Hartsel Fire Protection District

Fire Department Name

Hartsel Fire Protection District

BID SPECIFICATIONS

FOR

ROSENBAUER CUSTOM PUMPER

Overall Height Restriction, NONE

OVERALL HEIGHT

An overall height restriction has not been specified for this apparatus.
Overall Length Restriction, NONE

OVERALL LENGTH

An overall length restriction has not been specified for this apparatus.
Overall Width Restriction, NONE

Hartsel Fire Protection District

OVERALL WIDTH

An overall width restriction has not been specified for this apparatus.
Wheelbase Restriction, NONE

WHEELBASE

A wheelbase restriction has not been specified for this apparatus.
Angle of Approach, NFPA Minimum, 8 Degrees

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 the NFPA 1901 Guideline.
Angle of Departure, NFPA Minimum, 8 Degrees

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 the NFPA 1901 Guideline.
NFPA Equipment Allowances

NFPA Mobile Water Equipment Allowance 1000#

NFPA MOBILE WATER EQUIPMENT ALLOWANCE

In compliance with the current NFPA 1901 guidelines, the apparatus shall be engineered to provide an allow of 1000 pounds of fire department provided loose equipment.

Contract Change Notice

CONTRACT CHANGE NOTICE

The quoted delivery time is based upon our receipt of the specified materials required to produce the apparatus in a timely manner. "Delivery" means the date company is prepared to make physical possession of vehicle available to the customer.

The Company shall not be responsible nor deemed to be in default on account of delays in performance due to causes which are beyond the Company's control which make the Company's performance impracticable, including but not limited to civil wars, insurrections, strikes, riots, fires, storms, floods, other acts of nature, explosions, earthquakes, accidents, any act of government, delays in transportation, inability to obtain necessary labor supplies or manufacturing facilities, allocation regulations or orders affecting materials, equipment, facilities or completed products, failure to obtain any required license or certificates, acts of God or the public

enemy or terrorism, failure of transportation, pandemics, epidemics, quarantine restrictions, failure of vendors (due to causes similar to those within the scope of this clause) to perform their contracts or labor troubles causing cessation, slowdown, or interruption of work.

After execution and acceptance of this Purchase Process, the Buyer may request that the Company incorporate a change to the Products or the Specifications for the Products by delivering a Change Order to the Company; provided, however, that any such Change Order must be in writing and include a description of the proposed change sufficient to permit the Company to evaluate the feasibility of such Change Order. Within seven (7) working days of receipt of a Change Order, the Company will inform the Buyer in writing of the feasibility of the Change Order, the earliest possible implementation date for the Change Order, of any increase or decrease in the Purchase Price resulting from such Change Order, and of any effect on production scheduling or delivery resulting from such Change Order. The Company shall not be liable to the Buyer for any delay in performance or delivery arising from any such Change Order. Purchase Price may be modified only by mutual written agreement of the Parties because of changes to the Apparatus required or requested by the Buyer during the construction process pursuant to Appendix C, Change Order Policy. Any changes in the Purchase Price resulting from changes to the Apparatus required or requested by the Buyer during the construction process shall be stated in the Change Order signed by both parties. Additional Changes: If various state or federal regulatory agencies (e.g., NFPA, DOT, EPA) require changes to the specification and/or the product that result in a cost increase to comply therewith this cost will be added to the Purchase Price to be paid by the customer.
Financial Stability Response

FINANCIAL STABILITY SPECIFICATIONS

With high-profile instances of fire apparatus manufacturers encountering financial difficulties, it is imperative that fire departments be diligent in evaluating the financial position of the companies they solicit to build on their emergency response vehicles. A contract entered into with a company on shaky ground is a dangerous prospect, since conducting business with a manufacturer in such condition could open the department to monumental problems.

Take, for instance, the growing theme of manufacturers *requiring* as opposed to *offering* pre-payment and progressive payment options with a corresponding discount off the price of a vehicle. Such offers are made with an ulterior motive in mind, as it can be generally inferred that manufacturers requiring pre-payments and progressive payments do so because they need your cash *today* to fund production of other vehicles already in the backlog.

Should problems arise, as has been the case in situations too numerous to mention, your department risks losing any down payments already made or even the entire cost of a piece of equipment should certain pre-pay discount situations go awry.

While pre-payment discounts may be enticing, it is important to know just how stable the manufacturer seeking your funds is before you make that commitment. If you enter into one of these agreements and the manufacturer hits a rough patch, it is you that will be hurting, because your funds may not be recoverable. However, if you

enter into a contract with a financially sound manufacturer, you will reap all of the benefits of a well-built truck at a lower cost. You may equally, by taking advantage of the time-value of money, be able to afford more truck than initially thought, because funds saved by leveraging pre-payment options could allow you get some added features that you might not necessarily have been able to afford.

With this in mind, it must be noted that Rosenbauer is a company with rock-solid financial stability. This is a statement not made lightly, as we can prove it to you. We can provide language that you can insert into your bid specifications that stipulates that in order for bids to be accepted by a fire department, the company bidding must meet several fiscal criteria.

The first criteria call for the successful bidder to meet a debt-to-equity ratio not exceeding a 2.0 rating. Rosenbauer presently stands at a 1.51 rating, which is well-below the accepted rating. This low number results from Rosenbauer owning more assets with a marginal debt service. This means we are not using lenders to fund our operations, nor our growth.

The second requirement is that the debt coverage ratio of the successful body builder exceeds a 100 rating. The higher the number, the better able a company is to meet its payment obligations with banks and creditors. Rosenbauer's number is at 279.6, which is nearly three times the required amount. The higher the debt coverage ratio, the easily and more fluidly a company is positioned to pay its monthly obligations and operating costs.

The third criteria require that the equity ratio of the successful bidder must exceed .30 rating. A higher equity ratio indicates that the body builder has increased flexibility to meet its financial obligations which translates into greater financial stability. Rosenbauer currently has an equity ratio of .387 which is well above the accepted rating and an excellent indicator of financial strength.

When exploring and evaluating various manufacturers to consider for building your apparatus, there is little doubt you will find one that stands on as firmly a financial ground as Rosenbauer. While others are experiencing stressful issues that raise doubts as to the company's long-term viability, Rosenbauer continues to demonstrate a strengthening of its financial position in the apparatus manufacturing industry. Because Rosenbauer meets and exceeds all the above-stated financial bid requirements, we are best positioned to ensure customers of a strong relationship with the company, which cannot be claimed by most of our competitors in this volatile market.

The Rosenbauer America Dun and Bradstreet number is 02-447-3584. To acquire a Dun and Bradstreet report, telephone them at 1-800-234-3867 (in Canada 800-463-6362) or visit their web site address at www.dnb.com. Dun and Bradstreet is nationally recognized, independent financial analysis company.
Electronic Stability Control

ELECTRONIC STABILITY CONTROL

Electronic stability control shall be supplied on the chassis.

Hartsel Fire Protection District

Technical Drawings, Representative Drawings (3-View) (Left/Right/Rear)

ENGINEERING BLUEPRINTS

ROSENBAUER has submitted "proposal" blueprints which are “representative” of the vehicle being proposed and these have been generated on computer-aided-design (CAD) equipment.

The blueprints are provided as follows:

Sheet No. 1:

- Left side exterior view
- Right side exterior view
- Rear exterior view

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

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

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

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

Change Orders

CHANGE ORDERS

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

Performance Bond

PERFORMANCE BOND

Hartsel Fire Protection District

A 100% Performance Bond, which guarantees delivery AND performance must be supplied by the successful bidder within 20 days of award of the contract. Supply Bonds will not be accepted in place of the requested Performance Bond. Bond must be supplied by the manufacturer of the apparatus. Bonds furnished by salesman or other agents will not be accepted. BIDDER SHALL INDICATE INTENTION TO PROVIDE THE REQUIRED PERFORMANCE BOND IN THE PROPOSAL PACKET.
Inspection Trip

INSPECTION TRIPS

Inspection trip(s) for Fire Department personnel shall be made to the facility during the course of construction of the apparatus. Successful bidder shall consult with Fire Department committee chairperson as to the proper timing of the inspection trip(s). Air travel (for distances over 250 miles), meals, and lodging expenses shall be included. BIDDER SHALL INDICATE INTENTION TO PROVIDE THE REQUIRED INSPECTION TRIP(S) IN THE PROPOSAL PACKET.
Warranty, Apparatus, Body Warranty, 1 Year

BODY WARRANTY

The manufacturer shall provide a one (1) year body warranty. The manufacturer shall supply details of their warranty information with their bid submission.
Warranty, Body, Aluminum, 5 Years

ALUMINUM BODY WARRANTY - FIVE YEAR

The manufacturer shall provide a five (5) year structural and corrosion perforation warranty for the fabricated aluminum body. The manufacturer shall supply details of their warranty information with their bid submission.
Warranty, Subframe, 5 Year Steel

STEEL 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 steel 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 a period of five (5) years of ownership by the original purchaser. This warranty terminates upon transfer of possession or ownership by the 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.*
Warranty, Paint, PPG, 5 Years

PAINT WARRANTY FIVE YEAR

The manufacturer shall provide a five (5) year paint warranty for all portions of the apparatus that they have painted. The manufacturer shall supply details of their warranty information with their bid submission.
Warranty, Lettering and Striping, 1 Year

LETTERING WARRANTY

The manufacturer shall provide a one (1) year warranty for the lettering and striping applied to the apparatus. The manufacturer shall supply details of their warranty information with their bid submission.
Pump Warranty, Hale Lmtd Std, 5 Yrs, (2 yrs P/L 3 yrs P)

FIRE PUMP WARRANTY

A five (5) year warranty on the Hale fire pump shall be provided. The warranty shall be parts and labor for the first 2 years and parts only for years 3 through 5. The manufacturer shall supply details of their warranty information with their bid submission.
Plmbg Warranty, Stainless Steel, 10 Years

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, Body Complete, 1 Set Printed

BODY MANUAL - PRINTED

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.

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

Chassis Supplied By Rosenbauer SD

CHASSIS

A chassis shall be furnished per the attached specifications.
12 VOLT ELECTRICAL INSTALLATION - PUMPERS/TANKERS

Electrical Base, Standard, W/Load Management

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.

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 over current protective devices. Such devices shall be accessible and located in required terminal connection locations or weather resistant enclosures. The over current 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.

Electrical Junction Box, Weather Resistant

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.

CONSOLES AND SWITCHES

Switch Panel/Electrical Console, Angled Between Cab Seats, Black LineX (2 Door)

ANGLED ELECTRICAL CONSOLE WITH EMERGENCY LIGHT SWITCH PANEL

An angled electrical console shall be constructed of .125" black LineX coated smooth aluminum material and mounted in the cab of the truck chassis. The console will have a black bedlined finish on the exterior of the compartment. Console shall be designed and installed between the driver and passenger seats. The top face of the console shall be designed as the switch panel for all emergency light switches. The switch panel shall be bolted in place for easy access to the switch connections.

Hartsel Fire Protection District

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

SWITCHES

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

BATTERY SYSTEMS AND SHORELINE PLUG-INS

Batteries, With Supl'd Chs

BATTERY SYSTEM

The battery system shall be supplied with the chassis.

Battery Tray Liner, SST

BATTERY TRAY LINER

A stainless steel tray liner shall be provided for the chassis battery system.

Battery Switch, Master Disconnect , Chassis Sppld

MASTER ELECTRIC SWITCH

A battery disconnect switch shall be located conveniently to the driver of the apparatus. The switch shall disconnect the 12 volt power supply from the battery system.

Ignition Switch, Disable Control

DISABLE CONTROL

The ignition switch shall be provided with a hidden disable switch for security purposes or use by mechanic.

Battery, Indicator Light

BATTERY SYSTEM INDICATOR LIGHT

A red battery "on" light shall be located on the front center of the cab.

Battery Charger/Compressor, KUSS, Pump Plus 1000 PLC 51-21-1100

BATTERY CHARGER AND AIR COMPRESSOR

A Kussmaul Pump Plus 1000 PLC model #51-21-1100 battery charger and air compressor system shall be installed. The 12 volt compressor system shall be designed to maintain the air pressure in the chassis brake system whenever the pressure drops below a predetermined level.

The battery charger shall be supplied from the 12 volt shore power receptacle and be a fully automatic high output charging system. The unit shall be mounted in a clean dry area and will be accessible for service and/or maintenance.
Display, Bar Graph, Single Battery Bank 091-199-001

BATTERY CHARGER DISPLAY

A Kussmaul 091-199-001 single battery bank voltage display shall be supplied with the charger.
Shore Power Inlet, KUSS Super Auto-Eject 20 Amp

AUTO-EJECT

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

SHORE POWER PLUG

The shore power plug shall be located at the left front cab door.
Block Heater, Coolant Type, Existing Shoreline

COOLANT HEATER

A 1000 watt coolant heater shall be supplied for the chassis engine to assist with cold weather starting. The 110 volt heater power cord shall be connected to the shoreline receptacle.
AIR HORNS AND CONTROLS

Air Horns Two (2) 24" Round Hadley E-Tone

AIR HORNS

Two (2) Hadley brand E-Tone air horns shall be provided. The air horns shall be 6” in diameter and 24” long. Each horn shall feature flared ends offering a pleasing appearance.
Air Horn Location Hood Mounted, One (1) Ea Side

AIR HORN LOCATION

The air horns shall be located on the hood. One (1) shall be mounted on the driver side and one (1) on the officer side, so as not to interfere with any other components on the hood.

Hartsel Fire Protection District

Air Horn Control, Driver, Single Foot Switch

AIR HORN FOOT SWITCH

A foot switch shall be installed to activate the air horn system on the driver's side of the floor.
Air Horn Control, Officer, Single Foot Switch

AIR HORN FOOT SWITCH

A foot switch shall be installed to activate the air horn system on the officer's side of the floor.
12 VOLT POWER SOURCES

12V Dual USB Power Outlet, 5V 2.1A Output, Center Console

12 VOLT USB POWER SOURCE

One (1) 12 volt dual USB power outlet with 5 volt 2.1 amp output shall be provided in the center cab console.
Switched Power, Thru Master

The power source shall be run through the chassis master battery switch and shall be deactivated when the master switch is in the "OFF" position.
DOME-CABINET-INTERIOR-ENGINE-PUMP LIGHTS

Light, Engine Compt, 12 Volt LED, w/Switch

ENGINE COMPARTMENT LIGHT

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

The control switch shall be mounted on the light head.
Light, Pump Compt, 12 Volt LED With Switch

PUMP ENCLOSURE LIGHTS

One (1) LED work light shall be provided in the pump enclosure.
Switch on Light Head

The control switch shall be mounted on the light head.
EMEREC - MOBILE OPERATION MANAGEMENT

BACK UP ALARMS AND CAMERAS

Back Up Alarm

BACK-UP ALARM

An automatic electric back-up alarm shall be wired to the back-up light circuit, and mounted under the rear of the apparatus body.
Back Up Alarm, Over-Ride Swtch , Auto Reset, Swtch Pnl

OVER-RIDE SWITCH

An over-ride switch, auto reset shall be provided in the switch panel for the specified back up alarm. The switch shall be labeled for identification.
Back Up Camera, ASA, Color

BACKUP CAMERA

An ASA color rear camera system shall be mounted on the rear of the vehicle. All system components shall be installed by the apparatus body manufacturer.
MAP LIGHTS-HANDHELD LIGHTS-FANS-FOG LIGHTS-HDLT FLASH

HANDHELD FLASHLIGHTS

Hand Lights, NFPA Compliance - Spl'd/Instl'd by DEPT

HAND LIGHTS

All NFPA required portable hand lights supplied by the Customer must be installed before the apparatus is placed into service.
ANTENNAS - RADIOS - HEADSETS - FIRE RADIOS

S.O.R. / Radio Antenna Base & Communication Radio, Supply and Install, Ea

RADIO ANTENNA BASE

Two (2) radio antenna base shall be supplied and installed on the apparatus, the antenna coax terminating in the cab. The location shall be determined by the customer.
MARKER AND DOT REQUIRED LIGHTS

Marker Lts, LED, DOT Requirements

MARKER LIGHTS

LED marker lights shall be installed on the vehicle in conformance to the Department of Transportation requirements.
License Plate Bracket, SST, No Light, Rear

LICENSE PLATE BRACKET

A stainless steel license plate bracket shall be provided at the rear of the apparatus.
Tail/Brake Lights, Whelen, LED, M62BTT (Pair)

TAIL LIGHTS

One (1) pair of Whelen M62BTT LED tail/brake lights shall be provided. The rectangular 4"x6" lights shall be red.
Turn Signals, Whelen, LED w/ Arrow, M62T (Pair)

TURN SIGNALS

One (1) pair of Whelen M62T LED turn signals with populated sequential chevron arrow shall be provided.
Backup Lights, Whelen, LED, M62BU (Pair)

BACKUP LIGHTS

One (1) pair of Whelen Series M62BU 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.
(4) Light Bezel, Tail Lights, Whelen M6 (Pair), ABS Chrome

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.
Turn Signals, Mid Body, LED Marker Light (Pair)

MID BODY LED TURN SIGNALS

One (1) pair of mid body LED turn signals shall be provided. The location of the turn lights shall be at mid-body near the rear wheel axle.
GROUND LIGHTS

Ground Lights, Cab, 2 Door, LED Pair

CAB GROUND LIGHTS

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

CAB STEP LIGHTS

There shall be LED cab step lights supplied below the chassis cab doors. The lights shall be mounted below the cab doors and illuminate the chassis cab steps. There shall be two (2) LED lights located on each side of the chassis cab.

Hartsel Fire Protection District

Ground Lights, Pump Panel, LED, Pair

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.
Ground Lights, Rear Step, LED, Pair

REAR STEP GROUND LIGHTS

Two (2) LED ground lights shall be installed under rear step of the apparatus.
Light Switch , Ground Lights w/ Park Brake

The ground lights shall automatically activate when the parking brake is applied.
STEP - WALKWAY - DECK LIGHTS

Step Light, Fixed /Folding Step, LED, Ea

STEP LIGHT

Two (2) LED step light(s) with clear lens shall be installed.
Step Light, Rear Tailboard, LED, Ea

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.
Light Switch , Step/Walkway Lights Wired Park Brake Switch

The step/walkway light switch shall be installed and wired to the parking brake.
Deck Lights, Rear Of Hosebed

DECK LIGHTS - REAR

The deck lights shall be installed at the rear of the hose bed.
Deck Lights, Code 3, LED, 1-Spot #CW2450 & 1-Flood #CW2451, Black

DECK LIGHTS

One (1) 12 volt Code 3 Model CW2450 spotlight and one (1) 12 volt Code 3 Model CW2451 floodlight, each with nine (9) LED's, shall be installed. The lights shall have an "on-off" switch, handle and swivel base.
Deck Light Switch , Wired Park Brake Switch

A deck light switch shall be installed and wired to the parking brake.
TELESCOPING LIGHTS - BROW LIGHTS - 12 VOLT

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SURFACE MOUNT SCENE LIGHTS - 12 VOLT

Scene Light - Front / Cab Brow

FRONT SCENE LIGHTING

The following scene lighting shall be located on the front brow of the cab:
Scene Light, Fire Tech, FT-B-46-ML3-W, 18,000 Lmns, 46", White

LED SCENE LIGHT

A Fire Tech FT-B-46-ML3-W 46" brow light shall be provided and installed below the light bar. The light shall produce 18,000 lumens and be powder coated white.
3-Way Control Switch, Front Scene Lights, Cab Dash/Pump Panel

SCENE LIGHT SWITCHING

A scene light switch with indicator shall be installed on the cab dash and on the pump panel to control the front scene light(s). The switches shall be wired to operate in a three-way configuration to allow the light(s) to be controlled from either location regardless of switch position. The switches shall be labeled "FRONT SCENE".
Scene Light - Body Left Side

LEFT SIDE BODY SCENE LIGHTING

The following scene lighting shall be located on the left side of the body:
Scene Light, FireTech, Guardian Junior, FT-GSMJR, Surface Mount

SCENE LIGHT

Two (2) FireTech Guardian Junior FT-GSMJR scene light shall be provided. The fixture shall be designed to attach to the side of the apparatus and emit light both straight down the side of the body, and in a perpendicular plane to the mounting sheet on to the scene area near the apparatus. The fixture shall incorporate 3 rows of LEDs, with the center row of 4 LEDs using conical acrylic optics mounted in alignment with each other. The other two rows of LEDs shall use an integrated linear optic to emit light downward asymmetrically. A moisture blocking vent valve shall be installed in the body of the fixture to allow for equalization of internal pressure without introduction of moisture into the housing.
Scene\Warn Light, Mounting Plate, Painted Wetside Tank Only

The scene light shall be installed on a mounting plate on the side of the water tank.
3-Way Control Switch, Left Scene Lights, Cab Dash/Pump Panel

SCENE LIGHT SWITCHING

A scene light switch with indicator shall be installed on the cab dash and on the pump panel to control the left side scene light(s). The switches shall be wired to operate in a three-way configuration to allow the light(s) to be controlled from either location regardless of switch position. The switches shall be labeled "LEFT SCENE".
Scene Light - Body Right Side

RIGHT SIDE BODY SCENE LIGHTING

The following scene lighting shall be located on the right side of the body:
Scene\Warn Light, Mounting Plate, Painted Wetside Tank Only

The scene light shall be installed on a mounting plate on the side of the water tank.
Scene Light, FireTech, Guardian Junior, FT-GSMJR, Surface Mount

SCENE LIGHT

Two (2) FireTech Guardian Junior FT-GSMJR scene light shall be provided. The fixture shall be designed to attach to the side of the apparatus and emit light both straight down the side of the body, and in a perpendicular plane to the mounting sheet on to the scene area near the apparatus. The fixture shall incorporate 3 rows of LEDs, with the center row of 4 LEDs using conical acrylic optics mounted in alignment with each other. The other two rows of LEDs shall use an integrated linear optic to emit light downward asymmetrically. A moisture blocking vent valve shall be installed in the body of the fixture to allow for equalization of internal pressure without introduction of moisture into the housing.
3-Way Control Switch, Right Scene Lights, Cab Dash/Pump Panel

SCENE LIGHT SWITCHING

A scene light switch with indicator shall be installed on the cab dash and on the pump panel to control the right side scene light(s). The switches shall be wired to operate in a three-way configuration to allow the light(s) to be controlled from either location regardless of switch position. The switches shall be labeled "RIGHT SCENE".
Scene Light - Rear Body

REAR BODY SCENE LIGHTING

The following scene lighting shall be located on the rear of the body:
Scene\Warn Light, Mounting Plate, Painted Wetside Tank Only

The scene light shall be installed on a mounting plate on the side of the water tank.
Scene Light, FireTech, Guardian Junior, FT-GSMJR, Surface Mount

SCENE LIGHT

Two (2) FireTech Guardian Junior FT-GSMJR scene light shall be provided. The fixture shall be designed to attach to the side of the apparatus and emit light both straight down the side of the body, and in a perpendicular

plane to the mounting sheet on to the scene area near the apparatus. The fixture shall incorporate 3 rows of LEDs, with the center row of 4 LEDs using conical acrylic optics mounted in alignment with each other. The other two rows of LEDs shall use an integrated linear optic to emit light downward asymmetrically. A moisture blocking vent valve shall be installed in the body of the fixture to allow for equalization of internal pressure without introduction of moisture into the housing.
3-Way Control Switch, Rear Scene Lights, Cab Dash/Pump Panel

SCENE LIGHT SWITCHING

A scene light switch with indicator shall be installed on the cab dash and on the pump panel to control the rear scene light(s). The switches shall be wired to operate in a three-way configuration to allow the light(s) to be controlled from either location regardless of switch position. The switches shall be labeled "REAR SCENE".
Scene Light Switch , Rear Scene Lights, Auto w/ Reverse

SCENE LIGHT SWITCHING

The rear scene lights shall activate automatically upon placing the transmission into reverse.
DOOR OPEN / HAZARD WARNING LIGHT INDICATOR SYSTEMS

Door Open/Hazard Warning Light, Flashing Red Lens

DOOR OPEN/HAZARD WARNING LIGHT

A 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.
Door Open/Hazard Warning Alarm, Buzzer

DOOR OPEN/HAZARD WARNING ALARM

A door open/hazard warning alarm shall be installed. The audible alarm shall activate when an open door is detected upon release of the parking brake. The alarm shall have a distinct noise to avoid conflict with other cab mounted alarms.
ELECTRONIC SIREN - SPEAKERS - Q's - BELL

Siren, Electronic, Whelen 295SLSA1

ELECTRIC SIREN AND CONTROL

A Whelen model #295SLSA1 electronic siren shall be mounted in the cab. This unit shall feature an electronic air horn, wail, yelp, hi-lo and shall have a hard wired PA microphone.
Speaker, Fed Sig Dynamax, ES100C 100 Watt

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SPEAKER

One (1) Federal Signal DynaMax 100-watt speaker, model #ES100C, 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.
Speaker Grille, SST, "R"

SPEAKER

One (1) stainless steel grille shall be installed on the speaker.
Speaker Location, To Be Determined by Body Mfg

SPEAKER LOCATION

The siren speaker shall be installed on the apparatus bumper extension, as determined by the body manufacturer.
Siren Control, Electronic, Foot Switch , Officer's Side

SIREN CONTROL

One (1) electronic foot switch shall be provided on the officer's side of the cab floor to activate the siren.
EMERGENCY LIGHTING PACKAGES

CAB LIGHTBARS - UPPER ZONE A

Light Bar, Whelen, Justice, LED, 56" JE2NFPA

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

Light Bar Control, with Master Warning Switch

LIGHTBAR ACTIVATION

The front upper light bar shall be activated through the master warning switch.
REAR FACING - UPPER WARNING LIGHTS - UPPER ZONE C

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Warning Lights, Whelen, Upper Rear Body (2) S-LED Rotary L31 P/N L31*F

UPPER REAR WARNING LIGHTS

One (1) pair of Whelen Super LED, rotating beacons, P/N L31H*F, shall be installed, one each side on the upper rear of the apparatus body. The unit shall have dimensions of 4" high x 7-9/16" deep.
Warn Light, Driver, Whelen, L31 LED Rotator Red CLear Lens, Ea

The driver side warning light shall be a Whelen red LED rotator, model L31H5F with a clear lens.
Warn Light, Officer, Whelen, L31 LED Rotator Red Clear Lens, Ea

The officer side warning light shall be a Whelen red LED rotator, model L31H5F with a clear lens.
Stanchions, Rear Warning Light, Cast Alum

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 WARNING LIGHTS

FRONT FACING - LOWER - CAB WARNING LIGHTS ZONE A

Warning Lights, Whelen, Low Front, (2) M6 LED

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".
Warn Light, Driver, Whelen, M6, Red LED, Clear Lens, Ea

The driver side warning light shall be a Whelen Model M6RC red Super-LED™ with clear lens.

Warn Light, Officer, Whelen, M6, Red LED, Clear Lens, Ea

The officer side warning light shall be a Whelen Model M6RC red Super-LED™ with clear lens.

Flange, Chrome, Warning Light, Whelen, M6, Ea

Each light shall be mounted with a Whelen Model M6FC chrome flange.
SIDE WARNING LIGHTS - LOWER ZONE B AND ZONE D

Warning Lights, Whelen, Intersection, (2) M6 LED

INTERSECTION WARNING LIGHTS

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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".
Warn Light, Driver, Whelen, M6, Red LED, Clear Lens, Ea

The driver side warning light shall be a Whelen Model M6RC red Super-LED™ with clear lens.

Warn Light, Officer, Whelen, M6, Red LED, Clear Lens, Ea

The officer side warning light shall be a Whelen Model M6RC red Super-LED™ with clear lens.

Flange, Chrome, Warning Light, Whelen, M6, Ea

Each light shall be mounted with a Whelen Model M6FC chrome flange.
SIDE FACING - LOWER - MID BODY WARNING LIGHTS

Warning Lights, Whelen, Lower Mid Body (2) M6 LED

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".
Warn Light, Driver, Whelen, M6, Red LED, Clear Lens, Ea

The driver side warning light shall be a Whelen Model M6RC red Super-LED™ with clear lens.

Warn Light, Officer, Whelen, M6, Red LED, Clear Lens, Ea

The officer side warning light shall be a Whelen Model M6RC red Super-LED™ with clear lens.

Flange, Chrome, Warning Light, Whelen, M6, Ea

Each light shall be mounted with a Whelen Model M6FC chrome flange.
SIDE FACING LOWER REAR CORNER WARNING LIGHTS

Warning Lights, Whelen, Lower Rear Side (2) M6 LED

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".
Warn Light, Driver, Whelen, M6, Red LED, Clear Lens, Ea

The driver side warning light shall be a Whelen Model M6RC red Super-LED™ with clear lens.

Warn Light, Officer, Whelen, M6, Red LED, Clear Lens, Ea

The officer side warning light shall be a Whelen Model M6RC red Super-LED™ with clear lens.

Housing, Step, Warning Lights (1 pair)

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.
Flange, Chrome, Warning Light, Whelen, M6, Ea

Each light shall be mounted with a Whelen Model M6FC chrome flange.
REAR FACING - LOWER WARNING LIGHTS - LOWER ZONE C

Warning Lights, Whelen, Lower Rear Body (2) M6 LED

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".
Warn Light, Driver, Whelen, M6, Red LED, Clear Lens, Ea

The driver side warning light shall be a Whelen Model M6RC red Super-LED™ with clear lens.

Warn Light, Officer, Whelen, M6, Red LED, Clear Lens, Ea

The officer side warning light shall be a Whelen Model M6RC red Super-LED™ with clear lens.

TRAFFIC CONTROL DEVICES

DIRECTIONAL WARNING LIGHTBARS

MISCELLANEOUS WARNING LIGHTS

CHASSIS MODIFICATIONS

PLACARDS AND LABELING

Label, Data, Fluid Levels

FLUID DATA PLAQUE

A 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.
Label, Data, Height x Length, Weight

HEIGHT LENGTH & WEIGHT WARNING LABEL

A highly visible label indicating the overall height, length, and weight of the vehicle shall be installed in the cab dash area.
Label, Data, "No Ride" Rr Step

NO RIDE LABEL

A "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.
Label, Indicating Number of Seats

CAB SEATING POSITION LIMITS

A 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.
Label, "Caution: Do Not Wear Helmet While Seated"

HELMET WARNING TAG

A 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.
FRAME PREP AND MODIFICATIONS

Tow Plates (2), Rear Frame Rail, Under Step

REAR TOWING PROVISIONS

There shall be two tow eyes furnished under the rear of the body and attached directly to the chassis frame rails. 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.
Painting, Tow Plates, Black

The tow plates shall be painted black.
BUMPER MODIFICATIONS - EXTENSIONS - COMPARTMENTS

Bumper, Existing Commercial Bumper

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Bumper Extension, 18", By Body Builder

BUMPER EXTENSION

The chassis frame shall be extended 18" 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.
Bumper Gravelshield, 18", By Body Builder

FRONT BUMPER GRAVELSHIELD

An 18" 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.
Full Width Hosewell

FRONT BUMPER HOSEWELL

A recessed full width hosewell compartment constructed from smooth aluminum shall be installed in the front bumper extension. The hosewell shall be constructed with "angled" ends.

Water drain holes shall be drilled in the bottom.
Aluminum T/P Door, Raised Full Width, Front Bumper Compartment

BUMPER COMPARTMENT DOOR

The front bumper compartment shall be equipped with a raised aluminum treadplate door for the full width of the compartment.
Compartment LED Strip Light, (1) Each Compartment (approx 30")

COMPARTMENT LIGHT

One (1) vertically mounted LED strip light shall be installed inside the compartment. The light shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat build up and be approximately 30" in length.
Compartment Light, Mounting Door Jamb

MOUNTING

The compartment light shall be mounted in the door jamb to illuminate the compartment interior.
Compartment Light, Door Switch, Auto, Ea

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

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Tire Pressure Indicator, Single Axle, Commercial, RWTG1235

TIRE PRESSURE INDICATOR

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

MUD FLAPS

Mud Flaps, Rear Wheels, Black, w/ Body

REAR MUD FLAPS

A pair of black mud flaps shall be installed behind the rear wheels.
TIRE CHAINS

CAB STEPS - RUNNING BOARDS - COMPARTMENTS AND TRAYS

Cab Step Overlay, 2 Door Driver Side

CAB STEPS

The driver's side cab step area on the 2 door chassis shall be covered with slip resistant aluminum tread plate for compliance to applicable NFPA standards.
Cab Step Enclosure, Grating

CAB STEP ENCLOSURE GRATING

The cab step enclosure shall be provided with a multi-directional aggressive gripping surface incorporated into the aluminum diamond plate and shall comply with NFPA #1901 standards.
Cab Step Overlay, 2 Door Passenger Side

CAB STEPS

The passenger's side cab step area on the 2 door chassis shall be covered with slip resistant aluminum tread plate for compliance to applicable NFPA standards.
Cab Step Enclosure, Grating

CAB STEP ENCLOSURE GRATING

The cab step enclosure shall be provided with a multi-directional aggressive gripping surface incorporated into the aluminum diamond plate and shall comply with NFPA #1901 standards.
CAB TRIM

CAB GRILL

CAB SEATING AND EQUIPMENT

CREW CAB INTERIOR CABINETS

CHASSIS LUBRICATION SYSTEMS

CHASSIS ELECTRICAL SYSTEMS

Block Heater, 1000W

ENGINE BLOCK HEATER

One (1) 120-volt coolant heater shall be installed in the engine block with a rating of 1000 watts. An exterior mounted three prong straight blade electrical receptacle shall be provided.
CHASSIS AIR BRAKE SYSTEMS

ROSENBAUER SMART CAB

ROSENBAUER CAB EXTENSION

PTO PUMPS

Pump Test, Altitude Requirements

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: _____ feet above sea level.
Pump, Hale, AP, 1 Stage, 500 GPM, PTO

HALE AP SINGLE STAGE PUMP

A Hale Model AP, single stage centrifugal fire pump shall be designed to mount between the chassis frame rails and shall be chassis transmission power take-off driven.

PUMP RATING

The fire pump rating from the water tank shall be 500 GPM @ 150PSI

PUMP BODY

The pump and related parts shall be of fine grain alloy cast iron. All moving parts in contact with water shall be of high quality bronze or stainless steel.

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PUMP IMPELLER

Pump impeller shall be hard, fine grain bronze, hand ground and individually balanced and be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower. Impeller clearance rings shall be bronze, easily renewable.

PUMP TRANSMISSION

The pump transmission shall be attached to the fire pump and shall positive gear drive type for low maintenance. The drive gear shall be of heat treated alloy steel, helical design. The pump and drive shafts shall be corrosion resistant alloy steel, heat treated. Each shaft shall be rigidly supported by deep groove ball bearings and shall have a retaining oil seal.

PUMP MOUNTING

The pump shall be bolted to steel angles and channel that are bolted directly to the chassis side rails, using Grade 8 bolts.

DRIVELINE

The drive shaft and universals shall be sized for intended usage and pump rating.
Pump Seal, Mech, Hale

FIRE PUMP MECHANICAL WATER SEAL

The Hale fire pump shall have a high quality, self-adjusting, maintenance free mechanical seal.
Pump Shift, Hale, PTO, "Pump and Roll"

PTO PUMP SHIFT SPECIFICATIONS -- PUMP AND ROLL

An orange locking 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.

Pump Shift, Hale, Cvr

FIRE PUMP SHIFT COVER

The pump shift control shall be equipped with a cover to prevent accidental engagement.

Add'l Pump Engagement Switch at Pump Panel

PUMP ENGAGEMENT SWITCH AT PUMP PANEL

There shall be an additional pump engagement switch located on the pump operator's panel.

Gauge, Discharge, 2-1/2" (0-400 PSI), In Cab, Pump and Roll

IN-CAB PUMP AND ROLL DISCHARGE PRESSURE GAUGE

One (1) 2-1/2" diameter 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 for pump and roll operations.

Primer, Trident Air Primer, Automatic

TRIDENT PRIMER – AUTOMATIC

An automatic fire pump priming system shall be provided and installed. The system shall be oil-less type and environmentally safe. Once engaged, the system shall be fully automatic and not require any action from the pump operator/engineer when pump draft is lost. This feature provides an additional safety margin by maintaining pump flow from the available water source automatically during drafting operations. When air is introduced during a drafting operation from conditions such as whirlpools or turbulence from porta-tank refill operations, the priming system shall automatically engage to remove the air and stabilize water flow and pump pressure. For additional safety, the entire system shall operate at less than 70dBA of ambient noise.

The priming system shall engage automatically whenever the pump discharge falls below five (5) psi and shall remain engaged until a pump prime has been achieved. The priming system shall automatically disengage when a positive pump discharge pressure has been established. The electrical current draw from the chassis batteries shall not exceed four (4) amps at any given time of operation and allow for unlimited run time without causing an overheat condition for of any of the system components.

A single engagement switch shall be provided on the pump control panel that will allow the operator to engage the automatic pump priming system. There shall be a light provided on the pump control panel to indicate when the system is engaged. 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 NFPA standards.

Primer Control - Main Pump Rocker Switch

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PRIMER CONTROL

A rocker switch control shall be provided on the pump operator's panel, for the main pump primer control.
Pressure Gvrnr, FRC, In-Cntrl, w/Bdy, TGA300

PRESSURE GOVERNOR AND ENGINE-PUMP MONITORING

A 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).

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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.
STAINLESS STEEL PUMP PLUMBING *

STAINLESS STEEL PUMP PLUMBING

Screens/Anodes, Pump

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.
Piping, SST - Up to 1000 GPM

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.
Pump Drain, Master, Manifold, Push Pull Type

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.
Air Blow Out, Fire Pump, Chassis Air, Mnl 1/4 Turn Vlv

FIRE PUMP AIR BLOWOUT

An air blow out shall be provided for the fire pump. The air supply must be supplied from chassis air system and be connected to a quarter turn valve located on the pump operator's panel.
Intake Manifold, Stainless Steel

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.
Discharge Manifold, Stainless Steel

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.
Unpainted, Pump & Piping

PLUMBING SYSTEM

The plumbing system shall be unpainted.
Threads, National Hose (NST)

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HOSE THREADS

The hose threads shall be National Standard Thread (NST) on all base threads on the apparatus intakes and discharges.
Intk, Ungated, 4", LH Side

LEFT SIDE -- 4" UNGATED INTAKE

One (1) 4" 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 4" NST male threads.

The intake shall be provided with a removable screen.
Cap, 4", Chrome Long Hndl

A 4" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped long handles.
Tank-To-Pump, Water Tank, 3" Vlv/4" Piping, PTO/Crossmnt

WATER TANK TO PUMP LINE

A 3" water tank to fire pump line shall be provided with a full flow quarter turn ball valve, 4" 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.
Dual Tank to Pump Controls - Pump Operator's Panel & Chassis Cab (2) Controllers

The tank to pump valve shall be controlled at the the pump operator's panel with one controller and the chassis cab's switch panel with a second controller.
Valve, AKR, 8000, (3"), KZCO Electric

The valve shall be an Akron 8000 Series three-inch (3") valve with a stainless ball.
Valve Control, AKR, 3.0" Elec, KZCO, Rocker Switch

The Akron valve shall be equipped with a KZCO KZ, Valve Model EH-5 12 volt electric actuator. The valve control shall be push button or rocker type switch with indicator light provided. When the valve is open, the indicator light shall illuminate. When the valve is closed the indicator light shall be off.

The control shall be properly identified with a color-coded name plate.
Tank Fill/Cooling Line, Water Tank, 2"

FIRE PUMP TO WATER TANK FILL LINE

A 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.
Valve, AKR, 8000, (2")

The valve shall be an Akron 8000 Series two-inch (2") valve with a stainless ball.
Intk Vlv Cntrl, Pull Rod, 1/4 Turn, AKR - IC

An 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.
Pump Instln, Midship PTO, By Bdy Bldr

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.
PUMP INTAKE RELIEF AND COOLING

Dump-Relief Vlv, Suction Side, TFT A18

INTAKE RELIEF/DUMP VALVE

A 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.
Pump Cooler, Bypass-To-Tank, 3/8"

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.
Heat Exchanger, Engine, Hook-Up Only

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.

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

Pump Test, Factory Test Only

FACTORY FIRE PUMP TEST

The fire pump shall undergo factory pump certification tests per applicable sections of NFPA standards, prior to delivery of the completed apparatus.

The factory pump testing certificate shall be furnished with the apparatus on delivery.
INTAKES

Intk, Aux, Gtd, 2-1/2", NST, Left Side

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.
Drain/Bleeder, IC Lift-Up, Mnl 1/4 Turn - Spec Only

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.
Plug, 2-1/2", Chrome Rocker Lug, w/Chain

A 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.
Valve, AKR, 8000, (2-1/2")

The valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.
Intk Vlv Cntrl, AKR, Mnl Swing Type-Adjacent

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

Intk, Aux, Gtd, 2-1/2", NST, Right Side

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

One (1) 2-1/2" gated suction intake shall be installed on right 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 and removable screen shall be installed.
Drain/Bleeder, IC Lift-Up, Mnl 1/4 Turn - Spec Only

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.
Plug, 2-1/2", Chrome Rocker Lug, w/Chain

A 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.
Valve, AKR, 8000, (2-1/2")

The valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.
Intk Vlv Cntrl, AKR, Mnl Swing Type-Adjacent

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

Dschg, 2-1/2", NST Frnt Bmpr Crosslay, (200' X 1 3/4" Hose Capacity)

2-1/2" CROSSLAY DISCHARGE FRONT BUMPER

A 2-1/2" front bumper crosslay installed at the bumper deck area. The discharge shall be supplied by a 2-1/2" quarter turn full flow ball valve. The discharge shall terminate with 2-1/2" NPT female swivel with 2-1/2" male NST hose threads. The swivel shall be mounted in the base of hose bed and plumbing shall not hang below the bumper level.

The plumbing shall be high pressure flexible hose with abrasion resistant support mountings. Auxiliary low point drains shall be provided on the discharge line, where necessary to prevent freezing.

The crosslay hose bed shall be constructed of smooth .188" aluminum. The bumper crosslay hose bed shall provide a minimum capacity of 200 feet of fire department supplied 1 3/4" diameter double jacket hose and nozzle.

The hosebed decking shall be equipped with drain holes.
Drain/Bleeder, Class 1, Automatic

A Class 1 automatic type 3/4" bleeder valve shall be installed.
Adapter, Reducing, 2-1/2" NST F x 1-1/2" NST M, LW Alum

One (1) lightweight aluminum reducing adapter with rocker lugs shall be provided with 2-1/2" NST rigid female x 1-1/2" NST male hose threads.
Valve, AKR, 8000, (2-1/2")

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.
Discharge Valve Control, Pull Rod, 1/4 Turn, SM, AKR - IC w/Gauge

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.
Gauge, Discharge, IC, 2-1/2" (0-400 PSI), WF

One (1) 2-1/2" IC 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 on the pump instrument panel.
Air Blow Out, Dschg, Mnl 1/4 Turn Vlv

DISCHARGE AIR BLOWOUT

An air blow out shall be provided for the previous discharge. The air supply must be supplied from the chassis air system and be connected to a quarter turn valve located on the pump operator's panel.
Dschg, 1", Front LH Bumper, Ground Sweep

FRONT BUMPER 1" GROUND SWEEP DISCHARGE

A 1" quarter turn ball valve discharge shall be installed at left side front bumper area and piped to a ground sweep nozzle. The valve control shall be as specified and an engraved nameplate label provided at valve control area.

The plumbing shall be flexible hose with abrasion resistant support mountings.
Drain/Bleeder, Class 1, Automatic - Spec Only

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A Class 1 automatic type 3/4" bleeder valve shall be installed.
Valve, AKR, 8000, (2"), KZCO Electric

The specified valve shall be an Akron 8000 Series two-inch (2") valve with a stainless ball.
Valve Control, AKR, 2.0" Elec, KZCO, Rocker Switch

The valve shall be equipped with a KZCO KZ, Valve Model EH-2 12 volt electric actuator. The valve control shall be push button or rocker type switch with indicator light provided. When the valve is open, the indicator light shall illuminate. When the valve is closed the indicator light shall be off.

The control shall be properly identified with a color-coded name plate.
Gauge, Discharge, IC, 2-1/2" (0-400 PSI), WF

One (1) 2-1/2" IC 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 on the pump instrument panel.
Dschg, 1", Front RH Bumper, Ground Sweep

FRONT BUMPER 1" GROUND SWEEP DISCHARGE

A 1" quarter turn ball valve discharge shall be installed at right side front bumper area and piped to a ground sweep nozzle. The valve control shall be as specified and a nameplate label provided at valve control area.

The plumbing shall be flexible hose with abrasion resistant support mountings.
Drain/Bleeder, Class 1, Automatic - Spec Only

A Class 1 automatic type 3/4" bleeder valve shall be installed.
Valve, AKR, 8000, (2"), KZCO Electric

The specified valve shall be an Akron 8000 Series two-inch (2") valve with a stainless ball.
Valve Control, AKR, 2.0" Elec, KZCO, Rocker Switch

The valve shall be equipped with a KZCO KZ, Valve Model EH-2 12 volt electric actuator. The valve control shall be push button or rocker type switch with indicator light provided. When the valve is open, the indicator light shall illuminate. When the valve is closed the indicator light shall be off.

The control shall be properly identified with a color-coded name plate.
Gauge, Discharge, IC, 2-1/2" (0-400 PSI), WF

One (1) 2-1/2" IC 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 on the pump instrument panel.
CROSSLAY DISCHARGES

SPEEDLAY DISCHARGES

LEFT SIDE DISCHARGES

Dschg, 2-1/2", Left Side, Pump Panel, NST

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.
Drain/Bleeder, IC Lift-Up, Mnl 1/4 Turn - Spec Only

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.
Elbow, 2-1/2"F x 2-1/2" NST M, Chrome

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.
Cap, 2-1/2", NST Chrome, Rocker Lug, w/Chain

One (1) 2-1/2" NST rocker lug chrome plated vented cap and cable or chain securement shall be provided.
Valve, AKR, 8000, (2-1/2")

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.
Discharge Valve Control, Pull Rod, 1/4 Turn, SM, AKR - IC w/Gauge

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.
Gauge, Discharge, IC, 2-1/2" (0-400 PSI), WF

One (1) 2-1/2" IC 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 on the pump instrument panel.
RIGHT SIDE DISCHARGES

Dschg, 2-1/2", Right Side, Pump Panel, NST

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

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One (1) 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.
Drain/Bleeder, IC Lift-Up, Mnl 1/4 Turn - Spec Only

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.
Elbow, 2-1/2"F x 2-1/2" NST M, Chrome

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.
Cap, 2-1/2", NST Chrome, Rocker Lug, w/Chain

One (1) 2-1/2" NST rocker lug chrome plated vented cap and cable or chain securement shall be provided.
Valve, AKR, 8000, (2-1/2")

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.
Discharge Valve Control, Pull Rod, 1/4 Turn, SM, AKR - IC w/Gauge

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.
Gauge, Discharge, IC, 2-1/2" (0-400 PSI), WF

One (1) 2-1/2" IC 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 on the pump instrument panel.
CATWALK DISCHARGES AND HOSEBEDS

REAR BODY DISCHARGES -- MIDSHIP AND PTO

MONITOR DISCHARGES

HOSE REELS

Hose Reel, HAN, Lower Rear Compt, Elec, Steel Painted

ELECTRIC REWIND HOSE REEL

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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 lower rear body compartment.
Hose Reel, Rewind Control, Weatherproof Push Button

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.
Discharge, Hose Reel, 1"

A 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.
Drain/Bleeder, IC Lift-Up, Manual 1/4 Turn

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.
Discharge, Hose Reel, Plumbed to Normal Pressure

The specified hose reel shall be piped to the normal pressure side of the fire pump.
Valve, AKR, 8000, (1")

One (1) Akron 8000 Series one-inch (1") valve with a stainless ball shall be supplied.
Discharge Valve Control, Pull Rod, 1/4 Turn, SM, AKR - IC w/Gauge

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.
Gauge, Discharge, IC, 2-1/2" (0-400 PSI), WF

One (1) 2-1/2" IC 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 on the pump instrument panel.
Hose, Water, 800#, 3/4-in x 100-ft

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

A Task Force Tips Ultimatic 125, model #B-BGH automatic nozzle with shutoff 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. For corrosion resistance and durability the nozzle shall be constructed from hardcoat anodized aluminum alloy, have a six (6) position detent flow control stainless steel slide valve, a protective rubber bumper with fog teeth, stainless steel inlet debris screen, laser engraved serial number, reflective labeling and five year warranty. An integral pistol grip handle shall be positioned directly below the valve handle.

The nozzle shall have a 3/4" female NH inlet, which allows the nozzle to swivel when tightened, a flow range of 10-125 GPM at 100 PSI and be designed to accept the Task Force Tips FJ-U low expansion or FJ-UMX FoamJet multi expansion foam attachments.
Nozzle, Mounting, Hose Reel

The specified booster reel nozzle shall be mounted adjacent the hose reel area in secure clip or clamp type mountings.
Roller, Hose Reel, Rear

One (1) stainless steel roller assembly shall be provided on the rear hose reel.
Painting, Hose Reel, Silver Gray

HOSE REEL PAINTING

The hose reel(s) shall be painted silver gray.
FOAM SYSTEMS AND TANKS

SIDE MOUNT PUMP ENCLOSURE

Pump Enclosure, Side Mount, Front Compt Tanker Style

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 in front of the left side lower compartment of the apparatus. Panel shall house pressure gauge and controls for the pump, including throttle. 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 as specified in the specifications, 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.

SIDE MOUNT PUMP ENCLOSURE OPTIONS

PUMP ENCLOSURE STEPS AND RUNNING BOARDS

PUMP ENCLOSURE ACCESS DOORS OR PANELS

Pump Side Access Door, Upper RH, Alum T/P

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 SURFACE -- MIDSHIP AND PTO

Pump Panel, Line X, LH/RH, SM

PUMP PANEL -- SIDE MOUNT

The pump operator's panel, along with the lower left hand and right hand pump panels shall be constructed of Line-X 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.

Pump Panel, Bolted, LH

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.

Pump Panel, Bolted, RH

RIGHT SIDE PUMP PANEL -- BOLTED

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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 ENCLOSURE HEATERS AND HEAT PANS AND GASKET

Heater, Pump Enclosure, 30,000BTU, w/Switch on Pump Operator's Panel

PUMP COMPARTMENT HEATER SYSTEM

The interior of the pump enclosure shall be equipped with a minimum of 30,000 BTU hot water heater system. The unit shall be piped to the chassis radiator system with standard heater hose. The hose shall be properly clamped and secured in place, and be properly protected from engine exhaust or mechanical damage.

Heater Fan Switch, Pump Operator's Panel

The heater system shall be equipped with a 12-volt blower fan with switch located on the pump operator's panel. The switch shall be labeled accordingly.

Silicone Hose, Heater, Pump Enclosure (IPOS)

HEATER SYSTEM -- SILICONE HOSE

Silicone heater hose shall be provided for the hot water heater system.

Thermostat, Heater, Pump Enclosure, w/Manual Override on Pump Panel

PUMP HEATER SYSTEM THERMOSTAT

The pump heater system shall be equipped with a thermostat system to automatically operate the pump heater system. In addition, the system shall have a manual override switch on the pump instrument panel.

Heat Pan, Pump Enclosure, Midship, Slide Out Panel, Galvanized Steel

PUMP ENCLOSURE HEAT PAN

A removable casing constructed of galvanized steel, completely enclosing the underside of the pump compartment and heated by the engine exhaust shall be provided. The heat pan assembly shall include individual panels that can be easily removed from their mounting locations. The two outer slide-out panels shall be bolted in place.

Gasket, Rubber, Pump Enclosure/Body Flex Joint

BODY AND PUMP HOUSE FLEX JOINT RUBBER GASKET

A flexible rubber gasket shall be installed between the pump compartment and the apparatus body. This gasket will be designed to seal the pump compartment to the apparatus body as tightly as practical. This gasket is necessary for winter operation in extremely cold climates.

Gasket, Rubber, Intakes & Discharges

INTAKE / DISCHARGE RUBBER GASKET

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All intakes, discharges and specified drain handles extending through the side pump panels shall have a rubber grommet installed for heat retention.

PUMP PANEL LABELING

Labels, Test Data and Safety Placards

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.

Labels, Innovative Controls Color Coded

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.

LIGHTING OF PUMP PANEL AND ENCLOSURE

Pump Panel LED Lights, (3) Tecniq E10-W0001-1, Midship LH w/Switch on Operator P

MIDSHIP PUMP PANEL LIGHTS -- LEFT SIDE

Three (3) Techiq E10-W0001-1 or equal LED 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.

Pump Panel Light (1), Actuated w/Pump Engagement

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 PRESSURE GAUGES

Master Gauges, IC, 4" PSI, Pair

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MASTER DISCHARGE AND INTAKE GAUGES

Two (2) 4" diameter IC 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.
Gauge, Test Taps

TEST TAPS

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

Water Tank Gauge, FRC, TankVision Pro 300, Pump Panel WLA300-A00

WATER TANK GAUGE

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

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

The indicator shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted from the outside of the water tank near the bottom. No probe shall place on the interior of the tank. Wiring shall be weather resistant and have automotive type plug-in connectors.
Water Tank Gauge, FRC, TankVision, Mini, In-Cab

CAB MOUNTED WATER TANK GAUGE

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

The miniature indicator shall receive input information over a single wire from a Fire Research TankVision primary indicator model, WLA300-A00 or WLA400-A00.
Water Tank Gauge, Whelen PS TANK2 LED, Level Lts, (3 Lts), FRC

WATER TANK LEVEL LIGHTS

Three (3) Whelen PS-TANK2 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.
Mntng Location, Front Body Corners

MOUNTING LOCATION

The tank level gauges shall be mounted, one each side of the front of the body.
Mntng Location, Rear Body

MOUNTING LOCATION

The tank level gauge shall be mounted, on the rear of the body.
AIR EQUIPMENT FOR PUMP PANEL

PUMP PANEL RADIO EQUIPMENT

PUMP PANEL HANDRAILS

WATER TANKS

Water Tank, 2000 Gallon, Wetside, Poly

WETSIDE WATER TANK - 2000 GALLON

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The apparatus shall be equipped with a two-thousand (2000) 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 for dump valve installation).
Water Tank, Fill Tower, 10" x 10", <3500 Gals

WATER TANK FILL TOWER

A fill tower measuring approximately 10” x 10” square shall be provided on the water tank up to and including 3500 gallons total capacity.
Wetside Water Tank, Base Specs, Poly

WATER TANK SPECIFICATIONS

The "wetside" water tank shall be designed for installation in a fire apparatus chassis with integral body and compartments. The tank and body shall be mounted on a sub-structure assembly as designed and approved by the tank manufacturer. The water tank shall be constructed in full compliance to applicable sections of NFPA and Federal DOT standards.

The overflow pipe shall be a minimum of 6" in size. The tank design shall permit rapid evacuation of the liquid while the vehicle is parked on a 20% ascending slope, 20% descending slope, or a 15% side slope.

The 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.

TANK CONSTRUCTION

The entire tank, baffling, sump, and other components of tank shall be constructed of high impact co-polymer (HIC) polypropylene. The material shall be a non-corrosive stress relieved thermo-plastic, natural or black in color and UV stabilized. The joints and seams shall be nitrogen-welded for maximum strength and integrity. The outside shell of the tank shall be constructed of a minimum 1/2" thick material with reinforcements installed in critical areas of fabrication. There shall be a provisions for the mounting of accessories on the tank side or rear walls. This shall be accomplished through the use of 1" thick HIC polypropylene blocks. These shall be welded to the tank. These blocks shall provide area which will allow for insert type fasteners to be installed, which will mate with necessary brackets and allow components and equipment to be attached to the tank.

The water tank shall be "full-floor" designed which places the walls of the tank shell vertically on the floor, for maximum strength and integrity. The construction process shall use only HIC polypropylene welding rod and shall be nitrogen-welded with all joints and seams double welded. For extra strength, the tank floor shall be "double welded" and shall not be of "bent" construction (no exceptions).

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TANK COVER AND REMOVAL PROVISIONS

The top of the water tank shall be fitted with removable lifting eyes to facilitate easy removal; these lifting eyes shall be designed with a 2 to 1 safety factor. The tank cover shall be recessed 3/8" from the top of the tank and shall be welded to both sides and longitudinal partitions for maximum integrity.

The tank cover shall incorporate a multiple cover locking design, which allows for individual removal and inspection if necessary. Each one of the covers shall have hold downs consisting of 2" polypropylene dowels spaced a maximum of 30" apart. These dowels shall extend through the covers and will assist in keeping the covers rigid under fast filling conditions. A minimum of two (2) lifting dowels shall be drilled and tapped 1/2" x 13" to accommodate the lifting eyes.

TANK BAFFLING

The interior of the foam tank shall be designed with baffling partitions, installed right to left and front to rear of the tank. The baffles shall have vent holes to permit air and liquid movement between foam tank compartments. The baffling partitions shall be interlocked and welded to each other, as well, as to the walls of the tank.

All baffling partitions shall be constructed of 3/8" polypropylene and the front to rear baffles shall extend from 4" off the floor of the tank to just under the cover. The baffling shall be in full compliance to applicable NFPA standards.

FILL TOWER

The water tank shall have a combination vent and manual fill tower and constructed of HIC polypropylene. The tower shall have a 1/4" thick removable polypropylene screen and a polypropylene hinged-type cover, with "water tank" label and maintenance instruction label.

Inside the fill tower there shall be fastened a combination vent overflow pipe approximately 4" down from the top. The vent and water overflow piping shall be with a Schedule 40 polypropylene pipe designed to run through the tank and discharge aft of the rear wheels or axle area.

TANK SUMP

The water tank sump shall be constructed of HIC polypropylene and shall be used as a combination clean-out and drain. The sump shall have a minimum 3" NPT threaded outlet on the bottom for a drain plug. The anti-swirl device shall be a horizontal plate located approximately 2" above the sump. Plate installation shall avoid cavitation over the sump during rapid water removal from tank.

TANK-TO-PUMP SUCTION CONNECTION

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Piping shall be installed from the tank sump to the outside of the water tank for connection of the tank-to-pump suction line (piping, valve, and controls installed by apparatus manufacturer.) This piping shall be sized to provide full flow as required by applicable NFPA standards.

PUMP-TO-TANK FILL CONNECTION

The water tank shall have provisions for connection of flexible piping from the pump to the tank (piping, valve, and controls installed by apparatus manufacturer). All tank-fill connections shall be provided with internal flow deflectors to break up the stream of water entering the tank, and be capable of withstanding sustained fill rates of up to 1000 gallons per minute.

TANK MOUNTING AND SUB-FRAME CONSTRUCTION

A sub-frame weldment shall be provided to adequately support the tank, compartments and fender modules in their fully loaded and equipped condition. The design shall allow for proper interface between body and wheel well panels, as well as ample clearances for the tank. The design shall incorporate proper cross member spacing as it relates to unsupported area under the tank.

The tank shall be isolated from the cross members with a minimum of 1/4" thick 60 durometer rubber strips. The tank shall be designed on the "free floating" and the sub-frame shall also incorporate provisions for capturing the tank front and rear as well as side to side to prevent shifting during vehicle operation. This shall be accomplished through the use of pre-formed retainer brackets, one on each end of the tank bottom. These brackets shall encapsulate a cross member support as part of the sub-frame.
Water Tank, Manufacturer, UPF, Poly

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, 2-1/2" Left Rear

DIRECT TANK FILL

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A 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.
Valve, AKR, 8000, (2-1/2")

The valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.
Intk Vlv Cntrl, AKR, Mnl Swing Type-Adjacent

The valve shall be equipped with a manually operated, swing-type manual control located adjacent the intake.
The valve shall be equipped with a color-coded name plate.
Direct Tank Fill, Elbow w/Drain

TANK FILL ELBOW

The direct tank fill shall be equipped with a 30-degree elbow and a 3/4" drain.
NH 2-1/2" Swivel, Plug & Screen

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

DIRECT TANK FILL

A 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 right side rear of body.
Valve, AKR, 8000, (2-1/2")

The valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball.
Intk Vlv Cntrl, AKR, Mnl Swing Type-Adjacent

The valve shall be equipped with a manually operated, swing-type manual control located adjacent the intake.
The valve shall be equipped with a color-coded name plate.
Direct Tank Fill, Elbow w/Drain

TANK FILL ELBOW

The direct tank fill shall be equipped with a 30-degree elbow and a 3/4" drain.
NH 2-1/2" Swivel, Plug & Screen

The direct tank fill inlet shall include a 2-1/2" female NH swivel, plug and screen.
Quick Dump, Rear 10", External Mount w/Swivel Dump

QUICK DUMP - REAR

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A Newton 10" quick dump valve shall be provided and externally mounted. The location shall be at the center rear of the apparatus.
Quick Dump, Rear 10", Manual Open/Close Controls

A manual operated lever control shall be used to open and close the rear dump valve.
Quick Dump, Rear 10", Painted Steel

The Newton dump valve installed on the water tank shall be painted grey.
Quick Dump Chute, Rear, Swivel Dump, Rosenbauer

A 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.
HOSEBED - HOSEBED COVERS - DIVIDERS - HOSE LOAD

Hosebed, Wetside Tanker SA

HOSEBED

There shall be a hosebed area constructed of polypropylene on the top of the tank consisting of two side walls and one front panel. The hosebed shall be welded to the outside perimeter of the tank cover.
Hosebed, Grating, Extruded Alum, >180" Long

ALUMINUM HOSEBED GRATING

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 assembled 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.

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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.
Hosebed, Storage Capacity, 55 Cubic Feet, Minimum

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.
Hosebed Cover, Alum T/P, <180" L, 49-74" W, Center Open (NFPA Walking Surface)

ALUMINUM HOSEBED COVER

The hosebed shall be equipped with a reinforced hinged .125" aluminum diamond plate cover. The covers shall be of the sloped design for proper water runoff. Positive hold-open devices shall be provided to hold the door in the open position.

The cover, approximately 49” to 74” wide with a center opening, shall be installed the full length of the hose bed.

The walking surface on the cover shall be a NFPA #1901 compliant surface, with a 1" wide yellow or orange strip designating the outside perimeter of the walking or standing area.
(1) Main Hosebed Divider (Stationary)

MAIN HOSEBED DIVIDER

One (1) stationary hosebed divider shall be provided in the main hosebed.

The hosebed divider shall be fabricated of 1/4" smooth aluminum sheet stock, pressed into a "T" shaped aluminum extrusion for added strength along the bottom and front edges of the divider.

Divider shall be bolted in place, front and rear, to allow for ease of removal or relocation.
Manual Operation, Hosebed Cover, Alum T/P

MANUALLY OPERATED ALUMINUM HOSEBED COVER

The polished aluminum treadplate hosebed covers extending the full-length and width of the main hosebed shall have lift up handles installed on each hose cover to manually open the hosebed covers.
Hosebed Cover Light, OSS Access, 48" LED Tube Light, Ea, EO-73048

HOSEBED LED LIGHTS

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Four (4) 48" long OnScene Solutions Access LED light shall be installed and produce approximately 10050 lumens per light. The light stick shall be rated at 100,000 hours of service and shall be provided with a 5 year free replacement warranty. The light shall have a 5/8" LEXAN^{TM} polycarbonate tube enclosure for severe duty applications. The light stick shall be waterproof and be connectible via a jumper wire to add additional lights in series if required.

The LED lights shall be recessed into the underside of the hinged aluminum hosebed covers to provide illumination for repacking of fire hose. The 12 volt LED lights shall be automatically controlled by a switch which activates upon opening of the door. The lights shall also be connected to the hazard light in the chassis cab to indicate when the hose bed covers are in the open position.
Rear Vinyl Flaps for Alum Cover

REAR VINYL FLAPS FOR ALUMINUM COVER

There shall be a vinyl flaps attached to each aluminum hosebed cover. The vinyl flaps shall cover the area on the rear of the hosebed from top to bottom. The flaps shall be independent of each other but attachable with velcro in the center. The bottom edge of the flap shall be shall be secured utilizing a hook and loop fastening system.
Vinyl Color, BLACK

The vinyl cover shall be black in color.
BODY CONSTRUCTION

Body Construction - Rosenbauer Wetside FX - 1/8" Alum - SA

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.

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

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

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

Wheel well panels shall be formed aluminum that is welded in place. There shall be no visible bolt heads, retention nuts or fasteners on the exterior surface of the panel. 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 polished aluminum fenderette shall be furnished at each rear wheel well opening, held in place with stainless steel fasteners.

FASTENERS

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

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

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

COMPARTMENT FLOORS

The compartment floors shall be constructed of aluminum treadplate material.
Sub-Frame, Steel (Wetside)

STEEL SUB-FRAME

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

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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.
Body, Formed Alum, Wetside, Up to 156"

BODY CONFIGURATION

The formed apparatus body shall be up to 156" long, reference the drawing for actual body length.
Wetside Tank Skirt - Painted Aluminum

TANK SKIRT

A painted aluminum "L" panel shall be installed on the body compartments. The panel shall have trim lok installed on the top edge.
Whl Well Panel, Alum Pntd, Sngl Axle - Alum

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.
Fenderette, Polished Aluminum

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.
96" OAW, 23" Lower Depth Both Sides, LL/LR

BODY WIDTH

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

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COMPARTMENT DEPTH

The lower portion of the side compartments on the pumper body shall be 23" deep.
Compt Height, 39" High Left

COMPARTMENT HEIGHT

The left side body compartments shall be 39" high.
Compt Height, 39" High Right

COMPARTMENT HEIGHT

The right side body compartments shall be 39" high.
Doors, Hinged Specs

HINGED COMPARTMENT FLUSH DOOR CONSTRUCTION

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

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

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

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

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

A non-moisture absorbing gasket shall be installed between the door latch and the door skin panel.
Door Handle, Maltese Cross D-Ring, Hinged Doors

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EXTERIOR DOOR HANDLES

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

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

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

Ahead Rear Wheels - Low Comp't - Hinge Single Door

LEFT FRONT COMPARTMENT

There shall be one (1) low compartment located ahead of the rear wheels. The compartment shall be equipped with a low single hinged door.

The compartment shall be equipped with the following:
Vents, Compts, Louvers, Includes Filters (Ea)

One (1) louver with filter shall be installed in the compartment.
Shelving Tracks, (2) Unistrut, Alum

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.
Wall Light, OSS Access, LED Tube Light, (1) Ea Compartment

COMPARTMENT LIGHTS

One (1) OnScene Solutions Access LED light shall be installed on one side of the door opening. The light stick shall be rated at 100,000 hours of service and shall be provided with a 5 year free replacement warranty. The light shall have a 5/8" LEXAN™ polycarbonate tube enclosure for severe duty applications.

The light stick shall be waterproof and be connectible via a jumper wire to add additional lights in series if required.
Compartment Light, Door Switch, Auto, Ea

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The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.
Behind Rear Wheels - Low Comp't - Single Hinge 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 hinged door.

The compartment shall be equipped with the following:
Vents, Compts, Louvers, Includes Filters (Ea)

One (1) louver with filter shall be installed in the compartment.
Shelving Tracks, (2) Unistrut, Alum

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.
Shelf, Adjust, Alum 1/8"

ADJUSTABLE SHELF

One (1) adjustable shelf shall be constructed of .125” smooth aluminum plate with 1.5” formed vertical lip front & back. Shelf supports on each side to be constructed of .188” aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8” bolts and spring-loaded cam locks. If shelf is longer than 40” a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.
Turtle Tile, Shelves/Trays, (each)

The shelf/tray shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 1/2" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.
Wall Light, OSS Access, LED Tube Light, (1) Ea Compartment

COMPARTMENT LIGHTS

One (1) OnScene Solutions Access LED light shall be installed on one side of the door opening. The light stick shall be rated at 100,000 hours of service and shall be provided with a 5 year free replacement warranty. The light shall have a 5/8" LEXAN™ polycarbonate tube enclosure for severe duty applications.

The light stick shall be waterproof and be connectible via a jumper wire to add additional lights in series if required.
Compartment Light, Door Switch, Auto, Ea

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

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RIGHT SIDE COMPARTMENTS

Ahead Rear Wheels - Low Comp't - Hinge Double Doors

RIGHT FRONT COMPARTMENT

There shall be one (1) low compartment located ahead of the rear wheels. The compartment shall be equipped with a low double hinged doors.

The compartment shall be equipped with the following:
Vents, Compts, Louvers, Includes Filters (Ea)

One (1) louver with filter shall be installed in the compartment.
Shelving Tracks, (2) Unistrut, Alum

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.
Shelf, Adjust, Alum 1/8"

ADJUSTABLE SHELF

Two (2) adjustable shelf shall be constructed of .125” smooth aluminum plate with 1.5” formed vertical lip front & back. Shelf supports on each side to be constructed of .188” aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8” bolts and spring-loaded cam locks. If shelf is longer than 40” a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.
Turtle Tile, Shelves/Trays, (each)

The shelf/tray shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 1/2" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.
Wall Light, OSS Access, LED Tube Light, (1) Ea Compartment

COMPARTMENT LIGHTS

One (1) OnScene Solutions Access LED light shall be installed on one side of the door opening. The light stick shall be rated at 100,000 hours of service and shall be provided with a 5 year free replacement warranty. The light shall have a 5/8" LEXAN™ polycarbonate tube enclosure for severe duty applications.

The light stick shall be waterproof and be connectible via a jumper wire to add additional lights in series if required.
Compartment Light, Door Switch, Auto, Ea

Hartsel Fire Protection District

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.
Behind Rear Wheels - Low Comp't - Hinge Single 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 hinged door.

The compartment shall be equipped with the following:
Vents, Compts, Louvers, Includes Filters (Ea)

One (1) louver with filter shall be installed in the compartment.
Shelving Tracks, (2) Unistrut, Alum

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.
Shelf, Adjust, Alum 1/8"

ADJUSTABLE SHELF

One (1) adjustable shelf shall be constructed of .125” smooth aluminum plate with 1.5” formed vertical lip front & back. Shelf supports on each side to be constructed of .188” aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8” bolts and spring-loaded cam locks. If shelf is longer than 40” a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf.
Turtle Tile, Shelves/Trays, (each)

The shelf/tray shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking modules approximately 12" square by 1/2" thick. This material shall be resistant to heat, cold, ultra-violet radiation, mechanical impacts, chemical actions and is corrosion resistant.
Wall Light, OSS Access, LED Tube Light, (1) Ea Compartment

COMPARTMENT LIGHTS

One (1) OnScene Solutions Access LED light shall be installed on one side of the door opening. The light stick shall be rated at 100,000 hours of service and shall be provided with a 5 year free replacement warranty. The light shall have a 5/8" LEXAN™ polycarbonate tube enclosure for severe duty applications.

The light stick shall be waterproof and be connectible via a jumper wire to add additional lights in series if required.
Compartment Light, Door Switch, Auto, Ea

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

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Rear Body - Flat Back

REAR BODY CONFIGURATION

The rear of the apparatus body shall be of the flat back design.
Rear Center Low Compt - Between Frame Rails

REAR CENTER COMPARTMENT

A compartment shall be installed at the rear of the body, between the frame rails. The compartment shall be equipped with a hinged drop down door.
Rear Center Compt Door - Smooth Alum

The compartment door shall be constructed from smooth aluminum to allow for the application of chevron stripe.

The compartment shall be equipped with the following:
Rear Step - Pumper/Tanker Body - Bolt-On - 12"

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.
COMPARTMENT STORAGE PROVISIONS

EQUIPMENT - BODY MOUNTED

Suction Hose Compt, Through Tank

HARD SUCTION MOUNTING RACK

One (1) hard suction hose compartment shall be provided in the booster tank. The design shall allow the hose to be individually removed from the rear of the apparatus. The hard suction hose compartment shall have a hinged door with push to latch door catches.
Suction Hose Compt, Through Tank

HARD SUCTION MOUNTING RACK

Hartsel Fire Protection District

One (1) hard suction hose compartment shall be provided in the booster tank. The design shall allow the hose to be individually removed from the rear of the apparatus. The hard suction hose compartment shall have a hinged door with push to latch door catches.
Suction Hose Provided By, Body Builder, SD

SUCTION HOSE SOURCE

New suction hose shall be provided by the body builder.
Folding Tank Mounting, Thru Booster Tank - 2000 Gallon Tank

PORTABLE WATER TANK MOUNTING BRACKET

A horizontal storage area shall be provided through the booster tank designed to carry a portable folding tank. The compartment shall be provided with poly slides on each side to hold the folding tank in position. There shall be a hinged door with latch on rear for ease in loading and removing the folding tank.
Folding Tank Provided By, Body Builder sd

FOLDING TANK SOURCE

New folding tank shall be provided by the body builder.
FRONT BODY DESIGN - PUMPER/TANKER

Bdy Trim, Frnt Cmpt, Ht of Side Cmpts, Alum T/P

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.
Catwalks Top of Side Cmpts, Alum Treadplate

CATWALKS

Aluminum tread plate catwalks shall be installed on the top of the compartments.
REAR BODY DESIGN - PUMPER/TANKER

Bdy Trim, Entire Rr Bdy, Smooth for Chevron Stripe

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.
AUXILIARY REAR STEPS - PUMPER/TANKER

Steps - Folding - Rear - Left Hand (4) - Integral LED Lights

Hartsel Fire Protection District

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.
Steps, Pull Out Step, 250# Slides, Rr

PULL-OUT STEP

A pull-out step, 250# slides, shall be provided below the body on the rear of the apparatus. The pull-out step is to include an aluminum treadplate stepping surface to comply with NFPA 1901.
HANDRAILS - PUMPER/TANKER

Handrails - Rear Step - Vertical - 48" - Pair

HANDRAIL REAR STEP

Two (2) extruded aluminum non-slip handrails, approximately 48" in length, shall be provided and vertically mounted on the rear of the apparatus, one (1) on each side of the body.
RUB RAILS - PUMPER/TANKER BODY

Rub Rails, Lwr Bdy, Extrd Alum

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.
Rub Rails, Spacers, Nylon

NYLON SPACERS FOR RUB RAILS

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

PAINT

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Body Paint, Single Axle Wetside

BODY PAINT PROCESS

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

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

The body and all parts shall be thoroughly washed with a grease cutting solvent (PPG CFX436) 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 CFX436) to remove any contaminants on the surface.

The next two to four coats (depending on need) shall be a PPG DelFleet F4936 High Solids Epoxy Gray Primer. The film build shall be 4-6 mils when dry. The primer surfacer coat, after appropriate dry time, shall be sanded with 320-600 grit sandpaper to ensure maximum gloss of the paint. The last step is the application of at least three coats of PPG DelFleet polyurethane FBC-color, the film build being 2-3 mils dry. Followed by three coats PPG DelFleet F3906 high build clear, the film build being 2-3 mils dry. This shall provide a UV barrier to prevent fading and chalking.

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

APPARATUS COLOR

Compt Finish, Spatter Coat, Up to 6 Compts

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.
Body Paint, Touch Up, 2 oz. Bottle, One Color

TOUCH-UP PAINT

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

Hartsel Fire Protection District

Lettering, 4" Mylar Gold Leaf, Fifty (50) Letters

SIMULATED GOLD LEAF LETTERING

The lettering shall be applied in simulated gold leaf material, shaded in black and encapsulated in clear mylar.

A quantity of fifty (50), four (4) inch letters are to be placed on the cab and on the body as directed by the customer.
Door Seals, Custom Detailed, Price On Request

APPARATUS DOOR GRAPHICS

Two (2) custom door graphics designed primarily with artistic features shall be proposed for installation on the apparatus.
S.O.R. / Stripe, Triple Reflective, 1"X6"X1" Large "Hockey Stick" Design

CAB AND BODY STRIPE

A straight Scotchlite reflective stripe, 6" minimum in width, shall be applied horizontally around the cab and body in compliance with applicable NFPA 1901 standards. The purchaser shall specify the color and location of the stripe.
Reflective Pin Stripe Black

PIN STRIPE TRIM

A single layer tape stripe shall be applied above and below the reflective striping material. The color of the stripe shall be black.
S.O.R. / Reflective Stripe Material 1", Red

COLOR OF STRIPING MATERIAL

The color of the 3M brand striping material shall be red.
Reflective Stripe Material, Black

COLOR OF STRIPING MATERIAL

The color of the 3M brand striping material shall be black.
S.O.R. / Stripe, Reflective 3M, Chevron Pattern Entire Rear Black/Red

CHEVRON STRIPING

The entire rear portion of the body shall have 3M reflective red and yellow striping installed. The chevron style striping shall be applied at a 45-degree upward angle pointing towards the center upper portion of the rear panel.
NFPA Standing / Walking Surfaces Yellow Safety Tape (NFPA 15.7.1.6)

Hartsel Fire Protection District

YELLOW SAFETY TAPE - STANDING & WALKING SURFACES

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

WHEEL CHOCKS

Wheel Chocks, Aluminum, (2) Standard

WHEEL CHOCKS

Two (2) standard aluminum wheel chocks shall be provided.
Wheel Chock Brackets, Two (2) Under Body

WHEEL CHOCK MOUNTINGS

Two (2) wheel chock holders shall be mounted under the apparatus body.
GROUND LADDERS

PIKE POLES

AXES AND MOUNTS

SPANNER - STORZ - HYDRANT WRENCHES

NFPA TOOLS - EQUIPMENT

TOOL MOUNTING AND BRACKETS

SCBA MOUNTING BRACKETS

TARPS AND SALVAGE COVERS

HARD SUCTION HOSES

Suction Hose, Flex, PVC, 4"x10'

SUCTION HOSE

Two (2) 4.0" x 10 foot length of PVC flexible suction hose shall be supplied. The suction hose shall have light weight couplings provided.
Suction Hose Couplings, Aluminum, LH FM x RLM

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HOSE COUPLINGS

Light weight 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.
SUCTION HOSE STRAINERS - STRAINER MOUNTS

Suction Strainer, Barrel Type, 4", Kochek #BS40

STRAINER

One (1) Kochek Model BS40 barrel strainer shall be provided. The strainer shall be constructed from aluminum with K-Brite finish and include a tie off loop on the end plate. The strainer shall be provided with a 4.0" NST female coupling.
FOLDING TANKS

Folding Water Tank, 2100 Gallon Alum Frame, 22 Oz Vinyl

FOLDING PORTABLE WATER TANK

A 2100 gallon, 22 oz vinyl, portable water tank shall be provided. The tank shall include an aluminum support frame.
FIRE EXTINGUISHERS - SYSTEMS AND SAFETY ITEMS

FIRE HOSE

NOZZLES

MISCELLANEOUS HARDWARE - EQUIPMENT - TOOLS

DEALER SUPPLIED EQUIPMENT