

Rosenbauer South Dakota

One (1)

== Pumper/Tanker Bid Prep Forms - 918.018 09/18/18 ==

One (1)
00-00-000H

ROSENBAUER APPARATUS SOLUTIONS - RAS - 18 September 2018

One (1)
00-00-1300

BID SPECIFICATIONS

FOR

ROSENBAUER CUSTOM PUMPER

One (1)
00-00-1499

OVERALL HEIGHT

An overall height restriction has not been specified for this apparatus.

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One (1)
00-00-1509

OVERALL LENGTH

An overall length restriction has not been specified for this apparatus.

One (1)
00-00-1519

OVERALL WIDTH

An overall width restriction has not been specified for this apparatus.

One (1)
00-00-1529

WHEELBASE

A wheelbase restriction has not been specified for this apparatus.

One (1)
00-00-1539

ANGLE OF APPROACH

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

One (1)
00-00-1549

ANGLE OF DEPARTURE

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

One (1)
00-00-1600

NFPA Equipment Allowances

One (1)
00-00-1610

NFPA PUMPER EQUIPMENT ALLOWANCE

In compliance with NFPA #1901 standards, the apparatus shall be engineered to provide an allow of 2500 pounds of fire department provided loose equipment.

One (1)
00-00-1799

One (1)
00-12-1100

FINANCIAL STABILITY SPECIFICATIONS

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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.

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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.

One (1)
01-06-0500

CENTER OF GRAVITY

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

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

One (1)
01-07-0060

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 submitted shall be on "B" size paper, 11" x 17" in size and views are on 1/16" to 1" scale.

The blueprints are provided as follows:

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

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ROSENBAUER shall be 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.

One (1)
01-07-1100

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.

One (1)

== Pumper/Tanker Warranties - 918.018 09/18/18 ==

One (1)
01-16-0150

BODY WARRANTY

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

Under this warranty we agree to furnish any parts to replace those that have failed due to defective material or workmanship where there is no indication of abuse, neglect, unusual or other than normal service providing that such parts are, at the option of ROSENBAUER AMERICA, LLC, made available for our inspection at our request, returned to our factory or

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other location designated by us with transportation prepaid within thirty days after the date of failure or within one year from the date of delivery of the apparatus to the original purchaser, whichever occurs first, and inspection indicates the failure was attributed to defective material or workmanship.

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

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

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

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

One (1)
01-19-0150

ALUMINUM BODY WARRANTY - ONE YEAR

Rosenbauer America, LLC warrants to the original purchaser only, that the all aluminum body, fabricated by Rosenbauer America, LLC, under normal use and with reasonable maintenance, be structurally sound and will remain free from corrosion perforation for a period of ONE (1) year.

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

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

Rosenbauer America, LLC will replace without charge, repair or make a fair allowance for any defect in material or workmanship demonstrated to its satisfaction to have existed at the time of delivery or not due to misuse, negligence, or accident. If Rosenbauer America, LLC elects to repair this body, the extent of such repair shall be determined solely by Rosenbauer America,

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LLC, and shall be performed solely at the Rosenbauer America, LLC factory, or at an approved facility. The expense of any transportation to or from such repair facility shall be borne by the purchaser and is not an item covered under this warranty.

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

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

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

One (1)
01-19-2800

GALVANIZED SUBFRAME WARRANTY

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

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

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

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

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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.

One (1)
01-20-0150

PAINT WARRANTY ONE YEAR

The PPG paint performance guarantee will cover the areas of the vehicle finished with the specified product for a period of ONE (1) year beginning the day the vehicle is delivered to the purchaser.

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

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

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

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

One (1)
01-17-0750

PUMP WARRANTY

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

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provided the buyer notifies Waterous in writing, of the defect in said product within the warranty period, and said product is found by Waterous to be conforming with the aforesaid warranty.

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

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

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

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

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

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

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

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

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

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

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

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

S One (1)
01-17-1050

STAINLESS STEEL PLUMBING WARRANTY

The manufacturer shall provide a five (5) year warranty on the stainless steel plumbing components and installation. The manufacturer shall supply details of their warranty information with their bid submission.

One (1)
01-18-0450

WATER TANK WARRANTY

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

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

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

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

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

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

One (1)
01-33-3100

COMPLETE PRINTED MANUAL

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

Within each section shall be:

- Individual component manufacturer instruction and parts manuals
- Warranty forms for the body
- Warranty forms for all major components
- Warranty instructions and format to be used in compliance with warranty obligations
- Wiring diagrams
- Installation instruction and drawings for major parts
- Visual graphics and electronic photos for the installation of major parts
- Necessary normal routine service forms, publications and components of the body portion of the apparatus
- Technical publications for training and instruction on major body components
- Warning and safety related notices for personnel protection
- Cab and chassis manuals on parts, service and maintenance shall be provided

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01-33-3400

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"ON-LINE" SERVICE MANUAL SUPPORT

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

Parts Listings within Manuals

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

Illustrative Schematics within Manuals

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

Digital Images within Manuals

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

Installation Instructions within Manuals

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

Automatic Updates of Manuals and Parts Listings

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

Electrical Schematics

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

Wiring Systems 12 and 120 Volt:

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

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

One (1)

== Use Drop Down For Chassis Options - 1115.017 11/15/17 ==

One (1)

== Pumper/Tanker-DC Electrical Sys ROSENBAUER ONLY - 918.018 09/18/18 ==

One (1)

56-01-1600

ELECTRIC SIREN AND CONTROL

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

One (1)

56-02-1750

SPEAKER

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One (1) Whelen Model #SA315P, nylon composite speaker shall be installed. The speaker shall be wired to the electric siren located in the cab.

One (1)
56-02-1650

SPEAKER

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

One (1)
56-03-1800

SPEAKER LOCATION

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

One (1)
57-02-1900

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

One (1)
57-10-0600

LIGHTBAR ACTIVATION

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

One (1)
58-71-1770

UPPER REAR WARNING LIGHTS

One (1) pair of Whelen model M9 LED warning lights shall be installed, one each side on the upper rear of the apparatus body. The dimensions of the lights shall be 6-1/2" x 10-3/8".

use existing lights on the body

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One (1)
57-20-1400

The driver side warning light shall be a Whelen Model M9R red Super-LED™ with color lens.

One (1)
57-20-1401

The officer side warning light shall be a Whelen Model M9R red Super-LED™ with color lens.

Two (2)
58-01-2180

Each light shall be mounted with a Whelen Model M9FC chrome flange.

One (1)
58-46-2100

UPPER SIDE FRONT WARNING LIGHTS

One (1) pair of Whelen model M9 LED warning lights shall be installed, on the upper portion of the body side, towards the front. The dimensions of the lights shall be 6-1/2" x 10-3/8".

use existing lights on the body

One (1)
57-20-1400

The driver side warning light shall be a Whelen Model M9R red Super-LED™ with color lens.

One (1)
57-20-1401

The officer side warning light shall be a Whelen Model M9R red Super-LED™ with color lens.

use existing lights on the body

Two (2)
58-01-2180

Each light shall be mounted with a Whelen Model M9FC chrome flange.

One (1)
58-61-2100

UPPER SIDE REAR WARNING LIGHTS

One (1) pair of Whelen model M9 LED warning lights shall be installed, one each side on the upper portion of the body side, towards the rear of the body. The dimensions of the lights shall be 6-1/2" x 10-3/8".

One (1)

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57-20-1400

The driver side warning light shall be a Whelen Model M9R red Super-LED™ with color lens.

use existing lights on the body

One (1)

57-20-1401

The officer side warning light shall be a Whelen Model M9R red Super-LED™ with color lens.

Two (2)

58-01-2180

Each light shall be mounted with a Whelen Model M9FC chrome flange.

One (1)

58-03-6400

UPPER WING FRONT WARNING LIGHTS

One (1) pair of Whelen model #600 Super LED warning lights shall be installed, one each side one the front of the chassis cab, upper wing area. The dimensions of the lights shall be 4" x 6".

One (1)

57-20-4010

The driver side warning light shall be a Whelen Model 60R02FRR red-LED with a red lens.

One (1)

57-20-4011

The officer side warning light shall be a Whelen Model 60R02FRR red-LED with a red lens.

One (1)

58-03-7300

INBOARD 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, in the inboard warning light position. The dimensions of the lights shall be 4-5/16" x 6-3/4".

One (1)

57-20-1200

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

One (1)

57-20-1201

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

Two (2)

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58-01-2140

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

One (1)

58-09-2100

INTERSECTION WARNING LIGHTS

One (1) pair of Whelen model LINZ6 LED warning lights shall be installed, one each side of the chassis cab. The warning light shall incorporate six red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The dimensions of the lights shall be 2" x 4".

One (1)

57-20-2000

The driver side warning light shall be a Whelen Model LINZ6R red LED with clear lens.

One (1)

57-20-2001

The officer side warning light shall be a Whelen Model LINZ6R red LED with clear lens.

Two (2)

58-01-2200

Each light shall be surface mounted with a Whelen Model LIN6FC chrome flange.

One (1)

58-26-2100

LOWER MID-BODY WARNING LIGHTS

One (1) pair of Whelen model LINZ6 LED warning lights shall be installed, one each side one of the apparatus, mid body. The warning light shall incorporate six red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The dimensions of the lights shall be 2" x 4".

One (1)

57-20-2000

The driver side warning light shall be a Whelen Model LINZ6R red LED with clear lens.

One (1)

57-20-2001

The officer side warning light shall be a Whelen Model LINZ6R red LED with clear lens.

Two (2)

58-01-2200

Each light shall be surface mounted with a Whelen Model LIN6FC chrome flange.

One (1)

58-36-2100

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LOWER REAR SIDE WARNING LIGHTS

One (1) pair of Whelen model LINZ6 LED warning lights shall be installed, one each side of the apparatus body, towards the rear of the body. The warning light shall incorporate six red Super-LEDs, a clear non-optic hard coated polycarbonate lens, clear optic collimator and utilize a metalized reflector for maximum output. The dimensions of the lights shall be 2" x 4".

One (1)
57-20-2000

The driver side warning light shall be a Whelen Model LINZ6R red LED with clear lens.

One (1)
57-20-2001

The officer side warning light shall be a Whelen Model LINZ6R red LED with clear lens.

Two (2)
58-01-2200

Each light shall be surface mounted with a Whelen Model LIN6FC chrome flange.

One (1)
58-81-2000

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".

use existing lights on the body

One (1)
57-20-1200

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

One (1)
57-20-1201

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

Two (2)
58-01-2140

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

One (1)
50-03-1000

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

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manufacturer shall conform to current automotive electrical system standards, the latest Federal DOT standards, and the requirements of the applicable NFPA standards.

All wiring shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for the protected circuit. Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent. The wiring and wiring harness and insulation shall be in conformance to applicable SAE and NFPA standards. The wiring harness shall conform to SAE J-1128 with GXL temperature properties. All exposed wiring shall be protected in a loom with a minimum 289 degree Fahrenheit rating. All wiring looms shall be properly supported and attached to body members. The electrical conductors shall be constructed in accordance with applicable SAE standards, except when good engineering practice requires special construction.

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

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

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

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

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

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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:

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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:

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1. The nameplate rating of the alternator.
2. The alternator rating under the conditions.
3. Each specified component load.
4. Individual intermittent loads.

One (1)
50-05-1510

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.

One (1)
50-12-1200

DASH MOUNTED EMERGENCY ELECTRICAL SWITCH PANEL

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

SWITCHES

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

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

One (1)
51-05-6400

PUMP ENCLOSURE LIGHTS

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

One (1)
51-05-9000

The control switch shall be mounted on the light head.

One (1)
52-08-1009

HAND LIGHTS

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

One (1)
53-01-1200

MARKER LIGHTS

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

One (1)
53-02-1200

LICENSE PLATE BRACKET

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

One (1)
53-03-2750

TAIL LIGHTS

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

One (1)
53-04-2750

TURN SIGNALS

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

One (1)
53-06-3550

BACKUP LIGHTS

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

One (1)
53-07-1210

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.

One (1)
54-03-1200

PUMP PANEL GROUND LIGHTS

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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.

One (1)
54-03-1600

REAR STEP GROUND LIGHTS

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

One (1)
54-04-1999

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

Two (2)
54-10-1450

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.

One (1)
54-11-2100

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

One (1)
54-12-1918

DECK LIGHTS - REAR

The deck lights shall be installed at the rear of the hose bed.

One (1)
54-12-1300

One (1) Unity Model #AG spotlight and one (1) Unity Model #AG floodlight, with 35 watt bulbs shall be installed. The lights shall have an "on-off" switch.

One (1)

== Pumper/Tanker-Chassis Modifications - 918.018 09/18/18 ==

One (1)
10-02-1100

FLUID DATA PLAQUE

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

- Engine oil
- Engine coolant
- Chassis transmission fluid

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- 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.

One (1)
10-02-1200

DATA & WARNING LABELS

HEIGHT LENGTH & WEIGHT

A highly visible label indicating the overall height, length, and weight of the vehicle shall be installed in the cab dash area.

One (1)
10-02-1300

NO RIDE LABEL

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

One (1)
10-02-2100

CAB SEATING POSITION LIMITS

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

One (1)
10-02-2500

HELMET WARNING TAG

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

One (1)
10-03-1100

COUNTERWEIGHT

One (1) counterweight shall be installed on the apparatus to improve the ratio of the front to rear weight balance.

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700 LBS TO THE REAR

One (1)
10-03-6600

REAR TOW EYES

A single, frame mounted structure with two (2) tow eyes shall be provided. It shall be manufactured from 1" thick steel plate and bolted between the rear frame rail webs with a minimum of eight (8), four (4) on each side, 5/8" SAE Grade 8 frame bolts and lock nuts. The tow eyes shall be braced and gusseted to prevent damage to the frame rails, bumper or apparatus body while being towed from various angles.

The tow eyes shall have a 2" internal diameter chamfered edges and be welded to the skid plate in a vertical position.

Access to the tow eye shall be below the bumper and designed to act also as a skid plate.

One (1)
80-43-2400

The tow plates shall be painted black.

One (1)
10-05-3124

BUMPER

The chassis shall feature a standard, two (2) rib 12" high by 102" wide wrap around style bumper constructed from highly polished, 10 gauge, 316 stainless steel.

The bumper shall be mounted to a twenty-four inch (24") long chassis frame extension.

A contoured apron / gravel shield fabricated from NFPA compliant, slip-resistant polished aluminum shall enclose the top and end "wing" areas between the bumper and the cab.

One (1)
10-04-2720

FRONT BUMPER COMPARTMENT

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

One (1)
10-04-3125

HOSE WELL SECUREMENT

One (1) pair of Velcro straps shall be provided for the securement of the hose in the front bumper hose well.

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One (1)
10-06-1600

TIRE PRESSURE INDICATOR, p/n RWTG1235

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

One (1)
10-08-2100

REAR MUD FLAPS

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

S Two (2)
10-13-2200

INTERIOR CABINET

There shall be two (2) rear facing cabinet installed near the exterior side wall of the cab, directly behind the front cab seats. The cabinet shall be constructed of smooth aluminum plate with minimum interior dimensions of Drivers side 56" High x 24.5" Wide x 12" Deep. Passenger side 56" High x 23" Wide x 12" Deep

A cargo net designed to restrain the contents shall be installed on the cabinet.

Drivers side 56" High x 24.5" Wide x 12" Deep. Passenger side 56" High x 23" Wide x 12" Deep

Two (2)
10-13-3520

The cabinet's exterior shall have an unpainted D/A orbital sander finish.

Two (2)
10-13-3550

The cabinet's interior shall have a natural finish.

One (1)

== Midship Pumper/Tanker Pump & Plumbing - 918.018 09/18/18 ==

One (1)
20-23-2200

WATEROUS CXVC20 SINGLE STAGE PUMP

A Waterous model CXVC20, single stage centrifugal pump shall be designed to mount on the chassis frame rails and shall be split-drive shaft driven. The pump casing shall be of high-tensile, close-grained ductile iron. Pump body shall be a single piece housing, for easy removal of impeller assembly including wear rings and bearings from beneath the pump without disturbing the mounting or piping.

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IMPELLER

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

Replaceable wear rings, bronze, reverse-flow, labyrinth-type shall be provided. Deep groove ball bearings shall be located outside the pump to give rugged support and proper alignment to the impeller shaft. The bearings shall be oil or grease lubricated. All bearings shall be completely separated from the water being pumped.

PUMP TRANSMISSION

The housing shall be constructed of high tensile aluminum and be of three (3) piece, horizontally split design. The transmission driveline shafts shall be made from alloy steel forging, hardened and ground to size. The drive and driven sprockets shall be made of steel and shall be carbonized and hardened.

The drive chain shall be Morse HV involute form chain. The lubrication system shall be an impeller shaft driven oil pump to deliver oil to an integral spray header, to completely pressure lubricate the drive chain.

PUMP MOUNTING

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

DRIVELINE

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

One (1)
20-23-2130

1500 GPM FIRE PUMP SPECIFICATIONS

The centrifugal type fire pump shall be a Waterous model CXC20 midship mounted with a rated capacity of 1500 GPM. The pump shall meet NFPA 1901 requirements.

The pump shall be certified to meet the following deliveries:

- 1500 GPM @ 150 PSI
- 1500 GPM @ 165 PSI

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1050 GPM @ 200 PSI
750 GPM @ 250 PSI

One (1)
22-03-1600

LEFT SIDE -- 6" UNGATED INTAKE

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

One (1)
22-41-5700

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

One (1)
22-03-2600

RIGHT SIDE -- 6" UNGATED INTAKE

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

One (1)
22-41-5700

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

One (1)
20-26-2200

FIRE PUMP MECHANICAL SHAFT SEAL

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

One (1)
20-26-2400

IMPELLER HUBS

The Waterous fire pump impeller hubs shall be "Flame Plated", impregnated with tungsten carbide to assure maximum pump life and efficiency despite the presence of abrasive particles, such as fine sand, in the water being pumped.

One (1)
20-26-3200

ELECTRIC/PNEUMATIC PUMP SHIFT

The fire pump shift shall be air-operated incorporating an air cylinder with an electrically actuated pneumatic switch to shift from ROAD to PUMP and back. The fire pump shift control

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switch and valve shall be mounted in the cab.

The fire pump shift system shall be equipped with a means to prevent unintentional movement of the control device from its set position. The system shall include a nameplate indicating the chassis transmission shift selector position to be used for pumping and located so that it can be easily read from the driver's position.

The system shall include the applicable NFPA standard interlocks, pump shift and OK TO PUMP indicator lights in the cab and pump panel. The fire pump shift system shall be equipped with an interlock system to ensure that the pump drive system components are properly engaged in the pumping mode of operation so the pumping system can be safely operated from the pump operator's position.

If applicable, the secondary braking device shall be automatically disengaged for pumping operations.

One (1)
20-29-1200

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.

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One (1)
20-29-1250

PRIMER CONTROL

A rocker switch control shall be provided on the pump operator's panel, for the main pump primer control.

One (1)
27-10-3400

PRESSURE GOVERNOR AND ENGINE-PUMP MONITORING

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

The following continuous displays shall be provided:

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

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

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

- High Battery Voltage
- Low Battery Voltage (Engine Off)
- Low Battery Voltage (Engine Running)
- High Transmission Temperature

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- Low Engine Oil Pressure
- High Engine Coolant Temperature
- Out of Water (visual alarm only)
- No Engine Response (visual alarm only).

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

Inputs to the control panel from the pump discharge and intake pressure sensors shall be electrical. The discharge pressure display shall show pressures from 0 to 600 psi. The intake pressure display shall show pressures from -30 in. Hg to 600 psi.

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

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

One (1)
21-00-2000

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.

One (1)
21-00-3300

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.

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One (1)
21-01-0200

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.

One (1)
21-01-5500

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.

One (1)
21-01-6500

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.

One (1)
21-01-7100

FIRE PUMP & PLUMBING SYSTEM PAINTING

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

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One (1)
21-01-8100

HOSE THREADS

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

One (1)
22-51-5210

WATER TANK TO PUMP LINE

One (1) 3" water tank to the rear mounted 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.

One (1)
22-50-0100

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

One (1)
24-62-1300

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

One (1)
24-53-2000

One (1) valve shall be controlled by a slow close handwheel type operator on the specified discharge. The handwheel shall take no less than 10 turns to move the valve from fully closed to fully opened. The handwheel shall be a rising stem design. The handwheel shall contain a stainless steel shaft and a double lead acme thread for durability and smooth operation. The handwheel shall be connected to the valve by linkage or heavy duty push pull type control cable. A color-coded name plate installed over the valve control.

One (1)
23-02-1300

FIRE PUMP TO WATER TANK FILL LINE

One (1) 2" fire pump to water tank refill and pump bypass cooler line shall be provided. The valve shall be a full flow quarter turn ball valve with 2" piping and flex hose to tank. The valve control handle shall have a nameplate located near the valve control.

One (1)
24-62-1200

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

One (1)
22-55-4012

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

One (1)
20-30-3100

FIRE PUMP SPLIT SHAFT DRIVESHAFTS AND INSTALLATION

The mid-ship split shaft 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 drive shaft(s) shall be spin balanced prior to final installation.

One (1)
20-31-3600

INTAKE RELIEF/DUMP VALVE

One (1) TFT A18 series, 2-1/2" intake relief/dump valve preset at 125 psi shall be permanently installed on the suction side of the fire pump. The valve shall have an adjustment range of 75 psi to 250 psi, and shall be designed to automatically self-restore to a non-relieving position when excessive pressure is no longer present.

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

One (1)
20-31-4100

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.

One (1)
20-31-5200

CHASSIS ENGINE HEAT EXCHANGER COOLING SYSTEM

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

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

One (1)
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20-31-1100

UNDERWRITERS LABORATORIES FIRE PUMP TEST

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

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

One (1)

20-31-1500

FIRE PUMP TEST LABEL

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

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

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

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

One (1)

22-12-1100

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 3/4" drain and bleeder valve. A nameplate label and removable screen shall be installed.

One (1)

21-01-2502

An Innovative Controls 3/4" 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

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proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close.

One (1)
22-41-1100

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

One (1)
24-62-1250

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

One (1)
22-55-4050

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

One (1)
23-05-2300

1-1/2" DISCHARGE FRONT RIGHT SIDE BUMPER, Chrome

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

The plumbing shall be flexible hose with abrasion resistant support mountings

to be foam capable for future

One (1)
21-01-2200

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

One (1)
23-05-9200

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

One (1)
24-61-1150

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

One (1)
24-53-0020

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

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recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

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

One (1)
27-02-1500

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.

One (1)
23-06-2200

TWO (2) 1-1/2" CROSSLAY DISCHARGES

Two (2) pre-connect 1-3/4" hose crosslays shall be installed over pump enclosure, with quarter turn 2" diameter ball valves. The outlets shall be a 2" NPT female swivel x 1-1/2" male NST hose threads.

The crosslay hosebeds shall have smooth aluminum sides. The hosebed decking shall be constructed with slots integrated into the hosebed floor.

Each hosebed shall provide for a minimum capacity of 200 feet of 1-3/4" diameter double jacket hose with nozzle, for hose provided by the fire department. A divider shall be installed to separate the crosslay beds.

the front crosslay be foam capable for future

Two (2)
21-01-2502

An Innovative Controls 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close.

Two (2)
24-61-1200

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

Two (2)
24-53-0020

For valve actuation, the specified discharge shall be equipped with a side mount valve control.

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

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

Two (2)
27-02-1500

Two (2) 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.

One (1)
23-08-3300

CROSSLAY HINGED COVER WITH END FLAPS

The crosslay hosebed shall be equipped with a single aluminum diamond plate hinged cover with vinyl end flaps with hook & loop fasteners. The cover shall have rubber bumpers, latching devices, and lift up handle on each end of the cover.

The hosebed cover shall be labeled, "Not a Standing or Walking Surface", per NFPA.

One (1)
29-20-5600

The vinyl cover shall be red in color.

One (1)
23-08-4130

CROSSLAY HOSE BED TRIM

The crosslay hosebed shall be equipped anodized aluminum angle overlays, one on each end of the hosebed.

One (1)
23-08-5019

CROSSLAY HOSEBEDS

Crosslay hosebed(s) shall be mounted over the upper pump panel or gauge panel in the upper portion of the pump enclosure. The crosslay hosebed shall be approximately 12" from the top of the pump enclosure.

One (1)
23-09-4100

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

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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.

One (1)
21-01-2502

An Innovative Controls 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close.

One (1)
24-02-1200

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

One (1)
24-03-1400

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

One (1)
24-61-1250

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

One (1)
24-53-0020

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

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

One (1)
27-02-1500

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.

One (1)
23-10-4100

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

10012-0004

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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.

One (1)
21-01-2502

An Innovative Controls 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close.

One (1)
24-02-1200

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

One (1)
24-03-1400

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

One (1)
24-61-1250

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

One (1)
24-53-0020

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

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

One (1)
27-02-1500

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.

One (1)
23-10-5100

RIGHT SIDE PUMP PANEL -- 3" DISCHARGE

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One (1) 3" 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 3" NST male hose threads. A color coded nameplate label shall be provided adjacent the control handle.

One (1)
21-01-2502

An Innovative Controls 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close.

One (1)
24-02-2500

One (1) lightweight aluminum elbow with 30 degree slant shall be provided. Threads shall be 5" Storz with lugs and manual locks x 3" female swivel NST with rocker lugs.

One (1)
24-03-2200

One (1) 5" lightweight aluminum Storz cap with cable or chain securement shall be provided.

One (1)
24-61-1300

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

One (1)
24-53-0300

One (1) Akron valve equipped with a manually operated pull rod, with quarter-turn locking feature and a manual slow-close device shall be provided on the specified discharge. The handle shall be equipped with color-coded name plate.

One (1)
27-02-1500

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.

One (1)
23-13-3100

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

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

One (1)
21-01-2502

An Innovative Controls 3/4" 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

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proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift to open and push down to close.

One (1)
24-02-1200

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

One (1)
24-03-1400

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

One (1)
24-61-1250

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

One (1)
24-53-0020

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

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

One (1)
27-02-1500

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.

One (1)
24-11-3200

3" MONITOR DISCHARGE

One (1) 3" discharge shall be piped to the area over the pump enclosure with 3" NPT male threads provided. The pipe shall be equipped with Victaulic couplings (if necessary) and shall be properly secured to prevent movement when a monitor or deck gun is attached. The quarter turn ball valve shall be controlled on pump panel.

A color coded nameplate label shall be provided adjacent the valve control handle.

One (1)
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21-01-2500

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

One (1)

24-61-1300

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

One (1)

24-53-2000

One (1) valve shall be controlled by a slow close handwheel type operator on the specified discharge. The handwheel shall take no less than 10 turns to move the valve from fully closed to fully opened. The handwheel shall be a rising stem design. The handwheel shall contain a stainless steel shaft and a double lead acme thread for durability and smooth operation. The handwheel shall be connected to the valve by linkage or heavy duty push pull type control cable. A color-coded name plate installed over the valve control.

One (1)

27-02-1500

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.

One (1)

25-01-0010

FOAM SYSTEM PROVISIONS

Provisions shall be provided for the future installation of a department/dealer supplied foam system.

One (1)

25-20-1200

1" FOAM TANK CONTROL -- CLASS A

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

One (1)

25-21-1300

INTEGRAL CLASS A FOAM TANK -- 20 GALLON

One (1) twenty (20) gallon Class A foam tank shall be installed within the water tank. The non-corrosive foam tank shall meet applicable sections of NFPA standards. The foam concentrate tank shall be provided with sufficient wash partitions so that the maximum

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dimension perpendicular to the plane of any partition shall not exceed 36 inches. The swash partition(s) shall extend from wall to wall and cover at least 75 percent of the area of the plane of the partition.

The foam concentrate tank shall be provided with a fill tower or expansion compartment having a minimum area of 12 square inches and having a volume of not less than 2 percent of the total tank volume. The fill tower opening shall be protected by a completely sealed air-tight cover. The cover shall be attached to the fill tower by mechanical means. The fill opening shall be designed to incorporate a 1/4 inch removable screen and shall be located so that foam concentrate from a five (5) gallon container can be dumped directly to the bottom of the tank to minimize aeration without the use of funnels or other special devices.

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

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

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

One (1)
25-23-1000

FOAM TANK DRAIN -- UNDER TANK

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

One (1)

== Pumper/Tanker-Side Mount Pump Compt - 918.018 09/18/18 ==

One (1)

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26-02-2200

SIDE MOUNT PUMP ENCLOSURE

The side mount pump enclosure shall be removable and supported from the chassis frame rails. This enclosure will allow independent flexing of the pump enclosure from the body and allow for quick removal. The support structure shall be constructed of extruded aluminum tubing and angle.

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 fire pump, valves and controls shall be accessible for service and maintenance as required by applicable sections of NFPA standards.

The "master" gauges shall be suitably enclosed and mounted on a full pump compartment width "hinged" gauge panel constructed of the same material as the pump operators control panel, allowing access to the backside of all gauges and gauge lines. The individual gauges shall be mounted inline with the control handle or adjacent to the control handle. Panel is to include a stainless steel piano hinge, flush mounted chrome plated trigger latch, and stainless steel cable end stops. Electrical wiring and all gauge lines shall be properly tie wrapped to prevent kinking or cutting of the lines when the panel is opened.

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.

Crosslay Installation

The area atop the pump enclosure shall be notched for the installation of a crosslay hose bed. The hosebed shall have smooth sides and a perforated floor to allow for drainage. Provisions shall be provided to secure hose and equipment per requirements of applicable NFPA standards.

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One (1)
26-30-1100

LEFT SIDE RUNNING BOARD -- SIDE MOUNT PANEL

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

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

One (1)
26-30-1150

RIGHT SIDE RUNNING BOARD -- SIDE MOUNT PANEL

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

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

One (1)
26-31-3340

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 black thermoplastic covered aluminum with push button type latches.

One (1)
26-35-5100

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.

One (1)
26-35-1100

LEFT SIDE PUMP PANEL -- BOLTED

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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.

One (1)
26-35-1200

RIGHT SIDE PUMP PANEL -- BOLTED

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

One (1)
26-55-1100

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.

One (1)
26-55-2400

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.

One (1)
26-56-1125

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.

One (1)
26-56-1225

MIDSHIP PUMP PANEL LIGHTS -- RIGHT SIDE

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Two (2) Tecniq E10-W0001-1 or equal LED lights with clear lenses shall be installed under an instrument panel light hood on the right side pump panel. The lights shall be controlled by a switch located on the operator's instrument panel.

One (1)
26-56-2000

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.

One (1)
27-01-1500

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.

One (1)
27-01-4100

TEST TAPS

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

One (1)
27-35-1100

WATER TANK GAUGE

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

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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.

One (1)

== HLHD/HRHD Single Axle Pumper/Tanker - 918.018 09/18/18 ==

One (1)

25-26-1500

WATER TANK - 1000 GALLON

The apparatus shall be equipped with a one-thousand (1000) gallon polypropylene water tank. The tank shall be equipped with a four-inch (4") overflow pipe (a six-inch (6") overflow pipe shall be provided if required by dump valve installation).

One (1)

25-25-0062

WATER TANK

The apparatus shall be equipped with a rectangular tank.

One (1)

25-44-1300

WATER TANK FILL TOWER

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

One (1)

25-42-1100

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

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

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

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

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

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

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

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

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

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

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

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

One (1)
25-42-1190

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.

One (1)
29-10-1000

HOSEBED SINGLE AXLE

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

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

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

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

One (1)
29-10-5100

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.

One (1)
29-10-8100

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ALUMINUM HOSEBED DIVIDER

One (1) adjustable hosebed divider constructed of .250" aluminum shall be installed on the apparatus.

One (1)
29-20-2000

VINYL HOSEBED COVER

The apparatus shall be equipped with a vinyl hosebed cover.

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

RED IN COLOR

One (1)
29-20-5600

The vinyl cover shall be red in color.

One (1)
30-00-0000

BODY CONSTRUCTION

One (1)
30-01-1800

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, hosebeds, and floors. All aluminum material shall be welded together using the latest mig spray pulse arc welding system.

Compartment floors shall be of the sweep out design with the floor higher than the compartment door lip and to be water and dust proof. All compartments shall be made to the maximum practical dimensions to provide maximum storage capacity. To ensure maximum storage space, the apparatus shall be constructed without any void spaces between the body and the compartment walls. Double wall construction does not meet this requirement.

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

Wheel well panels shall be formed aluminum that is welded in place. There shall be no visible bolt heads, retention nuts or fasteners on the exterior surface of the panel. To fully protect the wheel well area from road debris and to aid in cleaning, a full depth radius wheel well liner shall be provided. The frame side of the wheel well area on each side of the opening shall be attached to the frame side of the front and rear compartments. All seams on the frame side of the body shall be welded and caulked to prevent moisture from entering the compartments.

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

FASTENERS

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

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

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

One (1)
30-02-2100

COMPARTMENT FLOORS

The compartment floors shall be constructed of aluminum treadplate material.

One (1)
30-10-1100

GALVANIZED SUB-FRAME

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

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

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

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

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

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

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

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

One (1)
31-01-1100

BODY CONFIGURATION

The aluminum apparatus body shall be up to 144" long, reference the drawing for actual body length.

One (1)
44-06-2200

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.

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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.

One (1)
44-06-4100

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.

S One (1)
31-01-2135

BODY WIDTH

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

COMPARTMENT DEPTH

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

Drivers side
Full compartment depth of 26"

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

One (1)
29-00-1100

HOSEBED WIDTH

The width of the pumper body hosebed shall be 48".

One (1)
32-03-0063

COMPARTMENT HEIGHT

The left side body compartments shall be 63" high.

One (1)
32-03-1063

COMPARTMENT HEIGHT

The right side body compartments shall be 63" high.

One (1)

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30-02-1150

ROLL UP DOOR CONSTRUCTION

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

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

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

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

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

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

One (1)

32-05-1120

LEFT FRONT COMPARTMENT

There shall be one (1) full height compartment located ahead of the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door.

The compartment shall be equipped with the following:

One (1)

44-40-1100

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

One (1)
45-01-1050

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.

One (1)
55-01-1900

COMPARTMENT LIGHT

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

One (1)
55-06-1100

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

One (1)
32-05-1355

LEFT OVERWHEEL COMPARTMENT

There shall be one (1) compartment above the rear wheels. The compartment shall be equipped with a single natural finish roll up door.

The compartment shall be equipped with the following:

One (1)
44-40-1100

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

One (1)
45-01-1050

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.

One (1)
55-01-1900

COMPARTMENT LIGHT

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

One (1)
55-06-1100

10012-0004

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

One (1)
32-05-1720

LEFT REAR COMPARTMENT

There shall be one (1) full height compartment located behind the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door.

The compartment shall be equipped with the following:

One (1)
44-40-1100

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

One (1)
45-01-1050

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.

One (1)
55-01-1900

COMPARTMENT LIGHT

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

One (1)
55-06-1100

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

One (1)
32-06-1120

RIGHT FRONT COMPARTMENT

There shall be one (1) full height compartment located ahead of the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door.

The compartment shall be equipped with the following:

One (1)
44-40-1100

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

One (1)
45-01-1050

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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.

One (1)
55-01-1900

COMPARTMENT LIGHT

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

One (1)
55-06-1100

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

One (1)
32-06-1455

RIGHT HIGH SIDE COMPARTMENTS

There shall be one (1) compartment above the rear wheels. The compartment shall be equipped with a single natural finish roll up door.

The compartment shall be equipped with the following:

One (1)
44-40-1100

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

One (1)
45-01-1050

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.

One (1)
55-01-1900

COMPARTMENT LIGHT

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

One (1)
55-06-1100

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

One (1)

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32-06-1720

RIGHT REAR COMPARTMENT

There shall be one (1) full height compartment located behind the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door.

The compartment shall be equipped with the following:

One (1)
44-40-1100

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

One (1)
45-01-1050

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.

One (1)
55-01-1900

COMPARTMENT LIGHT

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

One (1)
55-06-1100

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

One (1)
33-60-1100

REAR BODY CONFIGURATION

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

One (1)
32-08-0210

REAR CENTER COMPARTMENT

There shall be one (1) full height compartment located at the rear of the apparatus. The compartment shall be equipped with a full height natural finish roll up door. The compartment shall be open to the rear side compartments, providing a transverse compartment at the rear of the truck.

The compartment shall be equipped with the following:

One (1)

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44-40-1100

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

One (1)

45-01-1050

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.

One (1)

55-01-3100

COMPARTMENT LIGHT

Two (2) LED light fixture shall be installed on the wall of the compartment. The light shall have a clear lens.

One (1)

55-06-1100

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

One (1)

33-61-1300

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.

One (1)

90-02-3500

SLIDE OUT VERTICAL LADDER MOUNTINGS

The ladder shall slide into the right rear of the apparatus, through the right side of the body. The vertically mounted slide in assembly shall be an integral part of the body and accessible through a hinged door.

One (1)

90-02-2920

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

One (1)

90-02-5310

INTERNAL FOLDING ATTIC LADDER MOUNTING

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

One (1)
90-03-0400

LADDER SOURCE

New ground ladders shall be provided by the purchaser.

Two (2)
90-16-5200

PIKE POLE MOUNTING BRACKET

Two (2) tube shall be provided for pike pole mounting. The tube shall have a 2" interior diameter and shall be mounted inside of the apparatus body.

One (1)

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One (1)
44-01-1450

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.

One (1)
44-01-4000

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.

One (1)
38-90-2050

ACCESS LADDER EZ CLIMB - LEFT REAR

There shall be a swing out and down access ladder supplied and installed on the apparatus, for accessing the top of the apparatus. It shall be of an all aluminum design and shall incorporate treads six (6") inches deep and no more than eighteen (18") inches apart. The ground to the first step dimension, on level ground, shall be no more than twenty-four (24") inches.

The access ladder shall have integrated hand holds in the steps, to aid in the ascent/descent of the ladder.

When in the deployed position the ladder shall have an angle of approximately 75-degrees to facilitate ascending and descending the ladder. The ladder shall be retained in the stowed and

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deployed position by two (2) gas cylinders and shall not require the use of latches to hold it in position.

S One (1)
33-70-1320

HANDRAIL REAR STEP

One (1) extruded aluminum non-slip handrails, approximately 30" in length, shall be provided and mounted on the rear of the apparatus.

LOCATED RIGHT REAR

One (1)
33-70-2100

HANDRAIL BELOW HOSEBED

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

One (1)
44-02-1100

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.

One (1)
44-02-2000

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.

One (1)
44-11-5100

WHEEL WELL PROVISION LOCATION

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

One (1)
44-10-1100

One (1) breathing air cylinder storage compartment shall be provided and located in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be bolted in-place and removable for repair or replacement.

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Compartment shall be provided with SCBA cylinder scuff protection. A brushed aluminum door with push button trigger latch shall be provided.

One (1)
44-10-6000

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

One (1)
44-11-5300

WHEEL WELL PROVISION LOCATION

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

One (1)
44-07-1200

FUEL PIPING AND FILL CAP

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

One (1)
44-11-5500

WHEEL WELL PROVISION LOCATION

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

One (1)
44-10-1100

One (1) breathing air cylinder storage compartment shall be provided and located in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be bolted in-place and removable for repair or replacement.

Compartment shall be provided with SCBA cylinder scuff protection. A brushed aluminum door with push button trigger latch shall be provided.

One (1)
44-10-6000

One (1) one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall

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be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

One (1)
44-11-5700

WHEEL WELL PROVISION LOCATION

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

One (1)
44-10-1100

One (1) breathing air cylinder storage compartment shall be provided and located in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be bolted in-place and removable for repair or replacement.

Compartment shall be provided with SCBA cylinder scuff protection. A brushed aluminum door with push button trigger latch shall be provided.

One (1)
44-10-6000

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

One (1)
44-17-0200

UPPER BODY SIDE COMPARTMENT

One (1) upper body compartment shall be provided top of body with dimensions of approximately 60" and over 21" deep.

The compartment shall have a lift-up door installed, constructed of 1/8" aluminum tread plate. The door shall have a stainless steel hinge and dual gas openers. The door opening shall be flanged upward 1" to prevent water from running into compartments when the door is closed. Two (2) heavy duty socket and plunger latches shall be installed to hold the door along with a heavy duty chrome grab handle to lift the door.

The compartment shall be located on the left side of the walkway.

One (1)
44-22-0020

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COMPARTMENT EXTERIOR FINISH

The roof compartments shall be constructed from smooth aluminum painted to match the apparatus body.

One (1)
44-19-1100

UPPER BODY SIDE COMPARTMENT

One (1) upper body compartment shall be provided top of body with dimensions of approximately 60" and over 21" deep.

The compartment shall have a lift-up door installed, constructed of 1/8" aluminum tread plate. The door shall have a stainless steel hinge and dual gas openers. The door opening shall be flanged upward 1" to prevent water from running into compartments when the door is closed. Two (2) heavy duty socket and plunger latches shall be installed to hold the door along with a heavy duty chrome grab handle to lift the door.

The compartment shall be located on the right side of the walkway.

One (1)
44-22-0020

COMPARTMENT EXTERIOR FINISH

The roof compartments shall be constructed from smooth aluminum painted to match the apparatus body.

One (1)
44-30-2100

UPPER BODY WALKWAY

The walkway area on top of the apparatus body shall be constructed of polished aluminum tread plate and shall have continuously welded seams to prevent the entry of moisture. The non-slip surface shall comply with applicable NFPA standards. The deck area, between the roof top compartments shall be reinforced with rectangular tubing or hat sections so that the walkway will support several firefighters without damage or deflection.

S One (1)
44-30-2200

UPPER BODY WALKWAY LANDING

A 36" X depth landing area at the top shall be provided for entry into the walkway. The landing area shall be constructed of polished aluminum tread plate and shall have continuously welded seams to prevent the entry of moisture. The non-slip surface shall comply with applicable NFPA standards.

One (1)

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44-30-2400

ROOF ACCESS GRAB RAIL

One (1) grab rail shall be positioned near the upper portion of the roof access ladder to assist with the transition of going from the ladder to the walkway.

One (1)

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S One (1)

60-01-1300

GENERATOR

One (1) Honda JH-EM5000SXA, 5000 watt, 120/240 volt portable generator shall be provided for mounting on the apparatus. The generator shall have an electric starter with a recoil manual backup starter. The single cylinder, four cycle, air cooled engine shall have an eleven (11) horsepower rating with a fuel tank capacity of 6.6 gallons for a run time of 8 hours at full load with a full tank. The generator shall have the following receptacles:

- Two (2) 20 amp 125 volt duplex straight blade NEMA 5-20R
- One (1) 30 amp 125 volt twist lock NEMA L5-30R
- One (1) 30 amp 125/250 volt twist lock NEMA L14-30R

The generator shall have approximate dimensions of 27" L x 21" W x 21-1/2" H and a weight of 225 pounds.

Data Label

A permanent data label indicating the following information shall be applied:

- Rated voltage
- Phase
- Frequency
- Amperage
- Continuous Watts
- Peak Watts

One (1)

60-20-3300

GENERATOR INSTALLATION

The generator shall be mounted on shock and anti-vibration rubber mountings and be equipped with a removable lifting bracket.

10012-0004

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A battery powered starter motor shall provide the generator starting system with the 12-volt power supplied from the chassis battery system. The ignition switch shall be located at the generator circuit breaker panel area. The 12-volt supply line from battery shall be adequate size and a circuit breaker installed at the power source.

The generator shall be installed in a location that will provide for adequate cooling air in accordance with manufacturer's recommendations. When mounted in an enclosed compartment, it shall be designed to operate with doors "open".

The generator muffler and flexible exhaust pipe (if required for remote muffler location) shall be securely supported and shall be shielded or insulated to prevent heating of the body, electrical components or equipment mounting. The exhaust system shall be installed so fumes, vapors, heat and vibrations do not enter the interior compartments. The exhaust outlet piped to the exterior and located so that the exhaust is directed away from operator's position. The exhaust piping and discharge shall be located or shielded to prevent thermal damage to the apparatus or equipment. Where parts of the exhaust system are exposed, so that they are likely to cause injury to operating personnel, suitable protective guards shall be provided.

ELECTRICAL SYSTEM INSTALLATION

The line voltage electrical system shall comply with applicable NFPA standards and shall comply also to the applicable sections of the National Electric Code #70 standards. Line voltage carrying equipment down stream of the power source shall be "listed" (where available) and installed in accordance with manufacturers instructions. The electrical equipment installed shall be suitable for intended use and type of locations (wet, dry, or underbody and chassis).

The grounding and bonding shall comply to applicable sections of NFPA standards. The chassis frame rail, body sheet metal, and cab sheet metal shall be properly bonded per NFPA schematic. The bonding copper conductor shall be rated at 115 % of current rating of power source.

OVER CURRENT PROTECTION PANEL

Manually re-settable overcurrent devices shall be installed to protect the line voltage electrical system components. A main overcurrent protection device shall be provided that is either incorporated in the power source or is connected to the power source by a power supply assembly. The size of the main overcurrent protection device shall not exceed 100 percent of the nameplate amperage rating on the power source specification label or the rating of the next larger available size overcurrent protection device where so recommended by the power source manufacturer.

The conductor used in the power supply assembly between the output terminals of the power source and the main overcurrent protection device shall not exceed 144 inches in length. If the

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power supply cable is longer than 144", a separate master disconnect switch shall be located at the generator.

Overcurrent protection devices shall be provided for each individual circuit and shall be sized at not less than 15 amps in accordance with NEC. Each overcurrent protection device shall be marked to identify the function of the circuit it protects. The circuit breaker panel and instruments shall be located so that all circuit breakers are readily visible under normal operating conditions. The panel shall be readily visible and located so that there is unimpeded access to the panel board controls.

LABELING OF EQUIPMENT

All circuit breakers shall be labeled and shall be provided for all interior and exterior outlets indicating output amperage, voltage and phase.

INSTRUCTION LABEL

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

One (1)
60-20-4050

CIRCUIT BREAKER BOX

One (1) circuit breaker box for single phase voltage equipment shall be provided capable of holding four (4) breakers.

One (1)
60-20-5100

CIRCUIT BREAKER BOX LOCATION

The circuit breaker box shall be installed in an outside body compartment.

L1 Compartment

One (1)
60-05-9300

GENERATOR DOOR INTERLOCK

One (1) interlock switch shall be installed on the compartment door containing the generator. The interlock is designed to shut off or prevent the starting of the generator when the door is closed.

One (1)
60-20-1500

10012-0004

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GENERATOR MOUNTING LOCATION

The generator shall be installed in the lower portion of the left side front compartment.

One (1)
60-20-8100

LINE VOLTAGE WIRING INSTALLATION

Line voltage wiring in the apparatus shall be with Type SO or approved cable suitable for mobile applications. The flexible electrical cable shall have 600-volt insulation rated for at least 194 degrees F. All junction boxes shall conform to the National Electric Code and shall be accessible for service.

Electrical cable shall be supported within 6 inches of any junction box and at a minimum of every 24 inches of run. Supports shall be made of corrosion protected metal that does not cut or abrade the conduit or cable and shall be mechanically fastened to the vehicle.

Electrical cable shall not be attached to chassis suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components, or low voltage wiring and shall be separated by a minimum of 12 inches from exhaust piping or properly shielded and separated from fuel lines by a minimum of 6 inches distance.

All wiring connections and terminations shall provide a positive mechanical and electrical connection. Connectors shall be installed in accordance with the manufacturer's instructions. Wire nuts or insulation displacement and insulation piercing connectors shall not be used.

Four (4)
60-25-1200

120V ELECTRIC RECEPTACLE -- STRAIGHT BLADE

Four (4) single 120-volt 20 amp straight blade, 3-prong receptacle with spring loaded weatherproof cover shall be provided.

locate 1 receptacle in front of body DS/PS each side.

Locate 1 receptacle each side in rear portion of body DS/PS

One (1)

== Pumper/Tanker-Equipment Systems - 918.018 09/18/18 ==

One (1)

== Pumper/Tanker - Single Axle - Pnt/Ltr/St - 918.018 09/18/18 ==

One (1)
80-05-1200

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BODY PAINT PROCESS

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

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

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

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

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

One (1)
80-06-1100

APPARATUS COLOR

match the cab

One (1)
80-30-1200

INTERIOR COMPARTMENT FINISH

Eight (8) 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.

Eleven (11)
80-39-2000

SHELF & TRAY FINISH

10012-0004

09/18/19

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Eleven (11) individual compartment components (shelves, trays, toolboards, dividers, etc) shall be painted to match the side body compartments.

One (1)
80-40-1400

WHEEL PAINTING

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

One (1)
80-42-1500

TOUCH-UP PAINT

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

One (1)
80-65-1600

MALTESE CROSSES

Two (2) Mylar gold leaf Maltese crosses with black outlining and a clear urethane coating shall be applied. The crosses shall be 12" in diameter.

One (1)
80-70-1600

REFLECTIVE STRIPING

A 4" wide 3M brand Scotchlite #680-10 reflective stripe shall be affixed to the perimeter of the vehicle. Striping shall conform to the applicable NFPA requirements. At least 50% of the perimeter length of each side and width of the rear and at least 25% of the perimeter width of the front of the vehicle shall have reflective stripe.

The side stripe shall be applied in a "Z" pattern.

One (1)
80-75-1600

COLOR OF STRIPING MATERIAL

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

One (1)
80-72-1108

CHEVRON STRIPING

10012-0004

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The entire rear portion of the body shall have Oralite V98 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.

One (1)

== Pumper/Tanker - Loose Equipment - 918.018 09/18/18 ==

PRODUCTION SPEC

Rosenbauer South Dakota

17910 Stock
OK DD
11/29/18

Exp. Date: 12/19/2018
Quote No: 10012-0004
BID PREP: C0-01-0010 Pumper/Tanker Bid Prep Forms
WARRANTY: C0-01-1010 Pumper/Tanker Warranties
CAB: CHASSIS Use Drop Down For Chassis Options
ELEC-DC: C0-50-0001 Pumper/Tanker-DC Electrical Sys ROSENBAUER ONLY
CHS MODS: C0-02-0000 Pumper/Tanker-Chassis Modifications
PLUMBING: C0-20-0000 Midship Pumper/Tanker Pump & Plumbing
PUMP COMPT: C0-26-0000 Pumper/Tanker-Side Mount Pump Compt
BODY-PMPR: C0-30-1400 HLHD/HRHD Single Axle Pumper/Tanker
BODY-CMMN: C0-44-0000 Pumper/Tanker-Common Body Parts
ELEC-AC: C0-60-0000 Pumper/Tanker-AC Electrical System
EQUIP-SYST: C0-70-0000 Pumper/Tanker-Equipment Systems
PAINT: C0-80-0000 Pumper/Tanker - Single Axle - Pnt/Ltr/St
EQUIP-LSE: C0-90-0000 Pumper/Tanker - Loose Equipment

09/18/2019

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PART NO	S	DESCRIPTION	QTY	ID
== Pumper/Tanker Bid Prep Forms - 918.018 09/18/18 ==			1	RAS
ROSENBAUER APPARATUS SOLUTIONS - RAS - 18			1	RAS
September 2018				
00-00-1300		Fire Department Name	1	RAS
00-00-1499		Overall Height Restriction, NONE	1	RAS
00-00-1509		Overall Length Restriction, NONE	1	RAS
00-00-1519		Overall Width Restriction, NONE	1	RAS
00-00-1529		Wheelbase Restriction, NONE	1	RAS
00-00-1539		Angle of Approach, NFPA Minimum, 8 Degrees	1	RAS
00-00-1549		Angle of Departure, NFPA Minimum, 8 Degrees	1	RAS
NFPA Equipment Allowances			1	RAS
00-00-1610		NFPA Pumper Equipment Allowance 2500#	1	RAS
00-00-1799			1	RAS
00-12-1100		Financial Stability Response	1	RAS
01-06-0500		Calculated Center of Gravity	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
01-07-0060		l-- Technical Drawings, Representative Drawings (3-View) (Left/Right/Rear)	1	RAS
01-07-1100		Change Orders	1	RAS
		== Pumper/Tanker Warranties - 918.018 09/18/18 ==	1	RAS
01-16-0150		l-- Warranty, Apparatus, Body Warranty, 1 Year	1	RAS
01-19-0150		l-- Warranty, Bdy, Alum, 1 Year	1	RAS
01-19-2800		l-- Warranty, Subframe, Lifetime Galv	1	RAS
01-20-0150		l-- Warranty, Paint, PPG, 1 Year	1	RAS
01-17-0750		l-- Pump Warranty, Waterous, 5 Years	1	RAS
01-17-1050	S	l-- Plmbg Warranty, Stnls Stl, 5 Years	1	RAS
		<u>STAINLESS STEEL PLUMBING WARRANTY</u>		
		The manufacturer shall provide a five (5) year warranty on the stainless steel plumbing components and installation. The manufacturer shall supply details of their warranty information with their bid submission.		
01-18-0450		l-- Warranty, Water Tank, UPF	1	RAS
01-33-3100		l-- Mnls, Bdy Complete, 1 Set Printed With CD	1	RAS
01-33-3400		l-- Mnls, Bdy Complete, Electronic Internet Service	1	RAS
		== Use Drop Down For Chassis Options - 1115.017 11/15/17 ==	1	RAC2
		== Pumper/Tanker-DC Electrical Sys ROSENBAUER ONLY - 918.018 09/18/18 ==	1	RAS
56-01-1600		l-- Siren, Elect, Whelen 295SLSA1	1	RAS
56-02-1750		l-- Spkr, Whelen SA315P, 100 Watt	1	RAS
56-02-1650		l-- Spkr Grille, Stnls Stl, "R"	1	RAS
56-03-1800		l-- Spkr Lctn, To Be Determined by Body Mfg	1	RAS
57-02-1900		l-- Lt Bar, Whelen, Justice, LED, 56" JE2NFPA	1	RAS
57-10-0600		l-- Lightbar Cntrl, with Master Warning Switch	1	RAS
58-71-1770		l-- Wrn Lts, Whelen, Upper Rr (2) M9 LED use existing lights on the body	1	RAS
57-20-1400		l-- Wrn Lt, Drvr, Whelen, M9, Red LED, Color Lens, Ea	1	RAS
57-20-1401		l-- Wrn Lt, Offer, Whelen, M9, Red LED, Color Lens, Ea	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
58-01-2180		-- Flange, Chrome, Wrn Lt, Whln, M9 Ea	2	RAS
58-46-2100		-- Wrn Lts, Whelen, Upper Side Front (2) M9 LED use existing lights on the body	1	RAS
57-20-1400		-- Wrn Lt, Drvr, Whelen, M9, Red LED, Color Lens, Ea	1	RAS
57-20-1401		-- Wrn Lt, Offcr, Whelen, M9, Red LED, Color Lens, Ea use existing lights on the body	1	RAS
58-01-2180		-- Flange, Chrome, Wrn Lt, Whln, M9 Ea	2	RAS
58-61-2100		-- Wrn Lts, Whelen, Upper Side Rr (2) M9 LED	1	RAS
57-20-1400		-- Wrn Lt, Drvr, Whelen, M9, Red LED, Color Lens, Ea use existing lights on the body	1	RAS
57-20-1401		-- Wrn Lt, Offcr, Whelen, M9, Red LED, Color Lens, Ea	1	RAS
58-01-2180		-- Flange, Chrome, Wrn Lt, Whln, M9 Ea	2	RAS
58-03-6400		-- Wrn Lts, Whelen, Upper Wing, (2) #600 LED	1	RAS
57-20-4010		-- Wrn Lt, Drvr, Whelen, 600 Red LED, Color Lens, Ea	1	RAS
57-20-4011		-- Wrn Lt, Offcr, Whelen, 600 Red LED, Color Lens, Ea	1	RAS
58-03-7300		-- Wrn Lts, Whelen, Inbrd Warn Lt, (2) M6 LED	1	RAS
57-20-1200		-- Wrn Lt, Drvr, Whelen, M6, Red LED, Color Lens, Ea	1	RAS
57-20-1201		-- Wrn Lt, Offcr, Whelen, M6, Red LED, Color Lens, Ea	1	RAS
58-01-2140		-- Flange, Chrome, Wrn Lt, Whln, M6, Ea	2	RAS
58-09-2100		-- Wrn Lts, Whelen, Intrsect (2) LINZ6 LED	1	RAS
57-20-2000		-- Wrn Lt, Drvr, Whelen, LINZ6, Red LED, Clear Lens, Ea	1	RAS
57-20-2001		-- Wrn Lt, Offcr, Whelen, LINZ6, Red LED, Clear Lens, Ea	1	RAS
58-01-2200		-- Flange, Chrome, Wrn Lt, Whln, LINZ6FC, Ea	2	RAS
58-26-2100		-- Wrn Lts, Whelen, Low Mid Bdy (2) LINZ6 LED	1	RAS
57-20-2000		-- Wrn Lt, Drvr, Whelen, LINZ6, Red LED, Clear Lens, Ea	1	RAS
57-20-2001		-- Wrn Lt, Offcr, Whelen, LINZ6, Red LED, Clear Lens, Ea	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
58-01-2200		-- Flange, Chrome, Wrn Lt, Whln, LINZ6FC, Ea	2	RAS
58-36-2100		-- Wrn Lts, Whelen, Low Rr Side (2) LINZ6 LED	1	RAS
57-20-2000		-- Wrn Lt, Drvr, Whelen, LINZ6, Red LED, Clear Lens, Ea	1	RAS
57-20-2001		-- Wrn Lt, Offcr, Whelen, LINZ6, Red LED, Clear Lens, Ea	1	RAS
58-01-2200		-- Flange, Chrome, Wrn Lt, Whln, LINZ6FC, Ea	2	RAS
58-81-2000		-- Wrn Lts, Whelen, Low Rr (2) M6 LED use existing lights on the body	1	RAS
57-20-1200		-- Wrn Lt, Drvr, Whelen, M6, Red LED, Color Lens, Ea	1	RAS
57-20-1201		-- Wrn Lt, Offcr, Whelen, M6, Red LED, Color Lens, Ea	1	RAS
58-01-2140		-- Flange, Chrome, Wrn Lt, Whln, M6, Ea	2	RAS
50-03-1000		Elecal, Base, Standard, W/O Load Mgmt	1	RAS
50-05-1510		-- Electrical Jct Box, Weather Resistant	1	RAS
50-12-1200		Swtch Panel, Cab Dash	1	RAS
51-05-6400		Lt, Pump Cmpt, 12 Volt LED With Swtch	1	RAS
51-05-9000		-- Switch on Light Head	1	RAS
52-01-1100		Back Up Alarm, w/Chassis	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
52-08-1009		l-- Hand Lights, NFPA Compliance - Spl'd/Instl'd by DEPT	1	RAS
53-01-1200		Marker Lts, LED, DOT Requirements	1	RAS
53-02-1200		License Plate Brkt, Stainless w/ LED Lt, Rr,	1	RAS
53-03-0065		Whelen Rr DOT LED Ltng Pkg M6	1	RAS
53-03-2750		l-- Tail/Brake Lts, Whelen, LED, M6 (Pair)	1	RAS
53-04-2750		l-- Turn Signals, Whelen, LED w/ Arrow, M6 (Pair)	1	RAS
53-06-3550		l-- Backup Lts, Whelen, LED, M6 (Pair)	1	RAS
53-07-1210		l-- Tail Lt Bezel, 4 Lts, Whln M6 (Pair), ABS Chrome	1	RAS
54-03-1200		l-- Ground Lts, Pump Panel, LED, Pair	1	RAS
54-03-1600		l-- Ground Lts, Rr Step, LED, Pair	1	RAS
54-04-1999		l-- Lt Swtch , Ground Lts w/ Park Brake	1	RAS
54-10-1450		Step Lt, Rr Tailboard, LED, Ea	2	RAS
54-11-2100		Lt Swtch , Step/Wlkwy Lts Wired Park Brake Swtch	1	RAS
54-12-1918		Deck Lts, Rr Of Hosebed	1	RAS
54-12-1300		l-- Deck Lts, Unity, 1-AG Spot 1-AG Flood	1	RAS
55-11-1100		Dr Open/Hazard Wrn Lt, w/Chassis	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
		== Pumper/Tanker-Chassis Modifications - 918.018 09/18/18 ==	1	RAS
10-02-1100		l-- Label, Data, Fluid Levels	1	RAS
10-02-1200		l-- Label, Data, Height x Length, Weight	1	RAS
10-02-1300		l-- Label, Data, "No Ride" Rr Step	1	RAS
10-02-2100		l-- Label, Indicating Number of Seats	1	RAS
10-02-2500		l-- Label, "Caution: Do Not Wear Helmet While Seated"	1	RAS
10-03-1100		l-- Frame, Counter Balance Weight 700 LBS TO THE REAR	1	RAS
10-03-6600		Tow Plates (2), Severe Duty, Rr Frame Rail, Under Step	1	RAS
80-43-2400		l-- Painting, Tow Plates, Blk	1	RAS
10-04-0310		l-- Front Bumpers, 3000, 2-Rib S/S 12"H, T/P Wings	1	RAS
10-05-3124		l-- Frnt Bmpr, 3000, 2-Rib S/S 12"H, T/P Apron, T/P Wings, 24" Extnsn	1	RAS
10-04-2720		l-- Bumper Cmpt, Center, Hosewell Compt	1	RAS
10-04-3125		l-- Bumper Compt, Frnt Bmpr, Velcro Straps, Pair	1	RAS
10-06-1600		l-- Tire Pressure Indicator, Sngl Axle, Commercial, p/n RWTG1235	1	RAS
10-07-0100		l-- Exhaust Supplied With Chassis	1	RAS
10-08-2100		l-- Mud Flaps, Rr Whls, Blk, w/ Bdy	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
10-13-2200	S	-- Cabinet, Out Board Rr Facing, Cargo Net Drivers side 56" High x 24.5" Wide x 12" Deep. Passenger side 56" High x 23" Wide x 12" Deep	2	RAS
<u>INTERIOR CABINET</u>				
There shall be two (2) rear facing cabinet installed near the exterior side wall of the cab, directly behind the front cab seats. The cabinet shall be constructed of smooth aluminum plate with minimum interior dimensions of Drivers side 56" High x 24.5" Wide x 12" Deep. Passenger side 56" High x 23" Wide x 12" Deep				
A cargo net designed to restrain the contents shall be installed on the cabinet.				
10-13-3520		-- Exterior Finish, Cabinet, DA Sanded	2	RAS
10-13-3550		-- Interior Finish, Cabinet, Natural	2	RAS
== Midship Pumper/Tanker Pump & Plumbing - 918.018 09/18/18 ==			1	RAS
20-23-2200		-- Pump, Waterous, CXVC20, 1 Stage, Midship	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
20-23-2130		-- Pump Flow Rtnng, Waterous, CXC20, 1500 GPM	1	RAS
22-03-1600		-- Intk, Ungated, 6", LH Side	1	RAS
22-41-5700		-- Cap, 6", Chrome Long Hndl	1	RAS
22-03-2600		-- Intk, Ungated, 6", RH Side	1	RAS
22-41-5700		-- Cap, 6", Chrome Long Hndl	1	RAS
20-26-2200		-- Pump Seal, Mech, Waterous	1	RAS
20-26-2400		-- Pump Impeller, Waterous, Flame Plated Hubs	1	RAS
20-26-3200		-- Pump Shift, Waterous, Elec/Pneumatic Operated	1	RAS
20-29-1200		-- Primer, Trident Air Primer, Automatic	1	RAS
20-29-1250		-- Primer Control - Main Pump Rocker Switch	1	RAS
27-10-3400		-- Pressure Gvrnr, FRC, In-Cntrl, w/Bdy, TGA300	1	RAS
		STAINLESS STEEL PUMP PLUMBING *	1	RAS
21-00-2000		-- Screens/Anodes, Pump	1	RAS
21-00-3300		-- Piping, Stnls Stl - 1250 GPM & Up	1	RAS
21-01-0200		-- Pump Drain, Master, Manifold, Push Pull Type	1	RAS
21-01-5500		-- Intk Manifold, Stnls Stl	1	RAS
21-01-6500		-- Dschg Manifold, Stnls Stl	1	RAS
21-01-7100		-- Painting, Pump & Piping, Silver	1	RAS
21-01-8100		-- Threads, National Hose (NST)	1	RAS
22-51-5210		-- Tank-To-Pump, Water Tank, 3" Vlv/4" Piping, Midship, Pmpr/Tnkr	1	RAS
22-50-0100		-- Single Tank to Pump Control - Pump Operator's Panel	1	RAS
24-62-1300		-- Vlv Mfger, AKR, 8000, (3")	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
24-53-2000		-- Dschrg Vlv Cntrl, Handwheel - Linear Actuated	1	RAS
23-02-1300		-- Tank Fill/Cooling Line, Water Tank, 2"	1	RAS
24-62-1200		-- Vlv Mfger, AKR, 8000, (2")	1	RAS
22-55-4012		-- Intk Vlv Cntrl, Pull Rod, 1/4 Turn, AKR - IC	1	RAS
20-30-3100		-- Pump Instln, Midship Split-Shaft, By Bdy Bldr	1	RAS
20-31-3600		Dump-Relief Vlv, Suction Side, TFT A18	1	RAS
20-31-4100		Pump Cooler, Bypass-To-Tank, 3/8"	1	RAS
20-31-5200		Heat Exchanger, Engine, Complete	1	RAS
20-31-1000		-- Fire Pump Testing - Pumpers/Tankers	1	RAS
20-31-1100		-- Pump Test, Pumper, UL	1	RAS
20-31-1500		-- Pump Test, Label	1	RAS
22-12-1100		Intk, Aux, Gtd, 2-1/2", NST, Left Side	1	RAS
21-01-2502		-- Drain/Bleeder, IC Lift-Up, Mnl 1/4 Turn - Spec Only	1	RAS
22-41-1100		-- Plug, 2-1/2", Chrome Rocker Lug, w/Chain	1	RAS
24-62-1250		-- Vlv Mfger, AKR, 8000, (2-1/2")	1	RAS
22-55-4050		-- Intk Vlv Cntrl, AKR, Mnl Swing Type-Adjacent	1	RAS
23-05-2300		-- Dschg, 1-1/2", Front RH Bumper, Swivel, NST Chrome Swivel to be foam capable for future	1	RAS
21-01-2200		-- Drain/Bleeder, Class 1, Automatic	1	RAS
23-05-9200		-- Hose Connection, Abv Frnt Bmpr, Swivel	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
24-61-1150		-- Vlv Mfger, AKR, 8000, (1-1/2")	1	RAS
24-53-0020		-- Dschg Vlv Cntrl, Pull Rod, 1/4 Turn, SM, AKR - IC w/Gauge	1	RAS
27-02-1500		-- Gauge, Dschg, IC, 2-1/2" 400#, WF	1	RAS
23-06-2200		-- Crosslay Dschgs, (2) 1-1/2", Over Pump Panel, NST 200 ft x1-3/4-in ea w/divider the front crosslay be foam capable for future	1	RAS
21-01-2502		-- Drain/Bleeder, IC Lift-Up, Mnl 1/4 Turn - Spec Only	2	RAS
24-61-1200		-- Vlv Mfger, AKR, 8000, (2")	2	RAS
24-53-0020		-- Dschg Vlv Cntrl, Pull Rod, 1/4 Turn, SM, AKR - IC w/Gauge	2	RAS
27-02-1500		-- Gauge, Dschg, IC, 2-1/2" 400#, WF	2	RAS
23-08-3300		-- Crosslay Cvr, Alum T/P, Sngl, W/Vinyl End Flaps (Non NFPA Walking Surface)	1	RAS
29-20-5600		-- Vinyl Cover, Color, RED	1	RAS
23-08-4130		-- Crosslay Trim, Alum Angles, Both Sides	1	RAS
23-08-5019		-- Crosslay Dschgs, Over Pump Panel, Normal Height	1	RAS
23-09-4100		Dschg, 2-1/2", Left Side, Pump Panel, NST	1	RAS
21-01-2502		-- Drain/Bleeder, IC Lift-Up, Mnl 1/4 Turn - Spec Only	1	RAS
24-02-1200		-- Elbow, 2-1/2"F x 2-1/2" NST M, Chrome	1	RAS
24-03-1400		-- Cap, 2-1/2", NST Chrome, Rocker Lug, w/Chain	1	RAS
24-61-1250		-- Vlv Mfger, AKR, 8000, (2-1/2")	1	RAS
24-53-0020		-- Dschg Vlv Cntrl, Pull Rod, 1/4 Turn, SM, AKR - IC w/Gauge	1	RAS
27-02-1500		-- Gauge, Dschg, IC, 2-1/2" 400#, WF	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
23-10-4100		Dschg, 2-1/2", Right Side, Pump Panel, NST	1	RAS
21-01-2502		l-- Drain/Bleeder, IC Lift-Up, Mnl 1/4 Turn - Spec Only	1	RAS
24-02-1200		l-- Elbow, 2-1/2"F x 2-1/2" NST M, Chrome	1	RAS
24-03-1400		l-- Cap, 2-1/2", NST Chrome, Rocker Lug, w/Chain	1	RAS
24-61-1250		l-- Vlv Mfger, AKR, 8000, (2-1/2")	1	RAS
24-53-0020		l-- Dschg Vlv Cntrl, Pull Rod, 1/4 Turn, SM, AKR - IC w/Gauge	1	RAS
27-02-1500		l-- Gauge, Dschg, IC, 2-1/2" 400#, WF	1	RAS
23-10-5100		Dschg, 3" x 3"NST, Right Side, Pump Panel, NST	1	RAS
21-01-2502		l-- Drain/Bleeder, IC Lift-Up, Mnl 1/4 Turn - Spec Only	1	RAS
24-02-2500		l-- Elbow, LW Alum, 5" Storz x 3"F	1	RAS
24-03-2200		l-- Cap, LW Alum, 5" Storz, w/Cable	1	RAS
24-61-1300		l-- Vlv Mfger, AKR, 8000, (3")	1	RAS
24-53-0300		l-- Dschg Vlv Cntrl, Pull Rod, 1/4 Turn, SM, AKR Slow Close - IC w/Gauge	1	RAS
27-02-1500		l-- Gauge, Dschg, IC, 2-1/2" 400#, WF	1	RAS
23-13-3100		Dschg, 2-1/2", Left Rr, NST	1	RAS
21-01-2502		l-- Drain/Bleeder, IC Lift-Up, Mnl 1/4 Turn - Spec Only	1	RAS
24-02-1200		l-- Elbow, 2-1/2"F x 2-1/2" NST M, Chrome	1	RAS
24-03-1400		l-- Cap, 2-1/2", NST Chrome, Rocker Lug, w/Chain	1	RAS
24-61-1250		l-- Vlv Mfger, AKR, 8000, (2-1/2")	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
24-53-0020		-- Dschg Vlv Cntrl, Pull Rod, 1/4 Turn, SM, AKR - IC w/Gauge	1	RAS
27-02-1500		-- Gauge, Dschg, IC, 2-1/2" 400#, WF	1	RAS
24-11-3200		Monitor Dschg, 3", Over Midship Pump Enclsr, NPT	1	RAS
21-01-2500		-- Drain/Bleeder, IC Lift-Up, Mnl 1/4 Turn	1	RAS
24-61-1300		-- Vlv Mfger, AKR, 8000, (3")	1	RAS
24-53-2000		-- Dschrg Vlv Cntrl, Handwheel - Linear Actuated	1	RAS
27-02-1500		-- Gauge, Dschg, IC, 2-1/2" 400#, WF	1	RAS
25-01-0010		Foam System Provisions, Future Installation, Dept or Dealer Installed	1	RAS
25-20-1200		-- Foam Plmbg, Sngl Class A Tank, 1" Mnl Vlv	1	RAS
25-21-1300		-- Foam Tank, Intgrl Poly, 20 Gal, Class A	1	RAS
25-22-9100		-- Foam Tank, No Manufacturer Preference	1	RAS
25-23-1000		-- Foam Tank Drain, 1" Gate Vlv, Under Tank	1	RAS
		== Pumper/Tanker-Side Mount Pump Compt - 918.018 09/18/18 ==	1	RAS
26-02-2200		Pump Enc, Side Mt, Extrd Alum, 40-49"W, Crslys	1	RAS
26-30-1100		Rng Brd, LH Pump Panel, Alum T/P, SM	1	RAS
26-30-1150		Rng Brd, RH Pump Panel, Alum T/P, SM	1	RAS
26-31-3340		Pump Side Access Door, Upper RH, Line X	1	RAS
26-35-5100		Pump Panel, Line X, LH/RH, SM	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
26-35-1100		-- Pump Panel, Bltd, LH	1	RAS
26-35-1200		-- Pump Panel, Bltd, RH	1	RAS
26-55-1100		Labels, Test Data and Safety Placards	1	RAS
26-55-2400		Labels, Innovative Controls Color Coded	1	RAS
26-56-1125		Pump Panel LED Lts, (3) Tecniq E10-W0001-1, Midship LH w/ Sw on Pmp Oprtr's Pnl	1	RAS
26-56-1225		Pump Panel LED Lts (2), Midship RH, Tecniq E10-W0001-1	1	RAS
26-56-2000		Pump Panel Lt (1), Actuated w/Pump Engagement	1	RAS
27-01-1500		-- Mstr Gauges, IC, 4" PSI, Pr	1	RAS
27-01-4100		Gauge, Test Taps	1	RAS
27-35-1100		Water Tank Gauge, FRC, TankVision Pro 300, Pump Panel WLA300-A00	1	RAS
		== HLHD/HRHD Single Axle Pumper/Tanker - 918.018 09/18/18 ==	1	RAS
25-26-1500		-- Water Tank, 1000 Gal, Pmpr/Tnkr , Poly	1	RAS
25-25-0062		-- Water Tank, Rectangular Tank	1	RAS
25-44-1300		-- Water Tank, Fill Tower, 10" x 10", <1500 Gals	1	RAS
25-42-1100		-- Water Tank, Base Specs, Poly	1	RAS
25-42-1190		-- Water Tank, Manufacturer, No Preference, Poly	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
29-10-1000		Hosebed, Grating, Extrd Alum, <180" Long	1	RAS
29-10-5100		l-- Hosebed, Strge Cpcty, 55 Cubic Feet, Minimum	1	RAS
29-10-8100		Hosebed, Divider, 1/4" Alum	1	RAS
29-20-2000		Hosebed Cvr, Vinyl, <180" L, <74" W, Velcro RED IN COLOR	1	RAS
29-20-5600		l-- Vinyl Cover, Color, RED	1	RAS
30-00-0299		Raw Material Surcharge - Single Alxe	1	RAS
30-01-1800		Bdy Const - Rosenbauer FX - 1/8" Alum - Sngl Axl Pmpr/Tnkr	1	RAS
30-02-2100		l-- Alum Treadplate Compt Floors	1	RAS
30-10-1100		l-- Sub Frame, Hot-Dip Galv	1	RAS
31-01-1100		l-- Bdy, Frmd Alum, Pmpr/Tnkr , Up to 144"	1	RAS
44-06-2200		l-- Whl Well Panel, Alum Pntd, Sngl Axle - Alum	1	RAS
44-06-4100		l-- Fenderette, Polished Aluminum	1	RAS
31-01-2135	S	102" OAW, 26" Full depthDS/ 13/26OS <u>BODY WIDTH</u>	1	RAS
		The overall width of the pumper body shall not exceed 102".		
		<u>COMPARTMENT DEPTH</u>		
		The side compartments on the pumper body shall have the following dimensions:		
		Drivers side Full compartment depth of 26"		
		Officers side Lower portion depth of 26" Upper portion depth of 13"		
29-00-1100		l-- Hosebed, Pmpr, <180" L, 48" Wide	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
32-03-0063		-- Cmpt Height, 63" High Left	1	RAS
32-03-1063		-- Cmpt Height, 63" High Right	1	RAS
32-04-1230		Roll Up Drs, HL/HR	1	RAS
		use existing roll up doors		
30-02-1150		-- Roll-Up Drs - ROM Mfg	1	RAS
32-05-1120		-- Ahd Rr Whls - Full Ht Comp't - Roll Up Door - Natural Finish	1	RAS
44-40-1100		-- Vents, Compts, Louvers, Includes Filters (Ea)	1	RAS
45-01-1050		-- Shelving Tracks, (2) Unistrut, Alum	1	RAS
55-01-1900		-- Cmpt Lt, Wall, Surface Incand, (1) Ea Cmpt	1	RAS
55-06-1100		-- Cmpt Lt, Dr Swtch, Auto, Ea	1	RAS
32-05-1355		-- Upr Hgh Sde - Sgle Comp't - Roll Up Dr - Natural Finish	1	RAS
44-40-1100		-- Vents, Compts, Louvers, Includes Filters (Ea)	1	RAS
45-01-1050		-- Shelving Tracks, (2) Unistrut, Alum	1	RAS
55-01-1900		-- Cmpt Lt, Wall, Surface Incand, (1) Ea Cmpt	1	RAS
55-06-1100		-- Cmpt Lt, Dr Swtch, Auto, Ea	1	RAS
32-05-1720		-- Bhnd Rr Whls - Full Ht Comp't - Roll Up Door - Natural Finish	1	RAS
44-40-1100		-- Vents, Compts, Louvers, Includes Filters (Ea)	1	RAS
45-01-1050		-- Shelving Tracks, (2) Unistrut, Alum	1	RAS
55-01-1900		-- Cmpt Lt, Wall, Surface Incand, (1) Ea Cmpt	1	RAS
55-06-1100		-- Cmpt Lt, Dr Swtch, Auto, Ea	1	RAS
32-06-1120		-- Ahd Rr Whls - Full Ht Comp't - Roll Up Door - Natural Finish	1	RAS
44-40-1100		-- Vents, Compts, Louvers, Includes Filters (Ea)	1	RAS
45-01-1050		-- Shelving Tracks, (2) Unistrut, Alum	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
55-01-1900		l-- Cmpt Lt, Wall, Surface Incand, (1) Ea Cmpt	1	RAS
55-06-1100		l-- Cmpt Lt, Dr Swtch, Auto, Ea	1	RAS
32-06-1455		l-- Upr Hgh Sde - Sgle Comp't - Roll Up Door - Natural Finish	1	RAS
44-40-1100		l-- Vents, Compts, Louvers, Includes Filters (Ea)	1	RAS
45-01-1050		l-- Shelving Tracks, (2) Unistrut, Alum	1	RAS
55-01-1900		l-- Cmpt Lt, Wall, Surface Incand, (1) Ea Cmpt	1	RAS
55-06-1100		l-- Cmpt Lt, Dr Swtch, Auto, Ea	1	RAS
32-06-1720		l-- Bhnd Rr Whls - Full Ht Comp't - Roll Up Door - Natural Finish	1	RAS
44-40-1100		l-- Vents, Compts, Louvers, Includes Filters (Ea)	1	RAS
45-01-1050		l-- Shelving Tracks, (2) Unistrut, Alum	1	RAS
55-01-1900		l-- Cmpt Lt, Wall, Surface Incand, (1) Ea Cmpt	1	RAS
55-06-1100		l-- Cmpt Lt, Dr Swtch, Auto, Ea	1	RAS
33-60-1100		Rr Bdy, Flat Back	1	RAS
32-08-0210		l-- Rr Cntr Comp't - Full Ht Roll Up/Trans- Natural Finish	1	RAS
44-40-1100		l-- Vents, Compts, Louvers, Includes Filters (Ea)	1	RAS
45-01-1050		l-- Shelving Tracks, (2) Unistrut, Alum	1	RAS
55-01-3100		l-- Cmpt Lt, Wall, LED, (2) Ea Cmpt	1	RAS
55-06-1100		l-- Cmpt Lt, Dr Swtch, Auto, Ea	1	RAS
33-61-1300		l-- Rr Step, Pmpr-Tnkr Bdy, Bolt-On, 12"	1	RAS
90-02-3500		Ladder Strge, Vrtcl Slide In, Right Rr Bdy	1	RAS
90-02-2920		l-- Compt Door, Smooth, With Chevron	1	RAS
90-02-5310		Ladder Mtg, Fldg Attic, Internal	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
90-03-0400		Ladders, Provd'd By Purchaser/Fire Dept	1	RAS
90-16-5200		Pike Pole Mtg Tube, Intrnl, Ea	2	RAS
		== Pumper/Tanker-Common Body Parts - 918.018 09/18/18 ==	1	RAS
44-01-1450		l-- Bdy Trim, Frnt Cmpt, Ht of Side Cmpts, Alum T/P	1	RAS
		Rr BODY DESIGN - PUMPER/TANKER	1	RAS
44-01-4000		l-- Bdy Trim, Entire Rr Bdy, Smooth for Chevron Stripe	1	RAS
38-90-2050		l-- Access Ladder, Rosenbauer EZ Climb, Left Rr	1	RAS
33-70-1320	S	l-- Handrail, Rr Step, Vert, 30", Sngl LOCATED RIGHT REAR	1	RAS
		<u>HANDRAIL REAR STEP</u>		
		One (1) extruded aluminum non-slip handrails, approximately 30" in length, shall be provided and mounted on the rear of the apparatus.		
33-70-2100		l-- Handrails, Pmpr, Below Hosebed, Horz, 48"	1	RAS
44-02-1100		l-- Rub Rails, Lwr Bdy, Extrd Alum	1	RAS
44-02-2000		l-- Rub Rails, Spacers, Nylon	1	RAS
44-11-5100		Whl Well Prvsns, Ahd of Whls Left Side	1	RAS
44-10-1100		l-- Whl Well Cmpt, Sngl SCBA Tube, Alum Dr	1	RAS
44-10-6000		l-- Whl Well Cmpt, SCBA Cmpt Straps	1	RAS
44-11-5300		Whl Well Prvsns, Bhnd Whls Left Side	1	RAS
44-07-1200		l-- Fuel Fill Cap, LH Whl Well Panel-Open	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
44-11-5500		Whl Well Prvsns, Ahd of Whls Right Side	1	RAS
44-10-1100		l-- Whl Well Cmpt, Sngl SCBA Tube, Alum Dr	1	RAS
44-10-6000		l-- Whl Well Cmpt, SCBA Cmpt Straps	1	RAS
44-11-5700		Whl Well Prvsns, Bhnd Whls Right Side	1	RAS
44-10-1100		l-- Whl Well Cmpt, Sngl SCBA Tube, Alum Dr	1	RAS
44-10-6000		l-- Whl Well Cmpt, SCBA Cmpt Straps	1	RAS
44-17-0200		l-- Roof Cmpt, Left Side, >21"D x <60"L	1	RAS
44-22-0020		l-- Roof Compartment Exterior Finish - Painted Smooth Aluminum	1	RAS
44-19-1100		l-- Roof Cmpt, Right Side, >21"D x <60"L	1	RAS
44-22-0020		l-- Roof Compartment Exterior Finish - Painted Smooth Aluminum	1	RAS
44-30-2100		l-- Roof Access, Open Rr Walkway Btwn Roof Cmpts	1	RAS
44-30-2200	S	l-- Roof Access, Open Landing Area In Frt Of folding steps <u>UPPER BODY WALKWAY LANDING</u> A 36" X depth landing area at the top shall be provided for entry into the walkway. The landing area shall be constructed of polished aluminum tread plate and shall have continuously welded seams to prevent the entry of moisture. The non-slip surface shall comply with applicable NFPA standards.	1	RAS
44-30-2400		l-- Roof Access, Grab Rail, At Top Of Roof Area Access	1	RAS
		== Pumper/Tanker-AC Electrical System - 918.018 09/18/18 ==	1	RAS
60-01-1300	S	l-- Gnrtr, Honda Gas, 5KW, 120/240V, 1 Ph, Prtbl JH-EM5000SXA <u>GENERATOR</u> One (1) Honda JH-EM5000SXA, 5000 watt, 120/240 volt portable generator shall be provided for mounting on the apparatus. The generator shall have an electric starter with a recoil manual backup starter. The single cylinder, four cycle, air cooled engine shall have an eleven (11) horsepower rating with a	1	RAS

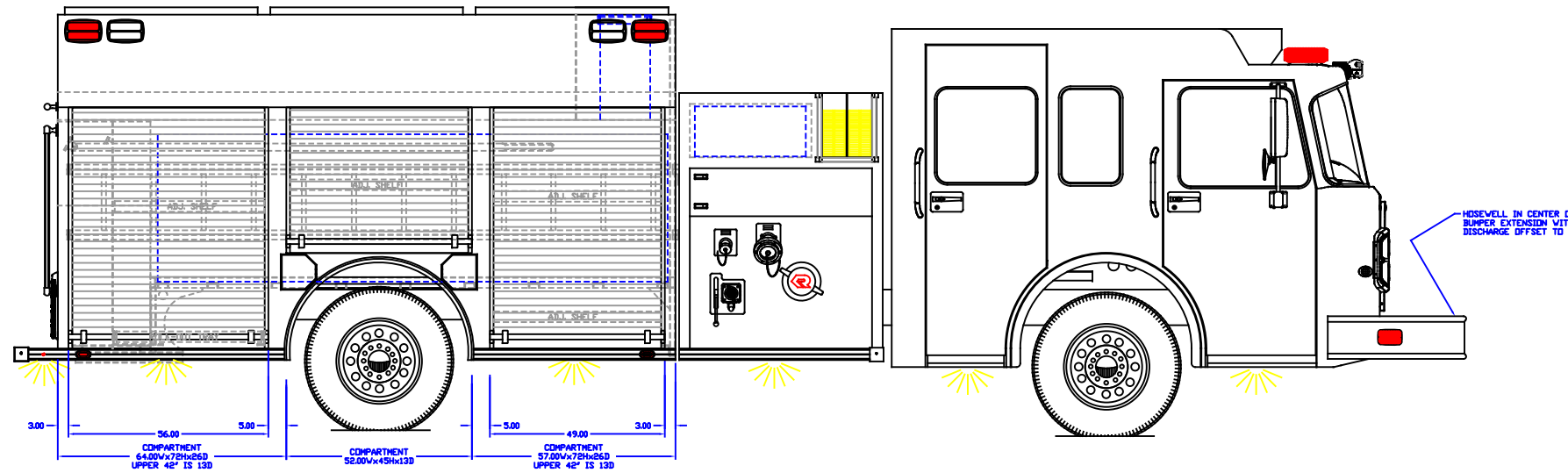
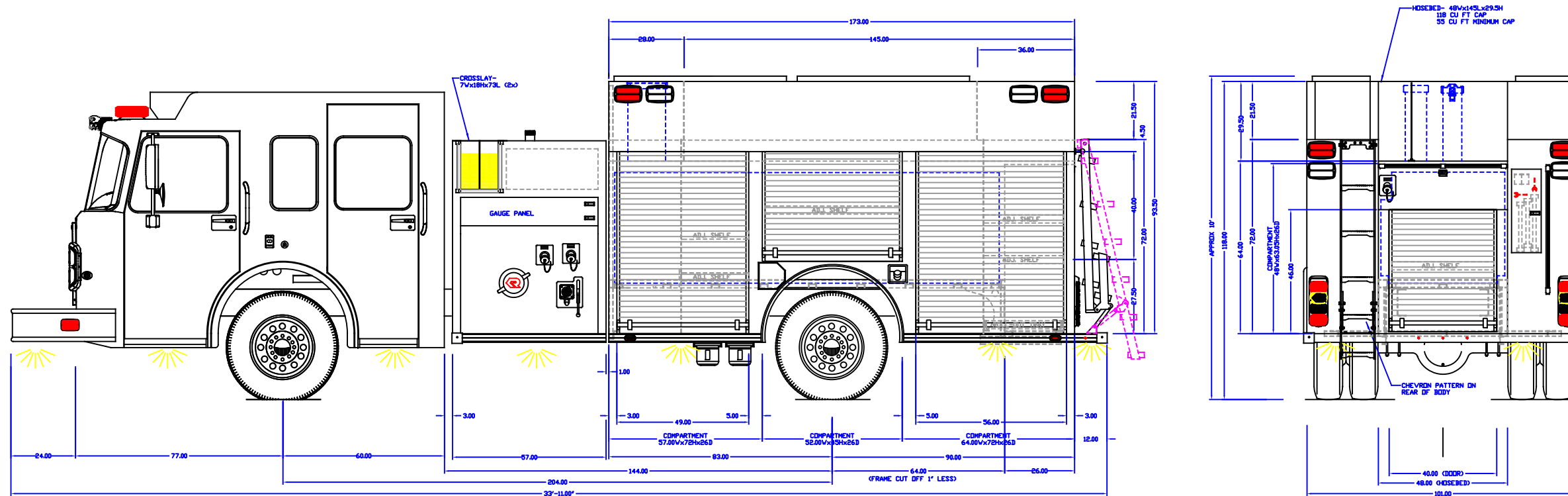
PART NO	DESCRIPTION	QTY	ID
	fuel tank capacity of 6.6 gallons for a run time of 8 hours at full load with a full tank. The generator shall have the following receptacles: <ul style="list-style-type: none"> • Two (2) 20 amp 125 volt duplex straight blade NEMA 5-20R • One (1) 30 amp 125 volt twist lock NEMA L5-30R • One (1) 30 amp 125/250 volt twist lock NEMA L14-30R The generator shall have approximate dimensions of 27" L x 21" W x 21-1/2" H and a weight of 225 pounds.		
	<u>Data Label</u> A permanent data label indicating the following information shall be applied: <ul style="list-style-type: none"> • Rated voltage • Phase • Frequency • Amperage • Continuous Watts • Peak Watts 		
60-20-3300	-- Gnrtr Install, Fxd , Gas/Diesel, Base Specs	1	RAS
60-20-4050	-- Circuit Breaker Box, 3 to 5KW, 1 PH	1	RAS
60-20-5100	-- Gnrtr Breaker Lctn, Side Cmpt	1	RAS
	L1 Compartment		
60-05-9300	-- Dr Interlock, Gnrtr Dr Closed	1	RAS
60-20-1500	-- Gnrtr Mtg, Left Side Front LwrCmpt	1	RAS
60-20-8100	-- Gnrtr Wiring, Type SO Cable, Rubber Cvred	1	RAS
60-25-1200	-- Rcptcl, 120V, 20 Amp, Strght Bld, Sngl locate 1 receptacle in front of body DS/PS each side. Locate 1 receptacle each side in rear portion of body DS/PS	4	RAS
	== Pumper/Tanker-Equipment Systems - 918.018 09/18/18 ==	1	RAS

OK FOR PRODUCTION
 INITIALS: DD
 JOB NUMBER: 17910
 DATE: 12/13/18

MAIN FILE: --
 DEPT: --
 DEALER: --

PRODUCTION APPROVED

- NOTES:
1. OVERALL HEIGHT IS IN LOADED CONDITION. UNLOADED HEIGHTS MAY BE 4" ABOVE HEIGHTS SHOWN.
 2. DO NOT SCALE DRAWING.
 3. ALL DIMENSIONS ARE APPROXIMATE AND SUBJECT TO ENGINEERING CHANGES.
 4. DRAWING MAY OR MAY NOT SHOW ALL ITEMS AS DESCRIBED IN THE WRITTEN DETAIL SPECIFICATIONS.
 5. INCLUSION OF AN ITEM ON THE DRAWING DOES NOT CONSTITUTE INCLUSION OF THAT ITEM WITH THE FINAL DELIVERED UNIT.
 6. THE EFFECTIVE DOOR OPENINGS WILL BE APPROX. 2" LESS THAN THE NOTED COMPARTMENT OPENING FOR ROLL UP DOORS AND UP TO APPROX. 4" LESS FOR HINGED DOORS



APPROVED BY:

CHASSIS:	SPARTAN
PUMP:	WATEROUS 1500 GPM
TANK:	POLY/1000/20 FOAM
PANEL MATL:	THERMOPLASTIC
COMP INTERIOR:	SPATTER PAINTED
MAXIMUM HEIGHT	NONE
MAXIMUM LENGTH	NONE
BODY WIDTH	101"

REVISED:	DATE:	
REVISED:	DATE:	
REVISED:	DATE:	
REVISED: RAN	DATE: 8/28/19	
DRAWN: RAN	DATE: 11/20/18	

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STOCK REBUILD