayed with a non-chromate sealing compound to prevent formulation of stains or flash rust on previously phosphatized parts.

The paint applied to the apparatus shall be PPG Industries Delfleet® brand, applied throughout a multi-step process including at least two coats of each color and clear coat finish.

The coating shall be an infra red, baked air dried. The coatings shall provide full gloss finished suitable for application by high-pressure airless or conventional low pressure air atomizing spray.

The coatings shall not contain lead, cadmium or arsenic. The polyisocyanate component shall consist of only aliphatic isocyanates, with no portion being aromatic isocyanate in character. The solvents used in all components and products shall not contain ethylene glycol mono-ethyl ethers or their acetates (commercially recognized as

cellosolves), nor shall they contain any chlorinated hydrocarbons. The products shall have no adverse effects on the health or nor present any unusual hazard to personnel when used according to manufacturers recommendations for handling and proper protective safety equipment, and for its intended use.

The coating system, as supplied and recommended for application, shall meet all applicable federal, state and local laws and regulations now in force or at any time during the courses of the bid.

The manufacturer shall supply (upon request) for each product and component of the system, a properly complete OSHA "Material Data Safety Sheet".

The following documents of the issue in effect on the date of the invitation to quote form a part of this document to the extent specified herein:

Federal Standards: Number 141A and 141B paint, varnish, lacquer and related material: methods of inspection, sampling, and testing.
Military Standard: MIL-C 83486B Coating, Urethane, aliphatic Isocyanate, for Aerospace applications.
Industry Methods and Standards: ASTM Method of Analysis (American Society for testing and Materials). BMS 10-72A (Boeing Material Specifications).

The coating will meet the following test performance properties as a minimum standard.

[redacted]				
Impact Resistance G 14 80 inch-lbs. direct and reverse. Primer/ Topcoat				
Adhesion D 3359 Method B 4 minimum Primer/ Topcoat				
Water Immersion Resistance (deionized water, 240 hr., 25 C)	Corrosion Blisters Adhesion Pencil Hardness	D 610 D 714 D 3359 D 3363 10 10 4 minimum F minimum Primer/ Topcoat		
C)Oil Immersion (10W-30, 240 hr., 25	Corrosion Blisters Adhesion Pencil Hardness	D 610 D 714 D 3359 D 3363	10 10 4 minimum F minimum	Primer/ Topcoat
Salt Spray Exposure	 Scribed unit Unscribed unit	 D 1654 B 1117	1000 hours 7 minimum 8 minimum	Primer/ Topcoat
Humidity Resistance	D 1735		1000 hours (no effect)	Primer/ Topcoat
Pencil Hardness	D 3363		F Minimum	Primer/ Topcoat
QUV Resistance	D 4587		Gloss Retention 80% After 1000 hours	Primer/ Topcoat
Gloss DOI	D 523-89		90% (20 degree)	Primer/ Topcoat

The entire exterior body structure (excluding roll-up doors) shall receive the primer coats and the finish coats. The apparatus body, will be painted in a down draft type paint booth to reduce dust, dirt or impurities in the finish paint. The painted surfaces shall have a finish with no runs, sags, craters, pinholes or other defects.

ZOLATONE COMPARTMENT FINISH

The compartment interiors shall be coated with silver gray Zolatone. Zolatone is a polychromatic, modified nitrocellulose coating with a flat background color under accenting fleck colors. Zolatone is VOC Compliant, isocyanate and lead free. This coating system provides an unusual decorative and camouflaging effect that is also durable, flexible and simple to maintain and repair when needed.

Zolatone durable finish requires no special maintenance and can be washed and waxed just like paint. Zolatone resists many common solvents and wear from abrasion, scratching and chipping in normal everyday use.

The apparatus body shall be painted to match the chassis.

WHEELS

The wheels shall be finish coated by the OEM. No other painting shall be done.

GENERAL BODY DETAILS

All compartmentation shall be constructed in a sweep out design to be water and dust proof, manufactured to the maximum possible storage capacity.

FASTENERS

All bolts and nuts used in the finish construction of the apparatus shall be coated stainless steel to help prevent dissimilar metal electrolytic reaction and corrosion. The Manufacturer may be requested to supply evidence of fastener coating and results of salt spray testing when dissimilar metals are used. Any bolt extending into a compartment or into the hose bed area shall have an acorn nut attached or be protected in such manner where sharp edges are avoided.

WHEEL WELLS

Wheel wells shall have semicircular black polymer composite inner liners that are bolted to the wheel well panel and supported inboard by brackets that are connected to the body framework. Each wheel well shall be a continuous piece with no breaks or ledges where road grime or debris may accumulate. This liner shall be removable for access to suspension assembly for repairs. There shall be no exception to the bolted wheel well inner liner requirement.

WHEEL WELL PANELS

The body panel area around the wheel well on each side of the body shall be fabricated of aluminum diamond plate.

SCBA BOTTLE COMPARTMENTS

Cylindrical SCBA storage compartments shall be installed in the wheel well area above the wheel well liner, protected from dirt, rocks, and other debris. The storage compartments shall be made of a tube that interfaces with a spring loaded cast aluminum door and housing - fastened to the wheel well panel for a secure installation. The inside of each compartment shall be lined with material (if required) to protect the air bottles from being damaged. The storage compartments shall be installed in the apparatus tipped slightly inboard at an angle which sufficiently reduces the tendency of the bottle to slide outward when the door is opened. There shall be holes drilled in the tubes for drainage in the event that water enters the compartment. Each SCBA compartment shall be a minimum internal diameter of 7.5" and be at least 25" deep. There shall be two (2) compartments on each side of the apparatus with one forward and one rearward of each wheel well.

TORSION BODY MOUNTING SYSTEM

The entire body module assembly shall be mounted so that it “floats” above the chassis frame rails with vibration and torsion isolator assemblies. The body substructure shall be mounted above the frame to allow independent flexing to occur between the body and the chassis. Each assembly shall be mounted to the chassis frame rails with steel, gusseted mounting brackets. Each bracket shall be powder coated for corrosion resistance. Each body mount bracket shall be mounted to the side chassis frame flange with two 5/8”-UNC Grade 5 HHCS.

Each assembly shall have a two-part rubber vibration isolator. The isolator shall be of a specific durometer to carry the necessary loads of the apparatus body, equipment, tank, water, and hose. The quantity of mounts utilized shall correspond directly to the anticipated weight being supported. Certain assemblies shall also incorporate a torsion spring. Helical coil springs shall be incorporated into specific mounts in tandem with the rubber isolators to minimize the stress absorbed by the body caused from chassis frame rail flexing. There shall be a ¼" thick UHMW polymer bearing washer between the body structure and each torsion mount. This washer shall provide dissimilar metals contact between the body structure and each mount. The UHMW bearing washer shall also act as a wear pad due to its low wear material properties.

There shall be no welding to the chassis frame rail sides, web or flanges, or drilling of holes in the top or bottom frame flanges between axles. All body to chassis connections shall be bolted so that in the event of an accident, the body shall be easily removable from the truck chassis for repair or replacement.

Because of the constant vibration and twisting action that occurs in chassis frame rails and suspension, the torsion mounting system is required to minimize the possibility of premature body structural failures. NO EXCEPTIONS.

BODY STRUCTURE WIDTH

The width of the apparatus body from the outside of the left compartments to the outside of the right compartments shall be 99" excluding any attached peripherals such as rub rails, fenderettes, grab handles, etc.

COMPARTMENT VENTILATION

To allow for proper air circulation & flow, each compartment shall have a venting route. For example: All upper compartments (if apparatus is so equipped) shall vent into the lower compartments. The lower compartments shall be vented into the wheel well area by a high grade foam filter frame assembly. The filter locations shall be determined by what's best-fit for each body configuration. The venting filter shall be easily removable for cleaning and shall be treated to prevent mildew.

COMPARTMENTATION

The following compartments shall be supplied on the apparatus:

Compartment "L1": There shall be one (1) full height compartment ahead of the rear wheels on the left side of the apparatus. The approximate interior dimensions of this compartment shall be a minimum of 33.5" wide by 69" high with a lower depth of 25.5" and an upper depth of 12.5". The door opening shall measure approximately 28" wide by 60" high. The compartment will have approximately 25 cubic feet of space.

Compartment "L2": There shall be one (1) compartment located directly over the rear wheels on the left side of the apparatus. The approximate interior dimensions of this compartment shall be a minimum of 62" wide by 35" high with a depth of 12.5". The door opening shall measure approximately 59" wide by 26" high. The compartment will have approximately 15.5 cubic feet of space.

Compartment "L3": There shall be one (1) full height compartment located behind the rear wheels on the left side of the apparatus. The approximate interior dimensions of this compartment shall be a minimum of 49" wide by 69" high with an upper depth of 12.5" and the lower portion being transverse into the rear compartment. The door opening shall measure approximately 43.5" wide by 60" high. The compartment will have approximately 42.5 cubic feet of space.

Compartment "B1": There shall be one (1) compartment located at the rear of the apparatus, directly below the hose bed access area. The approximate dimensions of this compartment shall be 62" high with a depth of 33" with the sides of the compartment being open to the side compartments for maximum storage area. The compartment will have approximately 28.5 cubic feet of space.

Compartment "R1": There shall be one (1) compartment located ahead of the rear wheels on the right side of the apparatus. The approximate interior dimensions of this compartment shall be a minimum of 33.5" wide by 33" high with a depth of 25.5". The door opening shall measure approximately 28" wide by 24" high. The compartment shall have approximately 16 cubic feet of space.

Compartment "R2": There shall be one (1) compartment located behind the rear wheels on the right side of the apparatus. The approximate interior dimensions of this compartment shall be a minimum of 49" wide by 33" high. There shall be no back wall installed in this compartment, resulting in a large transverse area. The door opening shall measure approximately 43.5" wide by 24" high. The compartment shall have approximately 23.5 cubic feet of

FULL HEIGHT REAR CENTER COMPT

The rear center compartment of the apparatus shall be full height, as high as possible as determined by water tank height. The compartment shall have a roll-up door installed. The door opening shall be approximately 43" wide and 45" high.

ROBINSON BRAND ROLL-UP DOOR

A roll up door shall be Robinson brand. Door slats to be of a double wall box frame extrusion. Exterior surface shall be flat, interior surface shall be concave to prevent loose equipment from jamming the door. Slats will be anodized to prevent oxidation. Slats to have inner-locking end shoes on every slat secured by a Punch-Dimple process. Slats shall have interlocking joints with a folding locking flange. Between each slat is a PVC/Vinyl inner seal to prevent any metal to metal contact.

The track to be a one piece aluminum which has an attaching flange and finishing flange incorporated into its design which facilitates installation and provides a finished look to installation without additional trim or caulking. The track to have a replaceable side seal. Side seal prevents water and dust intrusion into the compartment.

A drip rail will have a built in replaceable wiper seal. The drip rail to be made of aluminum. Roll-up door to have a 4" diameter counterbalance to assist in lifting and to eliminate the risk of accidental closing. The door shall be secured by a full width lift bar, operable by one hand even with heavy gloves. Securing method will be a positive latch device.

The rear center compartment door shall be left a natural satin aluminum finish.

COMPARTMENT UNISTRUT

Vertically mounted unistrut shall be installed in two (2) full height compartments of the apparatus body to accommodate mounting shelves, trays, and other miscellaneous equipment items.

COMPARTMENT UNISTRUT

Vertically mounted unistrut shall be installed in the rear center compartment of the apparatus body to accommodate mounting shelves, trays, and other miscellaneous equipment items.

DOOR CONSTRUCTION

All horizontal and vertical side compartment doors shall be roll-up style doors.

ROBINSON BRAND ROLL-UP DOORS

Roll up doors shall be Robinson brand. Door slats to be of a double wall box frame extrusion. Exterior surface shall be flat, interior surface shall be concave to prevent loose equipment from jamming the door. Slats will be anodized to prevent oxidation. Slats to have inner-locking end shoes on every slat secured by a Punch-Dimple process. Slats shall have interlocking joints with a folding locking flange. Between each slat is a PVC/Vinyl inner seal to prevent any metal to metal contact.

Track to be one piece aluminum which has an attaching flange and finishing flange incorporated into its design which facilitates installation and provides a finished look to installation without additional trim or caulking. Track to have a replaceable side seal. Side seal prevents water and dust intrusion into the compartment.

Drip rail will have a built in replaceable wiper seal. Drip rail to be made of aluminum. Roll-up door to have a 4" diameter counterbalance to assist in lifting and to eliminate the risk of accidental closing. The door shall be secured by a full width lift bar, operable by one hand even with heavy gloves. Securing method will be a positive latch device.

The compartment doors shall be left a natural satin aluminum finish.

DOOR OPEN INDICATOR

Each roll up door shall have an integral door open indicator magnet in the lift bar. If the bar is not properly closed, it shall activate the "Door Open" light in the cab.

Brushed stainless steel sill plates shall be installed at the bottom of each body compartment door opening.

HOSE STORAGE

A hose bed shall be provided with a minimum of thirty (30) cubic feet of storage space. The hose bed shall have a slotted 1/4" aluminum flooring installed to allow drainage through the tank cavity to the ground below. The aluminum flooring shall be manufactured in two discrete sections to allow for easy removal and replacement for tank area access. The area shall be free of sharp edges to protect the hose when loaded or distributed.

The walls of the hose bed shall be 80" tall, measured from the bottom edge of the compartments to the top flange.

VINYL COATED NYLON HOSE BED COVER

There shall be a hose bed cover furnished that is made of vinyl coated nylon. The cover shall be held in place by extruded aluminum channel on the front and velcro on the sides. The cover shall have a flap that extends down over the rear of the hose bed which shall be described below.

The cover shall have a flap that extends down over the rear of the hose bed which shall be fastened by an elastic shock cord sewn into the tarp with brass grommets where the shock cord passes through the hose bed cover. Hooks shall be provided on the lower corners to provide a means of attaching the cover to the apparatus. The hooks shall be made of cast aluminum.

The hose bed cover shall be red.

The hose bed shall accommodate the following hose loads:

Qty	Size
800'	2-1/2"

HOSE BED DIVIDER(S)

There shall be one (1) divider(s) installed in the hose bed. The divider(s) shall be fabricated of 1/4" thick aluminum plate with a double sided reinforcement where it is attached to the adjustable slide rails. The rear of the divider(s) shall have a radius to provide a smooth corner. Hose payout shall be unobstructed by the divider(s).

DUNNAGE AREA

A vertical bulkhead shall be installed at the front of the hose bed area, just behind the water tank fill tower, forming a storage area that is separated from the hose bed. The rear face of the bulkhead shall serve as a mounting surface for the hose bed dividers, resulting in the ability to move any hose bed divider across the entire width of the hose bed.

FENDERETTES

Two (2) polished stainless steel fenderettes shall be provided on body rear wheel well openings, one (1) each side. A rubber welting shall be provided between the body and the crown to seal the seam and restrict moisture from entering. A dielectric barrier shall be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.

TANK CAPACITY

The tank shall be 1000 gallons in capacity.

TANK LEVEL GAUGE

A Fire Research Tank Vision LED water tank level indicator shall be installed on the pump operator instrument panel. The gauge shall provide the pump operator with an accurate reading of the water tank level. A beveled lens shall be incorporated into the indicator that protrudes from the module to allow viewing of the water tank level by personnel when not standing directly in front of the display.

The tank level gauge shall utilize a pressure transducer mounted on the outside of the tank for sensing water levels without the use of a probe.

POLYPRENE TANK

The booster tank shall be constructed of 1/2" thick polypropylene sheet stock which is a non-corrosive stress relieved thermoplastic. It shall be designed to be completely independent of the body and compartments. All joints and seams are extrusion welded and/or contain the "Bent Edge" and tested for maximum strength and integrity. The top of the booster tank is fitted with lifting eyes designed with a 3 to 1 safety factor to facilitate tank removal.

COVER: The tank cover shall be constructed of 1/2" thick polyprene and shall be recessed. A minimum of two lifting dowels shall be drilled and tapped 1/2" x 2" to accommodate the lifting eyes.

BAFFLES: The swash partitions are manufactured of 1/2" polyprene. All partitions are equipped with vent and air holes to permit movement of air and water between compartments to provide to provide maximum water flow. All swash partitions interlock and are welded to one another as well as to the walls of the tank.

MOUNTING: The tank shall rest on the sub-frame cross members with an unsupported area not to exceed 530 square inches on tanks up to 40" in height. On tanks over 40" in height, an unsupported area of not more than 400 square inches must be maintained. All tanks shall be isolated from those cross members with a minimum of 2" x 1/4" hard rubber strips that are 60 durometer in hardness. The tank shall sit cradle mounted in the under body sub-frame and shall be completely removable without disturbing the body side panels. The sub-frame shall consist of 3" x 1 1/2" channel cross members and 3" x 1 1/2" channel which shall extend around the entire perimeter of the tank and be welded to the cross-members. The channels will keep the tank from shifting front to back or side to side.

FILL TOWER: Fill opening shall be approximately 12" x 12". The tower will have a 1/4" thick removable polyprene screen and a polyprene hinged type cover that will open if the tank is filled at an excess rate. There shall be a removable 1/4" thick polyprene screen to prevent debris from falling into the tank. The fill tower shall have a 6" overflow that will discharge underneath the tank, behind the rear wheels. The overflow shall terminate above the tank water level when filled to the rated capacity.

The fill tower shall be located in the left front hose bed.

SUMP: The sump will be constructed of 1/2" polyprene and be located inline with the tank suction valve. There shall be a 4" schedule 40 polyprene tube installed that will run from the suction outlet to the sump location. The tank will have an anti-swirl plate located approximately 2" above the sump.

The sump shall have a 3" plug for use in draining and cleaning out the tank.

OUTLETS: In addition to the tank suction valve outlet located in the sump, there shall be an outlet provided for the tank fill valve. If there are any additional options selected (such as an extra tank suction or direct tank inlets), there shall be additional outlets provided to accommodate these items.

LADDER MOUNTING

Provision to mount ground ladders shall be provided above the low compartments. Ladder mounting brackets shall be heavy cast aluminum with 1/4" thick plastic wear pads to prevent wear on ladders. A quick release latch shall be installed between to two cast brackets to retain the ladders. The latch mechanism shall a be polished chrome plated quarter turn type that is capable of releasing one ladder while retaining the second ladder. Stainless steel trim shall be furnished and installed where ladders may come in contact with painted surfaces.

The ladder brackets shall be bolted to the side of the body in strut channels to eliminate the need to drill holes.

The ladder rack shall be located on the right side of the apparatus body.

The ladder rack shall accommodate mounting one (1) 14 foot aluminum roof ladder and one (1) 24 foot two section aluminum Duo-Safety extension ladder.

HARD SUCTION STORAGE

One (1) hard suction hose carrier(s) shall be provided. The carrier(s) shall be constructed of aluminum and anodized for a durable, long lasting finish. There shall be (2) hold-downs, one at each end, which shall hold the hard suction hose on each tray.

One (1) hard suction carrier(s) shall be located on the left side above the apparatus compartments.

One (1) hard suction carrier(s) shall be located on the right side, above the apparatus compartments.

COMPARTMENT DIVIDERS

Sheet metal compartment dividers shall be installed in the over-wheel compartments. These dividers shall aid in keeping loose equipment from falling into the front and/or rear compartments.

OVERLAY DETAILS

Diamond plate used as overlay material on the apparatus shall be bright finish, 3003-H14 and a minimum of 1/8"

thick. The underside of the material shall first be coated with a 3M sealant to provide a dielectric barrier between the aluminum overlay and the stainless steel body.

After the coating has been applied, the overlay material shall be installed primarily using adhesive designed to join dissimilar metals. Stainless steel screws that have been coated with additional dielectric material and locking nuts shall then be installed in strategic areas to ensure full contact as the adhesive cures. Under no condition shall plastic or fiber washers which can cause pooling of water or "wicking" of water into screw holes be used in the installation of the aluminum tread plate overlays.

Overlay aluminum shall be installed in the following areas:

- Front compartment vertical areas on both sides, wrapping around each side.

- Rear vertical areas of the apparatus below the hose bed and above the rear step.

- Left and right horizontal areas over the side compartments.

The catwalks shall be approved stepping surfaces constructed of knurled tread plate approved by the latest NFPA standards for abrasiveness.

KNURLED SST INSERT HAND RAILS

There shall be three (3) hand rails installed on the rear of the apparatus. Each hand rail shall provide approximately 42 inches of gripping area for personnel. Each hand rail shall be constructed of a knurled #3 polished stainless steel tubing to provide a positive grip. The handrails shall be spaced away from the body using chrome plated ends. Two (2) vertical hand rails shall be installed, one on each side, just below the hose bed sides. The remaining hand rail shall be installed horizontally, just below the hose bed area.

REAR TOW EYE

There shall be a rear tow eye attached to the frame rails. The location of the tow eye shall be below the rear center compartment.

The tow eye shall be manufactured of 1" plate steel that is bolted to the chassis frame rail with a minimum of 6 grade 5 bolts. The plate shall be braced to the opposite frame rail to offset forces placed at an angle to the chassis frame.

LOW-VOLTAGE ELECTRICAL SYSTEM

The apparatus shall be equipped with a Logic Controlled, Low-Voltage (12v) Electrical System compliant with the latest revision of the NFPA 1901 guideline.

The system shall be capable of performing total load management, load management sequencing, and load shedding via continuous monitoring of the low-voltage electrical system. In addition, the system shall be capable of switching loads (like operating as an emergency warning lamp flasher) eliminating the dependency on many archaic electrical components such as conventional flasher modules. The system shall also incorporate provisions for future expansion or modification.

The low-voltage electrical system shall be designed to distribute the placement of electrical system hardware throughout the apparatus thereby enabling a smaller, optimized wire harness. The programmable, logic controlled system shall eliminate redundant electrical hardware such as harnesses, circuit boards, relays, circuit breakers, and separate electrical or interlock subsystems and associated electronics for controlling various electrical loads and inputs.

As-built electrical system drawings and a vehicle-specific reference of I/O shall be furnished in the delivery manuals. These drawings shall show the electrical system broken down into separate functions, or small groups of related functions. Drawings shall depict circuit numbers, electrical components and connectors from beginning to end. **A single drawing for all electrical circuits installed by the apparatus builder shall not be accepted**.

LED DOT LIGHTING

There shall be seven (7) lights located on the rear of the vehicle. Three (3) of the lights shall be mounted as high as possible on the rear face of the body for use as identification lamps. Two (2) lights shall be located as high and wide as possible on the rear, one each side and two (2) lights as high as possible on the sides facing the side, for

use as clearance lamps.

There shall also be two (2) amber intermediate turn signals on the sides of the apparatus (one (1) each side) between the front and rear axles for identification and turn signaling as required.

The lights shall be Weldon brand 9186-1500 series LED red and amber markers.

REAR TAIL LIGHT CLUSTER

There shall be a rear tail light cluster furnished and installed in a polished bezel at the rear of the apparatus, one each side. The cluster shall be manufactured by Whelen and consist of the following:

1 - Whelen #60 LED series red brake light
1 - Whelen #60 Clear backup light (Halogen)
1 - Whelen #60 LED series amber turn signal light populated in the shape of an arrow

Each tail light cluster shall be mounted on a removable panel of the same material as the rear overlay for easy access to the electrical distribution centers at each rear corner of the apparatus body.

BACKUP LIGHTS

The backup lights shall illuminate when the apparatus is placed in reverse.

PUMP/TRANSVERSE COMPARTMENT LIGHTING

There shall be one (1)12 volt work light(s) installed in the pump/transverse compartment. Each light shall be activated with a switch located on each light and shall be enclosed in an ABS case. Each light head shall be removable and have a retractable wire that can be extended a minimum of 10 feet to allow maintenance personnel to relocate and direct the light as needed.

COMPARTMENT LIGHTING

There shall be one (1) light mounted in each body compartment. The light in each compartment shall be on a separate circuit, turning on only those lights that have open compartment doors. The lights shall be manufactured by Weldon and be model #2030.

PERIMETER LIGHTS

There shall be six (8) underbody perimeter lights furnished and installed. One (1) each side under the chassis cab steps, one (1) under each side of the front of the body, and two (2) under the rear step to illuminate the ground around the truck. Lighting designed to provide illumination on areas under the driver and crew riding area exits shall be switchable but activate automatically when the exit doors are open. All other ground area lighting shall be switchable. The lights shall be manufactured by Trucklite and be model # 40003.

UPPER LIGHTING PACKAGE

The following NFPA lighting package, manufactured by Whelen, shall be supplied and installed in the upper areas of the vehicle.

ZONE A: There shall be a 55" Edge Ultra Freedom light bar installed. The light bar shall house two (2) corner red linear LEDs, two (2) front red linear LEDs, two (2) front white linear LEDs and two (2) side red linear LEDs. The outer lenses shall be clear. The light bar shall be manufactured by Whelen and be model FN55QLED.

ZONE C: There shall be two (2) Whelen beacons, with halogen rotators and dual reflectors installed at the rear upper outboard corners of the apparatus. The beacons shall be model RB6RP with red lenses.

CAST ALUMINUM LIGHT STANCHIONS

Two light stanchions shall be mounted in the upper rear corners of the body sides, one each side. Each shall be large enough to accommodate an upper zone C rotating beacon and a hose bed light if specified. The DOT lights specified elsewhere in the quote shall also be located one on the side and the other located on the rear of each stanchion.

LOWER LED WARNING LIGHTING

ZONE A: There shall be two (2) Whelen models 60R02FCR 4"x6" flashing red linear Super-LED lights with clear lenses and chrome bezels installed on the front of the chassis specified.

ZONES B&D: There shall be six (6) Whelen models 60R02FCR 4"x6" flashing red linear Super-LED lights with clear lenses and chrome bezels installed three (3) on each side of the apparatus.

ZONE C: There shall be two (2) Whelen model 60R02FCR 4"x6" flashing red linear Super-LED lights with clear lenses and chrome bezels installed on the rear of the body.

LOWER ZONES B&D CAST ALUMINUM LIGHT HOUSING

A cast aluminum light housing shall be used for the rearmost warning light in zones B&D to ensure the light is mounted as far rearward as possible.

HOSE BED SPOTLIGHT

There shall be one rear flood light furnished and installed at the rear of the apparatus. It shall be 6" in diameter and be 50 watts. The light shall be manufactured by Unity.

REFLECTIVE STRIPING

There shall be a 4" inch reflective "Scotch-lite" stripe applied to the outside perimeter of the chassis and apparatus.
SHOP NOTES
Do not install until a customer orders

The reflective striping shall be applied around the perimeter of the apparatus in a straight line.

The reflective striping shall be white in color.

EQUIPMENT

The following equipment shall be supplied by the Apparatus Manufacturer:

MISC EQUIPMENT (e/se)

ZICO WHEEL CHOCKS

One (1) set(s) of NFPA compliant Ziamatic folding wheel chocks model # SAC-44 shall be supplied with the apparatus

ZICO WHEEL CHOCK MOUNTING BRACKETS

One (1) set(s) Ziamatic folding wheel chock underbody horizontal mounts model # SAC-44-H shall be furnished and installed on the apparatus under the body in front of the rear wheels.

GROUND LADDERS

- One (1) Duo-Safety 24' two (2) section aluminum extension ladder(s), model 900A

- One (1) Duo-Safety 14' aluminum roof ladder(s) with folding hooks, model 775A

- One (1) Duo-Safety 10' folding aluminum attic ladder(s), model 585A

HARD SUCTION HOSE

Two (2) 10' length(s) of 6" clear PVC hose(s) with lightweight couplings shall be supplied and installed on the apparatus.

STRAINERS

91-50-4000
One (1) 6" Chrome plated barrel strainer(s) shall be supplied with the apparatus.