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

17735 Clean Cab Demo Custom Pumper SM 2

BID SPECIFICATIONS

FOR

ROSENBAUER CUSTOM PUMPER

One (1)
00-00-1499

OVERALL HEIGHT

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

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

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

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

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

While pre-payment discounts may be enticing, it is important to know just how stable the manufacturer seeking your funds is before you make that commitment. If you enter into one of these agreements and the manufacturer hits a rough patch, it is you that will be hurting, because your funds may not be recoverable. However, if you enter into a contract with a financially sound manufacturer, you will reap all of the benefits of a well-built truck at a lower cost. You may equally, by taking advantage of the time-value of money, be able to afford more truck than initially thought, because funds saved by leveraging pre-payment options could allow you get some added features that you might not necessarily have been able to afford.

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

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

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

required amount. The higher the debt coverage ratio, the easily and more fluidly a company is positioned to pay its monthly obligations and operating costs.

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

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

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

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 that 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

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 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)
01-19-0250

ALUMINUM BODY WARRANTY - FIVE YEAR

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

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

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

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

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

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

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

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.

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)
01-20-0250

PAINT WARRANTY FIVE YEAR

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

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

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

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

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

One (1)
01-17-0870

PUMP WARRANTY

Rosenbauer South Dakota

Rosenbauer America, LLC (Rosenbauer) warrants, to the original buyer only, that products and parts manufactured by Rosenbauer America, LLC 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, provided the buyer notifies Rosenbauer in writing, of the defect in said product within the warranty period, and said product is found by Rosenbauer America to be conforming with the aforesaid warranty.

When required in writing by Rosenbauer, defective products must be promptly returned by the buyer to the Rosenbauer plant or at such other place as may be specified by Rosenbauer with transportation and other charges prepaid. A Return Goods Authorization (RGA) is required for all products and parts and may be requested by phone, fax or mail. The aforesaid warranty excludes any responsibility or liability of Rosenbauer America, LLC 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 Rosenbauer America 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, Rosenbauer America will assign to the buyer, if requested by Buyer;

C. Any product or part, altered, modified, serviced or repaired other than by Rosenbauer America, 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.)

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. Rosenbauer America 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. Rosenbauer America liability hereunder, either for breach of warranty or for negligence, is expressly limited at Rosenbauer America option:

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

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

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

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

One (1)
01-17-1050

STAINLESS STEEL PLUMBING WARRANTY

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

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.

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

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

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

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

One (1)
01-33-3400

"ON-LINE" SERVICE MANUAL SUPPORT

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

Parts Listings within Manuals

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

Illustrative Schematics within Manuals

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

Digital Images within Manuals

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

Installation Instructions within Manuals

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

Automatic Updates of Manuals and Parts Listings

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

Electrical Schematics

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

Wiring Systems 12 and 120 Volt:

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

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

One (1)
02-90-1900

CHASSIS

A chassis shall be furnished per the attached specifications.

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)
56-02-1600

SPEAKER

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

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)
57-02-1250

LIGHTBAR

One (1) Whelen Ultra Freedom IV light bar shall be included with the apparatus cab. The light bar shall be a model F4N7QLED and shall be mounted on the roof of the cab, towards the front, above the windshield.

The light bar shall feature:

- A 72" light bar designed for high performance
- Two (2) red Linear Super LED corner modules
- Two (2) red 400 series Linear Super LED endcap lights
- Two (2) red 400 series Linear Super LED lights
- Two (2) white 400 series Linear Super LED lights with 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)
58-71-1820

UPPER REAR WARNING LIGHTS

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

One (1)
57-20-8100

The driver side warning light shall be a Whelen LED rotator, model L31HRF with a red lens.

One (1)
57-20-8101

The officer side warning light shall be a Whelen LED rotator, model L31HRF with a red lens.

One (1)
58-74-5100

REAR WARNING LIGHT MOUNTING

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

One (1)
58-03-6300

UPPER WING FRONT WARNING LIGHTS

One (1) pair of Whelen model M6 LED warning lights shall be installed, one each side one the front of the chassis cab upper wing area. 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)
58-01-2140

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

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)
58-01-2140

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

One (1)
58-09-2000

INTERSECTION WARNING LIGHTS

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

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)
58-26-2400

LOWER MID-BODY WARNING LIGHTS

One (1) pair of Whelen model M2 LED warning lights, model M2WR, shall be installed , one each side of the apparatus, mid-body in the rub rail. The dimensions of the lights shall be 4-1/4" x 2-11/16".

Will only fit in EXT rub rail WITHOUT bezel

One (1)
57-20-1000

The driver side warning light shall be a Whelen Model M2WR wide-angle red Super-LED™ with color lens.

One (1)
57-20-1001

The officer side warning light shall be a Whelen Model M2WR wide-angle red Super-LED™ with color lens.

One (1)
58-36-2400

LOWER REAR SIDE WARNING LIGHTS

One (1) pair of Whelen model M2 LED warning lights shall be installed , one each side of the apparatus, towards the rear of the body, in the rub rail. The dimensions of the lights shall be 4-1/4" x 2-11/16".

Will only fit in EXT rub rail WITHOUT bezel

One (1)
57-20-1000

The driver side warning light shall be a Whelen Model M2WR wide-angle red Super-LED™ with color lens.

One (1)
57-20-1001

The officer side warning light shall be a Whelen Model M2WR wide-angle red Super-LED™ with color lens.

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".

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.

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

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

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

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

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

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

The electrical circuits shall be provided with low voltage overcurrent protective devices. Such devices shall be accessible and located in required terminal connection locations or weather resistant enclosures. The overcurrent protection shall be suitable for electrical equipment and shall be automatic reset type and meet SAE standards. All electrical equipment, switches, relays, terminals, and connectors shall have a direct current rating of 125 percent of maximum current

for which the circuit is protected. The system shall have electro-magnetic interference suppression provided as required in applicable SAE standards.

The electrical system shall include the following:

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

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

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

NFPA REQUIRED TESTING OF ELECTRICAL SYSTEM

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

1. Reserve capacity test:

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

2. Alternator performance test at idle:

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

3. Alternator performance test at full load:

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

4. Low voltage alarm test:

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

NFPA REQUIRED DOCUMENTATION

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

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

b. A written load analysis, including:

1. The nameplate rating of the alternator.

2. The alternator rating under the conditions.

3. Each specified component load.

4. Individual intermittent loads.

S One (1)
24-31-2110

RESCUE MODE

A momentary rocker switch shall be installed to auto deploy the rear compartment electric slide tray and the officers side clean bunker storage module when park brake is applied. The switch shall be conveniently located for ease of operation and labeled appropriately. This switch will need to be activated prior to allow the auto deploy feature to function.

SWITCH TO BE LABELED:

"RESCUE MODE"

also this will be engaged with the park brake

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.

S One (1)
50-10-2000

AUTO DEPLOY FEATURE

The auto deploy feature on this truck will be controled with a momentary rocker switch on the cab console.

The momentary rocker switch activates the auto deploy for the rear compartment electric slide tray and the officers side clean bunker storage module when park brake is applied. The

switch shall be conveniently located for ease of operation and labeled appropriately. This switch will need to be activated prior to allow the auto deploy feature to function.

S One (1)
54-15-6060

PTO SWITCH

A **PTO** switch with indicator shall be installed on the cab dash and at the **pump panel** to control the **PTO**. The switches shall be wired to operate in a three-way configuration to allow the **PTO** to be controlled from either location regardless of switch position. The switches shall be labeled **"PTO".**

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)
50-41-3000

AIR HORNS

Two (2) 24.5" Stuttertone chrome plated air horns shall be recess mounted into the front bumper with one positioned on each side. An air protection valve shall be provided in the air horn piping that will not allow the chassis air brake system to drop below 90 PSI.

One (1)
50-43-2000

ELECTRIC TRAFFIC HORN AND AIR HORN SELECTOR SWITCH

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

One (1)
50-43-2200

AIR HORN FOOT SWITCH

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

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)
52-08-1300

HANDLIGHT

One (1) Streamlight Survivor® LED orange personal right-angle flashlight (P/N 90509) shall be installed. The flashlight shall include a mounting bracket, with fast charge 12 volt charger wired to the apparatus battery system to allow the light to recharge when not in use.

mount drivers side crew area by outer seat base

One (1)
52-08-1302

HANDLIGHT

One (1) Streamlight Survivor® LED yellow personal right-angle flashlight (P/N 90519) shall be installed. The flashlight shall include a mounting bracket, with fast charge 12 volt charger wired to the apparatus battery system to allow the light to recharge when not in use.

mount officers side crew area by outer seat base

One (1)
52-08-2400

HANDLIGHT INSTALLATION

The location of the handlight installation shall be in the apparatus body. All components shall be installed as directed by the fire department.

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

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
- 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)
10-03-6000

REAR TOWING PROVISIONS

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

One (1)
80-43-2400

The tow plates shall be painted black.

One (1)
10-05-4618

BUMPER

The chassis shall feature a heavy duty bumper constructed from ASTM A36, 1/4" thick steel and painted primary job color. The bumper shall be 12" high by 102" wide with two inch (2") flanges and chamfered corners.

Integral heavy duty steel bumper "wings" shall extend from the bumper to the cab.

The bumper shall be mounted to an eighteen inch (18") long chassis frame extension.

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

One (1)
10-06-1110

HUB AND LUG NUT COVERS

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

One (1)
10-06-1310

STAINLESS STEEL WHEEL COVERS

The front and rear outer wheels of the single rear axle apparatus shall have Real Wheels, mirror finish stainless steel full wheel covers complete with stainless steel hub and lug nut covers. The rear wheels shall be furnished with braided stainless steel air valve extensions.

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.

One (1)
10-11-0300

4-DOOR CAB INTERIOR DOOR PROTECTION PANELS

Scuff plates for the lower inside portion of each interior cab door shall be installed, fabricated from aluminum tread plate.

One (1)

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

One (1)
20-27-1600

ROSENBAUER N FIRE PUMP

A Rosenbauer Model N fire pump shall be mounted and installed. The midship pump system shall have a rated capacity of 1500 GPM and shall meet all applicable sections of NFPA standards. The pump shall be constructed and mounted in accordance with the following specifications.

Pump shall deliver the percentage of rated discharge at pressures indicated below:

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% of rated capacity at 165 pounds net pressure

IMPELLER AND SHAFT

The high-grade light alloy impellers shall be accurately balanced and mounted on a stainless steel pump shaft. The shaft shall be supported by three roller bearings; two located in the gearbox and one in the suction inlet. Bearings shall be protected from water and sediment by maintenance free self-adjusting mechanical seals.

PUMP DRIVE SYSTEM

Fire pump shall incorporate high strength helical gear drive single stage transmission. Pump drive system shall be with a heavy-duty PTO system bolted directly to the chassis transmission. There shall be a heavy-duty drive shaft furnished from the PTO to the midship pump transmission.

One (1)
20-27-0190

Pump Body Material

The pump body is to be of high quality seawater resistant stainless duplex steel. Heavy cast iron pumps are not acceptable.

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.

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
- 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)
20-28-3400

PTO PUMP SHIFT SPECIFICATIONS -- PUMP AND ROLL

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

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

The following indicator lights shall be included with pump shift.

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

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

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

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

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

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.

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.

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)
22-03-1600

LEFT SIDE -- 6" UNGATED INTAKE

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

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

One (1)
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)
22-51-5210

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)
24-62-2300

The valve shall be an Elkhart three-inch (3") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.

One (1)
22-55-5080

The valve control shall be a manually operated pull-rod with aircraft cable control. The lever shall be locking with a polished finish. The lever shall have a 6” stroke for ease of operation.

The aircraft cable used to control the valve from the lever shall be furnished with 7/8” bulkhead and 5/16” thread on both ends. The cable end nearest the valve will have a 5/16” swivel u-joint. This cable allows for ease of maintenance and operation.

The control shall be properly identified with a color-coded name plate.

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)
24-62-2200

The valve shall be an Elkhart two-inch (2") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.

One (1)
22-55-5080

The valve control shall be a manually operated pull-rod with aircraft cable control. The lever shall be locking with a polished finish. The lever shall have a 6” stroke for ease of operation.

The aircraft cable used to control the valve from the lever shall be furnished with 7/8” bulkhead and 5/16” thread on both ends. The cable end nearest the valve will have a 5/16” swivel u-joint. This cable allows for ease of maintenance and operation.

The control shall be properly identified with a color-coded name plate.

One (1)
20-30-3200

MIDSHIP FIRE PUMP DRIVESHAFTS AND INSTALLATION

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

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)
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 ¾" drain and bleeder valve. A nameplate label and removable screen shall be installed.

One (1)
21-01-2502

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)
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)
24-62-2250

The valve shall be an Elkhart two and one half-inch (2-1/2") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.

One (1)
22-55-5020

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

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.

use foam capable manifold for both crosslays. for future foam options.

Two (2)
21-01-2502

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

Two (2)
24-61-2200

The specified valve shall be an Elkhart two-inch (2") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.

Two (2)
24-56-3100

For valve actuation, the specified discharge shall be equipped with a side mount valve control, with air craft cable 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 aircraft cable that is used to control the valve, shall be furnished with 7/8” bulkhead both ends, 5/16” threaded ends and will also require a 5/16” swivel u-joint that unhooks from the ball valve. This cable will be used for ease of maintenance and operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted gauge 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)
23-08-4150

ROLLERS FOR CROSSLAY HOSE BED

The crosslay hosebed shall be equipped stainless steel "U" shaped roller system, one on each end of the hosebed.

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.

Two (2)
23-09-4100

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

Two (2) 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.

Two (2)
21-01-2502

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

Two (2)
24-02-1200

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

Two (2)
24-03-1400

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

Two (2)
24-61-2250

The specified valve shall be an Elkhart two and one half-inch (2-1/2") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.

Two (2)
24-56-3100

For valve actuation, the specified discharge shall be equipped with a side mount valve control, with air craft cable 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 aircraft cable that is used to control the valve, shall be furnished with 7/8” bulkhead both ends, 5/16” threaded ends and will also require a 5/16” swivel u-joint that unhooks from the ball valve. This cable will be used for ease of maintenance and operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted gauge 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)
23-10-4100

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

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 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)

24-02-1200

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)
24-61-2250

The specified valve shall be an Elkhart two and one half-inch (2-1/2") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.

One (1)
24-56-3100

For valve actuation, the specified discharge shall be equipped with a side mount valve control, with air craft cable 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 aircraft cable that is used to control the valve, shall be furnished with 7/8” bulkhead both ends, 5/16” threaded ends and will also require a 5/16” swivel u-joint that unhooks from the ball valve. This cable will be used for ease of maintenance and operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted gauge 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

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 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)
24-02-2500

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)
24-61-2300

The specified valve shall be an Elkhart three-inch (3") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.

One (1)
24-56-3004

One (1) manually operated pull rod, with air craft cable control, shall be provided on the specified discharge. The handle shall be equipped with a color-coded nameplate label.

The aircraft cable that is used to control the valve, shall be furnished with 7/8" bulkhead both ends, 5/16" threaded ends and will also require a 5/16" swivel u-joint that unhooks from the ball valve. This cable will be used for ease of maintenance and operation.

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.

S One (1)
23-11-1800

LEFT SIDE CAT WALK

One (1) **hard suction hose** compartment shall be fabricated and installed on top of the driver's side catwalk. The compartment shall be constructed of **painted** smooth aluminum .

S One (1)
23-11-1900

RIGHT SIDE CAT WALK HOSE BED

One (1) **hard suction hose** compartment shall be fabricated and installed on top of the officers side catwalk. The compartment shall be constructed of **painted** smooth aluminum .

S One (1)
23-12-2200

RIGHT SIDE FRONT OF HOSEBED -- 2-1/2" DISCHARGE

One (1) 2-1/2" discharge shall be to the right side **front** of hosebed area and 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. An engraved nameplate label shall be provided adjacent the control handle.

Front

One (1)
21-01-2502

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)
24-61-2250

The specified valve shall be an Elkhart two and one half-inch (2-1/2") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.

One (1)
24-56-3100

For valve actuation, the specified discharge shall be equipped with a side mount valve control, with air craft cable 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 aircraft cable that is used to control the valve, shall be furnished with 7/8" bulkhead both ends, 5/16" threaded ends and will also require a 5/16" swivel u-joint that unhooks from the ball valve. This cable will be used for ease of maintenance and operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted gauge 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)
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)
24-61-2300

The specified valve shall be an Elkhart three-inch (3") swing-out ball valve. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valves shall be capable of bi-directional flow and incorporating a self-locking ball. The valve shall not require lubrication of seats or any other internal waterway parts, and be capable of swinging out of the waterway for maintenance.

One (1)
24-56-3004

One (1) manually operated pull rod, with air craft cable control, shall be provided on the specified discharge. The handle shall be equipped with a color-coded nameplate label.

The aircraft cable that is used to control the valve, shall be furnished with 7/8” bulkhead both ends, 5/16” threaded ends and will also require a 5/16” swivel u-joint that unhooks from the ball valve. This cable will be used for ease of maintenance and operation.

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)
24-15-1700

COBRA EXM MONITOR (7200)

Monitor shall be constructed from durable, hard anodized, lightweight Elk-O-Lite® material with a variable cross-sectional and vaned waterway for flows up to 1250 GPM. The monitor shall be constructed with thrust rods and thrust bearings on both horizontal and vertical rotational joints for improved product longevity.

The monitor shall be configured with 3” or 4” 150# Flange, 3” NPT, 3” BSPT, or DN80 Flange style inlet connection and with 2.5” NHT or 2.5” BSPP style outlet connection.

The monitor shall have two (2) gear motors that allow for simultaneous vertical and horizontal adjustment, one motor shall control the 350 degree horizontal rotation while the other motor shall control the -45 degree to +120 degree vertical rotation from horizontal.

It shall provide an input for a sensor/switch to enable/disable the +90 degree to +120 degree vertical travel, with horizontal and vertical motors shall have a manual override device for use in the event of power failure. All electric controls shall be NEMA 4 rated and allow for programmable horizontal center position, vertical and horizontal stops, stow position, keep out zones, and motor speeds fast or slow. The electric control shall allow for horizontal and vertical oscillation. The electric control shall be CAN and/or radio frequency compatible; electric control shall be compatible with both 12VDC and 24VDC power supply.

One (1)
24-15-1780

EXM STOW MODULE

The Stow Module shall be a Controller Area Network (CAN) Electronic Control Unit (ECU). It shall be connected to the same controller area network as the EXM monitor and read CAN messages to set stow output signals. The CAN Stow Module shall provide a minimum of tow (2) stow output signals. Each stow output shall switch to ground when the EXM monitor is not stowed. Each stow output shall switch to open circuit within 5-seconds when the EXM monitor is stowed. Each stow output shall switch to open circuit within 5-seconds if CAN

communications to the EXM monitor are lost. CAN Stow Module shall have a NEMA 4 rating with a relay switched output to maintain state when power is disconnected. It shall operate from a supply voltage of 10-30 VDC. At least one stow output shall have over current protection to at least 9 A and 28 VDC. The CAN Stow Module power supply shall have reverse polarity protection and shall incorporate circuit board moisture protection.

S One (1)
24-15-1792

EXM PANEL MOUNT CONTROLS

The deck gun controls shall be mounted on the pump panel.

THE DECK GUN CONTROLS SHALL BE MOUNTED ON THE PUMP PANEL WITH REMOTE

S One (1)
24-18-8100

MONITOR EXTENDER

One (1) Elkhart Extender model #8598, part number 08598001, monitor riser shall be provided. The 18" Extender shall be compatible with the Elkhart Vulcan Series monitor's and the range of other compact monitors. The unit shall be designed for use with monitor and nozzle flow at 1250 GPM maximum with 100 PSI nozzle pressure with a maximum inlet pressure rating at 200 PSI.

The unit shall have a push button panel mounted control. The Extender package shall include a variety of wire harnesses in lengths from 5 to 40 feet. The installation shall have an in-cab warning light that shall alert unit is not retracted. The pressure switch shall not allow the Extender to move when internal pressure exceeds 10 PSI.

The unit shall have a 3" Victaulic base by a 3" Flange.

One (1)

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

One (1)
26-02-2300

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.

S One (1)
26-10-1100

COMPARTMENTS -- AHEAD OF PUMP ENCLOSURE

The area to the front of the pump enclosure shall be an equipment compartment. The compartment shall be
located between the running board and shall extend right to left across the chassis frame rails.

The compartment shall be integral with pump enclosure and constructed of same material as pump enclosure.
The compartment shall be equipped with a lap door storage module on the officers side and a pullout storage
module on the drivers side with an appropriate latch. The compartments shall be provided with floor drains,
vent, and compartment lights.

The compartment dimensions shall be approximately 14.5 WIDE , and 27” depth, and 33" High on the drivers side,
with a Lap door compartment with line x finish. This compartment will house 1 set of clean bunker gear with bottle.

The compartment on the officers side shall be approximately 33" front to rear width, and 27" depth, and 75" high
on the officers side with line x finish.

An electric roll-out equipment tray shall be installed in the compartment. The tray with telescoping slides

and cam follower bearings shall be rated to a maximum load of 500 lbs. The tray shall have an electric powered motor.

The tray shall be formed of .188" smooth aluminum plate, fabricated with a storage module to house
3 sets of clean turn out gear with airpacks and a Ric Kit.

Inside the cab there is a rocker switch labeled "RESCUE MODE". When the switch is turned on to "RESCUE MODE",
and when the park brake is applied this will auto deploy the officers side clean bunker storage module.

There shall be a Red E-Stop button on the side of the apparatus.
This E-Stop will disable all electric power to the side storage module.

Drivers side compartment will house 1 set of clean bunker gear with bottle.
Officers side compartment dimensions shall be approximately 33" front to rear width, and 27" depth, and 75" high on the officers side with a lapped door. This compartment will house 3 sets of clean bunker gear with bottles.
there shall be a switch in the cab and at the officers side pump panel for auto deploy.

Two (2)
55-02-1200

COMPARTMENT LIGHT

One (1) LED light fixture shall be installed in the upper area of the exterior compartment of the apparatus. The light shall have a clear lens.

Two (2)
55-06-1100

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

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)
26-31-3200

PUMP ENCLOSURE ACCESS DOOR -- RIGHT SIDE UPPER

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

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

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

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.

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.

S One (1)
54-15-6060

PTO SWITCH

A **PTO** switch with indicator shall be installed on the cab dash and at the **pump panel** to control the **PTO**. The switches shall be wired to operate in a three-way configuration to allow the **PTO** to be controlled from either location regardless of switch position. The switches shall be labeled **"PTO".**

One (1)

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

One (1)
25-26-1400

WATER TANK - 750 GALLON

The apparatus shall be equipped with a seven-hundred-fifty (750) 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.

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

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

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

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

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

The tank must be isolated from the cross members through the use of hard rubber strips with a minimum thickness and width dimension of 1/4” x 1” and a hardness of approximately 60

durometer. The rubber must be installed so it will not become dislodged during normal operation of the vehicle. Additionally, the tank must be supported around the entire bottom outside perimeter and captured both in the front and rear as well as side to side to prevent tank from shifting during vehicle operation.

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

Although the tank is designed on a free floating suspension principle, it is required that the tank have adequate vertical hold down restraints to minimize movement during vehicle operation. If proper retention has not been incorporated into the apparatus hose floor structure, an optional mounting restraint system shall be located on top of the tank, half way between the front and the rear on each side of the tank. These stops can be constructed of steel, stainless steel or aluminum angle having minimum dimensions of 3" x 3" x 1/4” and shall be approximately 6” to 12” long. These brackets must incorporate rubber isolating pads with a minimum thickness of 1/4” inch and a hardness of 60 durometer affixed on the underside of the angle. The angle should then be bolted to the body side walls of the vehicle while extending down to rest on the top outside edge of the upper side wall of the tank.

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

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

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.

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.

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)
30-01-2250

ELECTROLYSIS CORROSION CONTROL

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

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

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

One (1)
30-02-2200

COMPARTMENT FLOORS

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

One (1)
30-10-1700

EXTREME DUTY SUB-FRAME

The subframe shall be provided with reinforced "Severe Duty" construction consisting of double gussets and additional structural steel tubing. The subframe shall be mounted with stress isolating rubber cone bearings on the chassis frame rails. This provides optimum weight distribution on the axles assuring the required soft soil mobility and maximum traction for cross-country travel.

The apparatus shall be constructed using an extreme-duty steel subframe. This subframe shall be independent of the chassis frame and support the body and equipment. The upper portion of the extreme duty subframe shall be constructed of heavy duty 1.5" x 3" 7 gauge steel tube, 3" channel and plate steel gussets. It shall be designed to "cradle" the tank transversely and longitudinally to prevent fore and aft motion, yet allowing the tank to "float", preventing twisting of the tank on uneven terrain. The upper portion of the extreme duty subframe shall include heavy duty outriggers to support the body and equipment. The front of the subframe shall be mounted to the chassis using stress isolating rubber cone bearing to reduce twisting stress on the body. The rear platform itself shall be constructed from 1.5" x 3" 7 gauge steel tube and 2"x3"x1/4" steel angle and shall support the rear compartment and the rear of the body.

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.

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.

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.

One (1)
31-01-2115

BODY WIDTH

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

COMPARTMENT DEPTH

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

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

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

One (1)
29-00-1300

HOSEBED WIDTH

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

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.

Six (6)
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.

Six (6)
30-02-1210

DOOR LOCKS

A cylindrical door lock shall be provided on the roll up door(s). The door lock shall operate a rod mechanism located within the bottom rail of the door that extends into both side rails when locked.

S 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 **painted** 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)
45-02-1200

ADJUSTABLE SHELF

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

S One (1)
45-06-1100

500# ROLLOUT TRAY

One (1) roll-out equipment tray shall be installed in the compartment. The tray with extruded slides and stainless steel bearings shall be rated to a maximum load of 500 lbs. There shall be a lock to prevent movement, when the tray is in the closed position.

The tray shall be formed of .188" smooth aluminum plate, fabricated with two (2) inch sides. Reflective material measuring 1” x 6” shall be installed on each front corner both on the face and side of tray for firefighter safety.

One (1)
55-01-1250

COMPARTMENT LIGHTS

Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.

One (1)
55-06-1400

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

S 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 **painted** 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)
45-02-1200

ADJUSTABLE SHELF

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

One (1)
55-01-1250

COMPARTMENT LIGHTS

Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.

One (1)
55-06-1400

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

S 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 **painted** 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)
55-01-1250

COMPARTMENT LIGHTS

Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.

One (1)
55-06-1400

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

S One (1)
32-06-1030

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 **painted** 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)
45-02-1200

ADJUSTABLE SHELF

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

One (1)
55-01-1250

COMPARTMENT LIGHTS

Two (2) ROM vertically mounted roll-up compartment LED V3 door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat buildup.

One (1)
55-06-1400

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

S One (1)
45-00-5600

LEFT OVERWHEEL COMPARTMENT

There shall be one (1) comaprtment above the rear wheels. The compartment shall be equipped with a single **painted** 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)
45-02-1200

ADJUSTABLE SHELF

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

S One (1)
46-17-0019

REAR COMPARTMENT

There shall be one (1) full height compartment module located behind the rear wheels. The compartment module shall be equipped with a full height **painted** roll up door.

The compartment shall be equipped with the following:

One (1)
33-60-1100

REAR BODY CONFIGURATION

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

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.

S One (1)
46-18-0040

REAR CENTER COMPARTMENT

There shall be one (1) full height compartment located at the rear of the apparatus. The compartment shall be **60.5" high x 38" deep x 48" wide** and be equipped with a **double lap** door. The compartment shall be partitioned off from the side compartments.

The compartment shall **have full height lap doors.**

Inside the cab there is a rocker switch labeled "RESCUE MODE". When the switch is turned on to "RESCUE MODE", and when the park brake is applied this will auto deploy the rear storage module.

There shall be a Red E-Stop button on the rear of the apparatus. This E-Stop will disable all electric power to the rear storage module.

One (1)
44-40-1020

A removable louvered vent shall be provided 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.

S One (1)

45-07-5200

1000# ELECTRIC ROLLOUT TRAY

One (1) **ELECTRIC ROLLOUT** equipment tray(s) shall be installed **in the rear compartment.** The tray assembly shall have a **stainless steel** slide frame with sealed roller bearings rated to 1,000 pounds. A tray constructed of .190" smooth aluminum plate with four 3" sides shall be mounted to the slide frame. The slide frame shall extend **100%** out of **the rear** compartment allowing the tray to be easily accessible from outside the compartment. The slide shall have a 3-3/8" deck height.

46" WIDE
33" DEEP

Two (2) vertical tool boards will be mounted on the slide. As the slide comes out the tool boards will automatically deploy outboard to gain access of content.

One (1)
55-01-4155

COMPARTMENT LIGHTS

Two (2) vertically mounted LED strip lights shall be installed inside the compartment. The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat build up and each light shall be approximately 48" in length.

One (1)
55-06-1400

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

One (1)
90-02-3400

SLIDE OUT VERTICAL LADDER MOUNTINGS

The ladder shall slide into the left rear of the apparatus, through the left 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

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

One (1)
90-03-0225

LADDER SOURCE

New ground ladders shall be provided by the body builder.

One (1)
90-25-7850

HARD SUCTION MOUNTING

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

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)
90-25-7750

HARD SUCTION MOUNTING

One (1) hard suction hose compartment shall be provided above the body compartments, on the left side. The design shall allow the hose to be individually removed from the rear of the apparatus. The hard suction compartment shall be constructed of smooth material painted to match the body and shall be equipped with a hinged door with push to latch door catches.

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)
90-25-9115

SUCTION HOSE SOURCE

New suction hose shall be provided by the body builder.

One (1)

== Pumper/Tanker-Common Body Parts - 918.018 09/18/18 ==

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)
33-62-1600

FOLDING STEP RIGHT REAR

Three (3) 8" square folding steps of chrome plated die cast aluminum shall be provided. The steps shall comply to NFPA #1901 non-slip standards and shall be installed on the rear right side of the body.

One (1)
33-70-1200

HANDRAIL REAR STEP

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

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)
44-10-1400

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 provided with a gasket between door and body side, bolted in-place and removable for repair or replacement.

Compartment shall be provided with SCBA cylinder scuff protection. A brushed stainless steel door shall be installed.

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)
44-10-8000

One (1) storage compartment for floor dry shall be provided and located in the rear wheel well of the apparatus body. The storage compartment shall be constructed of aluminum, mounted on slides, to allowing the compartment to pull out for filling. The door assembly shall be provided with a gasket between the door and the body side, bolted in place and removable for repair or replacement. A brushed stainless steel door, with D-ring, shall be provided.

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)
44-10-1400

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 provided with a gasket between door and body side, bolted in-place and removable for repair or replacement.

Compartment shall be provided with SCBA cylinder scuff protection. A brushed stainless steel door shall be installed.

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)

== Pumper/Tanker-AC Electrical System - 918.018 09/18/18 ==

One (1)
60-90-1000

GREEN STAR IDLE REDUCTION TECHNOLOGY (IRT)

A Green Star idle reduction technology system shall be supplied with the apparatus that will significantly reduce the amount of diesel exhaust soot, NOx and CO2 emissions into the atmosphere. Diesel engines contain pollutants that negatively impact human health and the environment. Diesel engine exhaust contains particulate (black soot), hydrocarbons, carbon monoxide and nitrogen oxides.

The Green Star IRT system shall be supplied with the apparatus that will significantly reduce fuel consumption and the amount of diesel exhaust particulates (black soot), hydrocarbons, carbon monoxide and nitrogen oxides released into the atmosphere. IRT has been verified by the U.S. EPA to reduce emissions from diesel powered vehicles.

A Green Star IRT will reduce idle time, fuel consumption and release of toxic pollutants through use of an auxiliary power unit (APU) in conjunction with automatic chassis engine controls. An APU is U.S. EPA listed as a method to reduce emissions. The automatic chassis engine controls will shut down the chassis diesel engine during times not requiring the chassis diesel engine. When the chassis diesel engine is not required a timer will start. When the timer has nearly expired the APU will be engaged and the chassis diesel engine will be shut down.

The chassis is protected against low chassis battery voltage. If during the idle reduction the chassis battery voltage drops below a safe level, the automatic engine controls will restart the chassis engine.

unit to have no Air

One (1)
60-90-1189

GREEN STAR "INHIBIT" SWITCH

There shall be a momentary rocker switch with green indicator on the cab switch panel labeled "INHIBIT". When activated, the switch shall "INHIBIT" or prevent the automatic operation of the Green Star IRT system.

One (1)
60-90-2000

AUXILIARY POWER UNIT (APU)

A Kubota D1105-BG EPA and CARB tier 4 rated diesel generator engine with a power rating of 7.9 KW will be provided. The Kubota engine will drive a Mecc Alte NPE32-B/4 industrial duty 4 pole, 60Hz, 120/240VAC, brushless, digitally regulated generator. The Mecc Alte generator will have a continuous rating of 10.5KW. The engine and generator will run 1800RPM. This lower RPM leads to substantially longer life and less maintenance compared to other APU systems. Total standard 12VDC power output is 270AMPS. An APU on/off switch will be provided in the chassis cab to start and stop the APU on demand.

unit to have no Air

One (1)
60-20-1450

GENERATOR MOUNTING LOCATION

The generator shall be installed in the front section of the hosebed.

S One (1)
60-20-4100

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 low forward wall.

One (1)
60-20-7400

The instrument panel for the generator shall be installed next to the breaker panel.

Four (4)
60-25-1400

120V ELECTRIC RECEPTACLE -- STRAIGHT BLADE

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

One (1)
60-30-2300

The electric receptacle shall be located inside the left side exterior body compartment ahead of the rear wheels.

L1 up high

One (1)
60-30-2370

The electric receptacle shall be located inside the left side exterior body compartment behind the rear wheels.

L3 down low

One (1)
60-30-2400

The electric receptacle shall be located inside the right side exterior body compartment ahead of the rear wheels.

R1 up high

One (1)
60-30-2470

The electric receptacle shall be located inside the right side exterior body compartment behind the rear wheels.

R3 down low

S One (1)
64-03-5000

=== Vrtcl Lt Towers ===

S One (1)
64-03-5100

The apparatus shall be equipped with one (1) a pneumatically raised vertical light tower. The tower shall have an extended height of approximately 20 feet, with a total payload capacity of 70 pounds. The tower shall be designed to sustain the intended tip load with a 125 percent safety factor. The tower shall withstand a minimum 50 MPH wind when in a fully raised and unguided position.

The installation of the light tower shall meet applicable sections of the NFPA standards.

Light System

Four (4) **Pioneer Max Flood/Spot,225 Watts, White 120 VAC.**

Pneumatic Controls

The pneumatic controls to raise or lower the tower shall include an air regulator with integral filter, lubricator, and solenoid valves. The tower shall be able to be fully elevated in two (2) minutes or less. In the event of malfunction of the elevating system while the tower is in operation or being deployed, a method of limiting the rate of descent shall be provided to prevent injury to personnel or damage to the equipment.

The pneumatic operation of the tower shall be accomplished with air supplied from the chassis brake system. A pressure protection valve and auxiliary air tank(s) shall be provided in conformance to the NFPA and FVMSS brake standards.

One (1)
64-04-4010

MOUNTING – LIGHT TOWER CONTROLS

The controls for the light tower shall be mounted in the left front compartment.

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

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.

PPG FDG 71663 Red

One (1)
80-06-1100

APPARATUS COLOR

The apparatus shall be _PPG FDG 71663 Red___ in color.

One (1)
80-30-1100

INTERIOR COMPARTMENT FINISH

Six (6) apparatus side compartment interiors are to be painted with a spatter finish material. The compartments shall be cleaned with a grease remover, and then the surface sanded and prepared for painting. The compartment shall be provided with two (2) coats of white epoxy. The compartments are then coated with a splatter paint top coat.

gray with white spatter

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)
80-50-1700

SIMULATED GOLD LEAF LETTERING

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

A quantity of fifty (50), four (4) inch letters are to be placed on the cab and on the body as directed by fire department.

Wait until sold.

One (1)
80-71-1600

REFLECTIVE STRIPING

A 1" x 6" x 1" wide 3M brand Scotchlite reflective multi-stripe shall be affixed to the perimeter of the vehicle. There shall be a 1" gap between each of the stripes. Striping shall conform to applicable NFPA requirements. At least 50% of the perimeter length of each side and width of the rear, and at least 25% of the perimeter width of the front of the vehicle shall have reflective striping.

The striping shall be applied in a large "Z" pattern.

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

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)
80-79-1000

YELLOW SAFETY TAPE - STANDING & WALKING SURFACES

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

One (1)

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

One (1)
90-03-3300

ROOF LADDER

One (1) Duo Safety Model 775-A, 14 foot aluminum roof ladder with folding steel roof hooks on one end and steel spikes on the other end shall be provided on the apparatus. The ladder shall

meet or exceed all latest NFPA Standards.

One (1)
90-06-4600

EXTENSION LADDER

One (1) Duo-Safety Model 900-A, 24 foot two (2) section aluminum extension ladder shall be provided on the apparatus. The ladder shall meet or exceed all the latest NFPA standards.

One (1)
90-08-2600

FOLDING LADDER

One (1) Duo Safety Model 585-A, 10 foot folding aluminum ladder shall be provided on the apparatus. The ladder shall meet or exceed all the latest NFPA Standards.

One (1)
90-16-2600

PIKE POLE

One (1) 8' pike pole with round handle shall be provided. The pike pole shall be of fiberglass construction.

One (1)
90-16-2800

PIKE POLE

One (1) 10' pike pole with round handle shall be provided. The pike pole shall be of fiberglass construction.

Two (2)
90-25-3100

SUCTION HOSE

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

Two (2)
90-25-6100

HOSE COUPLINGS

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

PRODUCTION SPEC

Rosenbauer South Dakota

17735 Clean Cab Demo Custom Pumper SM 2

17735 Clean Cab Demo Custom Pumper SM 2
OK HF/DD
1/31/2019

Exp. Date: 01/20/2019
Quote No: 10020-0003
Job/Order No: 17735 OK HF/DD

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:	C0-30-1200	HLHD/LR 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

PART NO	S	DESCRIPTION	QTY	ID
		== Pumper/Tanker Bid Prep Forms - 918.018 09/18/18 ==	**1**	**RAS**
		ROSENBAUER APPARATUS SOLUTIONS - RAS - 18 September 2018	**1**	**RAS**
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		|-- 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		|-- Warranty, Apparatus, Body Warranty, 1 Year	1	RAS
01-19-0250		|-- Warranty, Bdy, Alum, 5 Years	1	RAS
01-19-2800		|-- Warranty, Subframe, Lifetime Galv	1	RAS
01-20-0250		|-- Warranty, Paint, PPG, 5 Years	1	RAS
01-17-0870		|-- Pump Warranty, Rosenbauer, 5 Year	1	RAS
01-17-1050		|-- Plmbg Warranty, Stnls Stl, 10 Years	1	RAS
01-18-0450		|-- Warranty, Water Tank, UPF	1	RAS
01-33-3100		|-- Mnls, Bdy Complete, 1 Set Printed With CD	1	RAS
01-33-3400		|-- Mnls, Bdy Complete, Electronic Internet Service	1	RAS
02-90-1900		Chassis Supl'd By Rosenbauer SD	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		|-- Siren, Elect, Whelen 295SLSA1	1	RAS
56-02-1600		|-- Spkr, F-S Dynamax, ES100C 100 Watt	1	RAS
56-02-1650		|-- Spkr Grille, Stnls Stl, "R"	1	RAS
56-03-1800		|-- Spkr Lctn, To Be Determined by Body Mfg	1	RAS
57-02-1250		|-- Lt Bar, Whelen, Ultra Freedom IV, #F4N7QLED, LED, 72"	1	RAS
57-10-0600		|-- Lightbar Cntrl, with Master Warning Switch	1	RAS
58-71-1820		|-- Wrn Lts, Whelen, Upper Rr (2) S-LED Rotary L31 P/N L31*F	1	RAS
57-20-8100		|-- Wrn Lt, Drvr, Whelen, L31 LED Rotator Red Color Lens, Ea	1	RAS
57-20-8101		|-- Wrn Lt, Offcr, Whelen, L31 LED Rotator Red Color Lens, Ea	1	RAS
58-74-5100		|-- Stanchions, Rr Wrn Lt, Cast Alum	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
58-03-6300		|-- Wrn Lts, Whelen, Uppr Wing, (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
58-03-7300		|-- 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
58-09-2000		|-- Wrn Lts, Whelen, Intrsct (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
58-26-2400		|-- Wrn Lts, Whelen, Low Mid Bdy (2) M2 LED, in Rub Rail Will only fit in EXT rub rail WITHOUT bezel	1	RAS
57-20-1000		|-- Wrn Lt, Drvr, Whelen, M2, Red LED, Color Lens, Ea	1	RAS
57-20-1001		|-- Wrn Lt, Offcr, Whelen, M2, Red LED, Color Lens, Ea	1	RAS
58-36-2400		|-- Wrn Lts, Whelen, Low Rr Side (2) M2 LED, in Rub Rail Will only fit in EXT rub rail WITHOUT bezel	1	RAS
57-20-1000		|-- Wrn Lt, Drvr, Whelen, M2, Red LED, Color Lens, Ea	1	RAS
57-20-1001		|-- Wrn Lt, Offcr, Whelen, M2, Red LED, Color Lens, Ea	1	RAS
58-81-2000		|-- Wrn Lts, Whelen, Low Rr (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
50-03-1000		Elecal, Base, Standard, W/O Load Mgmt	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
24-31-2110	S	|-- Rescue Mode Switch	1	RAS
		also this will be engaged with the park brake		
		RESCUE MODE		
		A momentary rocker switch shall be installed to auto deploy the rear compartment electric slide tray and the officers side clean bunker storage module when park brake is applied. The switch shall be conveniently located for ease of operation and labeled appropriately. This switch will need to be activated prior to allow the auto deploy feature to function.		
		SWITCH TO BE LABELED:		
		"RESCUE MODE"		
50-05-1510		|-- Electrical Jct Box, Weather Resistant	1	RAS
50-10-2000	S	|-- AUTO DEPLOY FEATURE	1	RAS
		AUTO DEPLOY FEATURE		
		The auto deploy feature on this truck will be controled with a momentary rocker switch on the cab console.		
		The momentary rocker switch activates the auto deploy for the rear compartment electric slide tray and the officers side clean bunker storage module when park brake is applied. The switch shall be conveniently located for ease of operation and labeled appropriately. This switch will need to be activated prior to allow the auto deploy feature to function.		
54-15-6060	S	|-- 3-Way PTO Cntrl Swtch in cab and pump panel	1	RAS
		PTO SWITCH		
		A **PTO** switch with indicator shall be installed on the cab dash and at the **pump panel** to control the **PTO**. The switches shall be wired to operate in a three-way configuration to allow the **PTO** to be controlled from either location regardless of switch position. The switches shall be labeled **"PTO".**		
50-12-1200		Swtch Panel, Cab Dash	1	RAS
50-41-3000		Air Horns, (2) Rcsd, One Ea Side Bumper, 24.5" Stuttertone, Chrome	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
50-43-2000		|-- Air Horn Cntrl, Driver, Horn Ring, Air/Elec	1	RAS
50-43-2200		|-- Air Horn Cntrl, Officer, Sgle Ft Swtch	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
52-08-1300		|-- HandLt, Survivor LED, Orange, w/ 12V Chrgr (#90509)	1	RAS
		mount drivers side crew area by outer seat base		
52-08-1302		|-- HandLt, Survivor LED, Yellow, w/ 12V Chrgr (#90519)	1	RAS
		mount officers side crew area by outer seat base		
52-08-2400		|-- HandLt Install Lctn, Bdy, Define	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		|-- Tail/Brake Lts, Whelen, LED, M6 (Pair)	1	RAS
53-04-2750		|-- Turn Signals, Whelen, LED w/ Arrow, M6 (Pair)	1	RAS
53-06-3550		|-- Backup Lts, Whelen, LED, M6 (Pair)	1	RAS
53-07-1210		|-- Tail Lt Bezel, 4 Lts, Whln M6 (Pair), ABS Chrome	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
54-03-1200		|-- Ground Lts, Pump Panel, LED, Pair	1	RAS
54-03-1600		|-- Ground Lts, Rr Step, LED, Pair	1	RAS
54-04-1999		|-- 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		|-- Deck Lts, Unity, 1-AG Spot 1-AG Flood	1	RAS
55-11-1100		Dr Open/Hazard Wrn Lt, w/Chassis	1	RAS
		== Pumper/Tanker-Chassis Modifications - 918.018 09/18/18 ==	**1**	**RAS**
10-02-1100		|-- Label, Data, Fluid Levels	1	RAS
10-02-1200		|-- Label, Data, Height x Length, Weight	1	RAS
10-02-1300		|-- Label, Data, "No Ride" Rr Step	1	RAS
10-02-2100		|-- Label, Indicating Number of Seats	1	RAS
10-02-2500		|-- Label, "Caution: Do Not Wear Helmet While Seated"	1	RAS
10-03-6000		|-- Tow Plates (2), Rr Frame Rail, Under Step	1	RAS
80-43-2400		|-- Painting, Tow Plates, Blk	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
10-04-0630		|-- Front Bumpers,Warrior, Max Force 12"H, Max Force Wings	1	RAS
10-05-4618		|-- Frnt Bmpr, Warrior, Max Force 12"H, T/P Apron, M/F Wings, 18" Extnsn	1	RAS
10-06-1110		|-- Whl Trim, S/S Hub/Lug Cvrs, Front/Rr, Sngl Axle	1	RAS
10-06-1310		|-- Whl Cvrs, S/S Liner/Cvrs, Sngl Axle	1	RAS
10-06-1600		|-- Tire Pressure Indicator, Sngl Axle, Commercial, p/n RWTG1235	1	RAS
10-07-0100		|-- Exhaust Supplied With Chassis	1	RAS
10-08-2100		|-- Mud Flaps, Rr Whls, Blk, w/ Bdy	1	RAS
10-11-0300		|-- Cab Trim, Door, Alum T/P Kickplates, 4 Dr	1	RAS
		== Midship Pumper/Tanker Pump & Plumbing - 918.018 09/18/18 ==	**1**	**RAS**

PART NO	S	DESCRIPTION	QTY	ID
20-27-1600		|-- Pump, Rosenbauer, N 1500 GPM, Mid-ship PTO	1	RAS
20-27-0190		|-- Rosenbauer Pump Body, Stainless Steel, N1250/1500	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
20-28-3400		|-- Pump Shift, Rosenbauer, PTO, Pump and Roll	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
22-03-1600		|-- 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
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
24-62-2300		|-- Vlv Mfger, ELK,(3"), Manual, Swing Type, Adjacent Control	1	RAS
22-55-5080		|-- Intk Vlv Cntrl, ELK, Cable, 1/4 Turn T-style, IC	1	RAS
23-02-1300		|-- Tank Fill/Cooling Line, Water Tank, 2"	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
24-62-2200		|-- Vlv Mfger, ELK, (2"), Manual, Swing Type, Adjacent Control	1	RAS
22-55-5080		|-- Intk Vlv Cntrl, ELK, Cable, 1/4 Turn T-style, IC	1	RAS
20-30-3200		|-- Pump Instln, Midship PTO, 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
24-62-2250		|-- Vlv Mfger, ELK (2-1/2"), Manual, Swing Type, Adjacent Control	1	RAS
22-55-5020		|-- Intk Vlv Cntrl, ELK, Mnl Swing Type-Adjacent	1	RAS
23-06-2200		|-- Crosslay Dschgs, (2) 1-1/2", Over Pump Panel, NST 200 ft x1-3/4-in ea w/divider use foam capable manifold for both crosslays. for future foam options.	1	RAS
21-01-2502		|-- Drain/Bleeder, IC Lift-Up, Mnl 1/4 Turn - Spec Only	2	RAS
24-61-2200		|-- Vlv Mfger, ELK, (2"), Manual	2	RAS
24-56-3100		|-- Dschg Vlv Cntrl, Pull Rod, Cable - IC w/Gauge	2	RAS
27-02-1500		|-- Gauge, Dschg, IC, 2-1/2" 400#, WF	2	RAS

PART NO	S	DESCRIPTION	QTY	ID
23-08-3300		|-- Crosslay Cvr, Alum T/P, Sngl, W/Vinyl End Flaps (Non NFPA Walking Surface)	1	RAS
23-08-4150		|-- Crosslay Rollers, "U" Shaped, Both Sides	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	2	RAS
21-01-2502		|-- Drain/Bleeder, IC Lift-Up, Mnl 1/4 Turn - Spec Only	2	RAS
24-02-1200		|-- Elbow, 2-1/2"F x 2-1/2" NST M, Chrome	2	RAS
24-03-1400		|-- Cap, 2-1/2", NST Chrome, Rocker Lug, w/Chain	2	RAS
24-61-2250		|-- Vlv Mfger, ELK, (2-1/2"), Manual	2	RAS
24-56-3100		|-- Dschg Vlv Cntrl, Pull Rod, Cable - IC w/Gauge	2	RAS
27-02-1500		|-- Gauge, Dschg, IC, 2-1/2" 400#, WF	2	RAS
23-10-4100		Dschg, 2-1/2", Right 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
24-61-2250		|-- Vlv Mfger, ELK, (2-1/2"), Manual	1	RAS
24-56-3100		|-- Dschg Vlv Cntrl, Pull Rod, Cable - IC w/Gauge	1	RAS
27-02-1500		|-- 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		|-- Drain/Bleeder, IC Lift-Up, Mnl 1/4 Turn - Spec Only	1	RAS
24-02-2500		|-- Elbow, LW Alum, 5" Storz x 3"F	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
24-03-2200		|-- Cap, LW Alum, 5" Storz, w/Cable	1	RAS
24-61-2300		|-- Vlv Mfger, ELK, (3"), Manual	1	RAS
24-56-3004		|-- Dschg Vlv Cntrl, Pull Rod, Cable, ELK Slow Cls	1	RAS
27-02-1500		|-- Gauge, Dschg, IC, 2-1/2" 400#, WF	1	RAS
23-11-1800	S	Catwalk, Left Side , PAINTED	1	RAS
		LEFT SIDE CAT WALK		
		One (1) **hard suction hose** compartment shall be fabricated and installed on top of the driver's side catwalk. The compartment shall be constructed of **painted** smooth aluminum .		
23-11-1900	S	Catwalk, Right Side, PAINTED	1	RAS
		RIGHT SIDE CAT WALK HOSE BED		
		One (1) **hard suction hose** compartment shall be fabricated and installed on top of the officers side catwalk. The compartment shall be constructed of **painted** smooth aluminum .		
23-12-2200	S	Dschg, 2-1/2", Right Front Hosebed, NST	1	RAS
		Front		
		RIGHT SIDE FRONT OF HOSEBED -- 2-1/2" DISCHARGE		
		One (1) 2-1/2" discharge shall be to the right side **front** of hosebed area and 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. An engraved nameplate label shall be provided adjacent the control handle.		
21-01-2502		|-- Drain/Bleeder, IC Lift-Up, Mnl 1/4 Turn - Spec Only	1	RAS
24-61-2250		|-- Vlv Mfger, ELK, (2-1/2"), Manual	1	RAS
24-56-3100		|-- Dschg Vlv Cntrl, Pull Rod, Cable - IC w/Gauge	1	RAS
27-02-1500		|-- Gauge, Dschg, IC, 2-1/2" 400#, WF	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
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
24-61-2300		|-- Vlv Mfger, ELK, (3"), Manual	1	RAS
24-56-3004		|-- Dschg Vlv Cntrl, Pull Rod, Cable, ELK Slow Cls	1	RAS
27-02-1500		|-- Gauge, Dschg, IC, 2-1/2" 400#, WF	1	RAS
24-15-1700		|-- Mntr, ELK, Cobra EXM, 1250GPM, Elec, No Nzls	1	RAS
24-15-1780		|-- EXM CAN Stow Module	1	RAS
24-15-1792	S	|-- EXM Panel Mount Controls WITH REMOTE THE DECK GUN CONTROLS SHALL BE MOUNTED ON THE PUMP PANEL WITH REMOTE **EXM PANEL MOUNT CONTROLS** The deck gun controls shall be mounted on the pump panel.	1	RAS
24-18-8100	S	|-- Mntr, Tele Ext, ELK, Elec, 3", Vic x 3 Flange #8598 **MONITOR EXTENDER** One (1) Elkhart Extender model #8598, part number 08598001, monitor riser shall be provided. The 18" Extender shall be compatible with the Elkhart Vulcan Series monitor's and the range of other compact monitors. The unit shall be designed for use with monitor and nozzle flow at 1250 GPM maximum with 100 PSI nozzle pressure with a maximum inlet pressure rating at 200 PSI. The unit shall have a push button panel mounted control. The Extender package shall include a variety of wire harnesses in lengths from 5 to 40 feet. The installation shall have an in-cab warning light that shall alert unit is not retracted. The pressure switch shall not allow the Extender to move when internal pressure exceeds 10 PSI. The unit shall have a 3" Victaulic base by a 3" Flange.	1	RAS
		== Pumper/Tanker-Side Mount Pump Compt - 918.018 09/18/18 ==	**1**	**RAS**

PART NO	S	DESCRIPTION	QTY	ID
26-02-2300		Pump Enc, Side Mt, Extrd Alum, 50-59"W, Crslys	1	RAS
26-10-1100	S	Pump Enc Cmpt, Frt Pmp Pnl, COMPARTMENTS -- AHEAD OF PUMP ENCLOSURE	1	RAS
		Drivers side compartment will house 1 set of clean bunker gear with bottle. Officers side compartment dimensions shall be approximately 33" front to rear width, and 27" depth, and 75" high on the officers side with a lapped door. This compartment will house 3 sets of clean bunker gear with bottles. there shall be a switch in the cab and at the officers side pump panel for auto deploy.		
		COMPARTMENTS -- AHEAD OF PUMP ENCLOSURE		
		The area to the front of the pump enclosure shall be an equipment compartment. The compartment shall be located between the running board and shall extend right to left across the chassis frame rails.		
		The compartment shall be integral with pump enclosure and constructed of same material as pump enclosure. The compartment shall be equipped with a lap door storage module on the officers side and a pullout storage module on the drivers side with an appropriate latch. The compartments shall be provided with floor drains, vent, and compartment lights.		
		The compartment dimensions shall be approximately 14.5 WIDE , and 27” depth, and 33" High on the drivers side, with a Lap door compartment with line x finish. This compartment will house 1 set of clean bunker gear with bottle.		
		The compartment on the officers side shall be approximately 33" front to rear width, and 27" depth, and 75" high on the officers side with line x finish.		
		An electric roll-out equipment tray shall be installed in the compartment. The tray with telescoping slides and cam follower bearings shall be rated to a maximum load of 500 lbs. The tray shall have an electric powered motor.		
		The tray shall be formed of .188" smooth aluminum plate, fabricated with a storage module to house 3 sets of clean turn out gear with airpacks and a Ric Kit.		
		Inside the cab there is a rocker switch labeled "RESCUE MODE". When the switch is turned on to "RESCUE MODE",		

PART NO	S	DESCRIPTION	QTY	ID
		and when the park brake is applied this will auto deploy the officers side clean bunker storage module.		
		There shall be a Red E-Stop button on the side of the apparatus. This E-Stop will disable all electric power to the side storage module.		
55-02-1200		|-- Cmpt Lt, Ceiling, LED, (1) Ea Cmpt	2	RAS
55-06-1100		|-- Cmpt Lt, Dr Swtch, Auto, Ea	2	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
26-31-3200		Pump Side Access Door, Upper RH, Alum T/P	1	RAS
26-35-5100		Pump Panel, Line X, LH/RH, SM	1	RAS
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

PART NO	S	DESCRIPTION	QTY	ID
27-01-4100		Gauge, Test Taps	1	RAS
27-35-1100		Water Tank Gauge, FRC, TankVision Pro 300, Pump Panel WLA300-A00	1	RAS
54-15-6060	S	3-Way Cntrl Swtch, PUMP PANEL	1	RAS
		PTO SWITCH		
		A **PTO** switch with indicator shall be installed on the cab dash and at the **pump panel** to control the **PTO**. The switches shall be wired to operate in a three-way configuration to allow the **PTO** to be controlled from either location regardless of switch position. The switches shall be labeled **"PTO".**		
		== HLHD/LR Single Axle Pumper/Tanker - 918.018 09/18/18 ==	**1**	**RAS**
25-26-1400		|-- Water Tank, 750 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
29-10-1000		Hosebed, Grating, Extrd Alum, <180" Long	1	RAS
29-10-5100		|-- 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	1	RAS
29-20-5600		|-- Vinyl Cover, Color, RED	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
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
30-01-2250		|-- Electrolysis Corrosion Cntrl	1	RAS
30-02-2200		|-- Smooth Alum Compt Floors	1	RAS
30-10-1700		|-- Sub Frame, Extreme Duty, Galvanized	1	RAS
31-01-1100		|-- Bdy, Frmd Alum, Pmpr/Tnkr , Up to 144"	1	RAS
44-06-2200		|-- Whl Well Panel, Alum Pntd, Sngl Axle - Alum	1	RAS
44-06-4100		|-- Fenderette, Polished Aluminum	1	RAS
31-01-2115		102" OAW, 13-26" Half Dpth/26" Lwr Dpth, SA HL/LR	1	RAS
29-00-1300		|-- Hosebed, Pmpr, <180" L, 74" Wide	1	RAS
32-03-0063		|-- Cmpt Height, 63" High Left	1	RAS
32-03-1063		|-- Cmpt Height, 63" High Right	1	RAS
32-04-1210		Roll Up Drs, HL/LR	1	RAS
30-02-1150		|-- Roll-Up Drs - ROM Mfg	6	RAS
30-02-1210		|-- Dr Locks, Roll-Up, Ea	6	RAS
32-05-1120	S	|-- Ahd Rr Whls - Full Ht Comp't - Roll Up Door - Painted	1	RAS
		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 **painted** roll up door.		
		The compartment shall be equipped with the following:		
44-40-1100		|-- Vents, Compts, Louvers, Includes Filters (Ea)	1	RAS
45-01-1050		|-- Shelving Tracks, (2) Unistrut, Alum	1	RAS
45-02-1200		|-- Shelf, Adjust, Alum 1/8"	1	RAS
45-06-1100	S	|-- Slide Tray, 500#, Alum 3/16", FULL EXTENSION	1	RAS
		500# ROLLOUT TRAY		

PART NO	S	DESCRIPTION	QTY	ID
		One (1) roll-out equipment tray shall be installed in the compartment. The tray with extruded slides and stainless steel bearings shall be rated to a maximum load of 500 lbs. There shall be a lock to prevent movement, when the tray is in the closed position.		
		The tray shall be formed of .188" smooth aluminum plate, fabricated with two (2) inch sides. Reflective material measuring 1" x 6" shall be installed on each front corner both on the face and side of tray for firefighter safety.		
55-01-1250		|-- Cmpt Lt, Wall, ROM,V3 LED Track Lt, (2) Ea Cmpt	1	RAS
55-06-1400		|-- Cmpt Lt, Dr Swtch, Magnetic, Ea	1	RAS
32-05-1355	S	|-- Upr Hgh Sde - Sgle Comp't - Roll Up Dr - Painted	1	RAS
		LEFT OVERWHEEL COMPARTMENT		
		There shall be one (1) compartment above the rear wheels. The compartment shall be equipped with a single **painted** roll up door.		
		The compartment shall be equipped with the following:		
44-40-1100		|-- Vents, Compts, Louvers, Includes Filters (Ea)	1	RAS
45-01-1050		|-- Shelving Tracks, (2) Unistrut, Alum	1	RAS
45-02-1200		|-- Shelf, Adjust, Alum 1/8"	1	RAS
55-01-1250		|-- Cmpt Lt, Wall, ROM,V3 LED Track Lt, (2) Ea Cmpt	1	RAS
55-06-1400		|-- Cmpt Lt, Dr Swtch, Magnetic, Ea	1	RAS
32-05-1720	S	|-- Bhnd Rr Whls - Full Ht Comp't - Roll Up Door - Painted	1	RAS
		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 **painted** roll up door.		
		The compartment shall be equipped with the following:		
44-40-1100		|-- Vents, Compts, Louvers, Includes Filters (Ea)	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
45-01-1050		|-- Shelving Tracks, (2) Unistrut, Alum	1	RAS
55-01-1250		|-- Cmpt Lt, Wall, ROM,V3 LED Track Lt, (2) Ea Cmpt	1	RAS
55-06-1400		|-- Cmpt Lt, Dr Swtch, Magnetic, Ea	1	RAS
32-06-1030	S	|-- Ahd Rr Whls - Full Ht Comp't - Roll Up Door - Painted	1	RAS
		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 **painted** roll up door.		
		The compartment shall be equipped with the following:		
44-40-1100		|-- Vents, Compts, Louvers, Includes Filters (Ea)	1	RAS
45-01-1050		|-- Shelving Tracks, (2) Unistrut, Alum	1	RAS
45-02-1200		|-- Shelf, Adjust, Alum 1/8"	1	RAS
55-01-1250		|-- Cmpt Lt, Wall, ROM,V3 LED Track Lt, (2) Ea Cmpt	1	RAS
55-06-1400		|-- Cmpt Lt, Dr Swtch, Magnetic, Ea	1	RAS
45-00-5600	S	|-- Upr Hgh Sde - Sngle Cmp't - Roll Up Dr - Painted	1	RAS
		LEFT OVERWHEEL COMPARTMENT		
		There shall be one (1) comaprtment above the rear wheels. The compartment shall be equipped with a single **painted** roll up door.		
		The compartment shall be equipped with the following:		
44-40-1100		|-- Vents, Compts, Louvers, Includes Filters (Ea)	1	RAS
45-01-1050		|-- Shelving Tracks, (2) Unistrut, Alum	1	RAS
45-02-1200		|-- Shelf, Adjust, Alum 1/8"	1	RAS
46-17-0019	S	|-- Bhd Rr Whls - Full Ht Comp't - Roll Up Dr - Painted	1	RAS
		REAR COMPARTMENT		
		There shall be one (1) full height compartment module located behind the rear wheels. The compartment module shall be equipped with a full height		

PART NO	S	DESCRIPTION	QTY	ID
		painted roll up door.		
		The compartment shall be equipped with the following:		
33-60-1100		Rr Bdy, Flat Back	1	RAS
33-61-1300		|-- Rr Step, Pmpr-Tnkr Bdy, Bolt-On, 12"	1	RAS
46-18-0040	S	|-- Rr Cntr Comp't - 60.5" Full Ht Double Lap Door Non Trans	1	RAS
		REAR CENTER COMPARTMENT		
		There shall be one (1) full height compartment located at the rear of the apparatus. The compartment shall be **60.5" high x 38" deep x 48" wide** and be equipped with a **double lap** door. The compartment shall be partitioned off from the side compartments.		
		The compartment shall **have full height lap doors.**		
		Inside the cab there is a rocker switch labeled "RESCUE MODE". When the switch is turned on to "RESCUE MODE", and when the park brake is applied this will auto deploy the rear storage module.		
		There shall be a Red E-Stop button on the rear of the apparatus. This E-Stop will disable all electric power to the rear storage module.		
44-40-1020		|-- Vents, Compts, Louvers (Ea)	1	RAS
45-01-1050		|-- Shelving Tracks, (2) Unistrut, Alum	1	RAS
45-07-5200	S	|-- 1000# ELECTRIC ROLLOUT TRAY	1	RAS
		Two (2) vertical tool boards will be mounted on the slide. As the slide comes out the tool boards will automatically deploy outboard to gain access of content.		
		1000# ELECTRIC ROLLOUT TRAY		
		One (1) **ELECTRIC ROLLOUT** equipment tray(s) shall be installed **in the rear compartment.** The tray assembly shall have a **stainless steel** slide frame with sealed roller bearings rated to 1,000 pounds. A tray constructed of .190" smooth aluminum plate with four 3" sides shall be mounted to the slide frame. The slide frame shall extend **100%** out of **the rear** compartment allowing the tray to be easily accessible from outside the compartment. The slide shall have a 3-3/8" deck height.		

PART NO	S	DESCRIPTION	QTY	ID
		46" WIDE		
		33" DEEP		
55-01-4155		|-- Cmpt LED Strip Lt, (2) Ea Cmpt (approx 48")	1	RAS
55-06-1400		|-- Cmpt Lt, Dr Swtch, Magnetic, Ea	1	RAS
90-02-3400		Ladder Strge, Vrtcl Slide In, Left Rr Bdy	1	RAS
90-02-2920		|-- Compt Door, Smooth, With Chevron	1	RAS
90-02-5310		Ladder Mtg, Fldg Attic, Internal	1	RAS
90-03-0225		Ladders, Ground, Provd'd By Bdy Bldr, SD	1	RAS
90-25-7850		Suction Hose Compt, Abv Comp'ts, Right Side Pntd Smooth (Ea)	1	RAS
90-02-2920		|-- Compt Door, Smooth, With Chevron	1	RAS
90-25-7750		Suction Hose Compt, Abv Comp'ts, Left Side Pntd Smooth (Ea)	1	RAS
90-02-2920		|-- Compt Door, Smooth, With Chevron	1	RAS
90-25-9115		Suction Hose Provd'd By, Bdy Bldr, SD	1	RAS
		== Pumper/Tanker-Common Body Parts - 918.018 09/18/18 ==	**1**	**RAS**
44-01-1450		|-- Bdy Trim, Frnt Cmpt, Ht of Side Cmpts, Alum T/P	1	RAS
		Rr BODY DESIGN - PUMPER/TANKER	**1**	**RAS**
44-01-4000		|-- Bdy Trim, Entire Rr Bdy, Smooth for Chevron Stripe	1	RAS
33-62-1600		|-- Steps, Fldg, Rr Right Hand (3)	1	RAS
33-70-1200		|-- Handrails, Rr Step, Vert, 30", Pair	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
33-70-2100		|-- Handrails, Pmpr, Below Hosebed, Horz, 48"	1	RAS
44-02-1100		|-- Rub Rails, Lwr Bdy, Extrd Alum	1	RAS
44-02-2000		|-- Rub Rails, Spacers, Nylon	1	RAS
44-11-5100		Whl Well Prvsns, Ahd of Whls Left Side	1	RAS
44-10-1400		|-- Whl Well Cmpt, Sngl SCBA Tube, Brshd S/S Dr	1	RAS
44-10-6000		|-- Whl Well Compt, SCBA Compt Straps	1	RAS
44-11-5300		Whl Well Prvsns, Bhnd Whls Left Side	1	RAS
44-07-1200		|-- Fuel Fill Cap, LH Whl Well Panel-Open	1	RAS
44-11-5500		Whl Well Prvsns, Ahd of Whls Right Side	1	RAS
44-10-8000		|-- Whl Well Cmpt, Floor Dry, Brshd S/S Dr	1	RAS
44-11-5700		Whl Well Prvsns, Bhnd Whls Right Side	1	RAS
44-10-1400		|-- Whl Well Cmpt, Sngl SCBA Tube, Brshd S/S Dr	1	RAS
44-10-6000		|-- Whl Well Compt, SCBA Compt Straps	1	RAS
		== Pumper/Tanker-AC Electrical System - 918.018 09/18/18 ==	**1**	**RAS**
60-90-1000		Green Star Idle Reduction Technology (IRT) unit to have no Air	1	RAS
60-90-1189		|-- === No Green Star Inhibit Switch ===	1	RAS
60-90-2000		|-- Auxiliary Diesel Power Unit (APU) 7.9 KW Kubota D1105-BG unit to have no Air	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
60-20-1450		|-- Gnrtr Mtg, Front of Hosebed	1	RAS
60-20-4100	S	|-- Circuit Breaker Box, 6 to 8KW, 1 PH	1	RAS
		CIRCUIT BREAKER BOX		
		One (1) circuit breaker box for single phase voltage equipment shall be provided capable of holding four (4) breakers.		
60-20-5100		|-- Gnrtr Breaker Lctn, Side Compt	1	RAS
		L1 low forward wall.		
60-20-7400		|-- Gnrtr Instrmnt Panel Lctn, Breaker Panel	1	RAS
60-25-1400		|-- Rcptcl, 120V, 20 Amp, Strght Bld, Duplex	4	RAS
60-30-2300		|-- Rcptcl Lctn, Left Side, Ahd Rr Whls Cmpt, Ea	1	RAS
		L1 up high		
60-30-2370		|-- Rcptcl Lctn, Left Side, Bhnd Rr Whls Cmpt, Ea	1	RAS
		L3 down low		
60-30-2400		|-- Rcptcl Lctn, Right Side, Ahd Rr Whls Cmpt, Ea	1	RAS
		R1 up high		
60-30-2470		|-- Rcptcl Lctn, Right Side, Bhnd Rr Whls Cmpt, Ea	1	RAS
		R3 down low		
64-03-5000	S	=== Vrtcl Lt Towers ===	1	RAS
64-03-5100	S	|-- Lt Tower, 20' Vrtcl (4)-Pioneer Max Flood/Spot,225 Watts, White 120 VAC	1	RAS
		The apparatus shall be equipped with one (1) a pneumatically raised vertical light tower. The tower shall have an extended height of approximately 20 feet, with a total payload capacity of 70 pounds. The tower shall be designed to sustain the intended tip load with a 125 percent safety factor. The tower shall		

PART NO	S	DESCRIPTION	QTY	ID
		withstand a minimum 50 MPH wind when in a fully raised and unguided position. The installation of the light tower shall meet applicable sections of the NFPA standards. Light System Four (4) **Pioneer Max Flood/Spot,225 Watts, White 120 VAC.** Pneumatic Controls The pneumatic controls to raise or lower the tower shall include an air regulator with integral filter, lubricator, and solenoid valves. The tower shall be able to be fully elevated in two (2) minutes or less. In the event of malfunction of the elevating system while the tower is in operation or being deployed, a method of limiting the rate of descent shall be provided to prevent injury to personnel or damage to the equipment. The pneumatic operation of the tower shall be accomplished with air supplied from the chassis brake system. A pressure protection valve and auxiliary air tank(s) shall be provided in conformance to the NFPA and FVMSS brake standards.		
64-04-4010		|-- Controls, Mtg, Light Tower, Left Front Compt	1	RAS
		== Pumper/Tanker-Equipment Systems - 918.018 09/18/18 ==	**1**	**RAS**
		== Pumper/Tanker - Single Axle - Pnt/Ltr/St - 918.018 09/18/18 ==	**1**	**RAS**
80-05-1200		Bdy Paint, Sngl Axle, Pmpr/Tnkr - Sngl Color PPG FDG 71663 Red	1	RAS
80-06-1100		|-- Apparatus Color The apparatus shall be _PPG FDG 71663 Red___ in color.	1	RAS
80-30-1100		Compt Finish, Spatter Coat, Up to 6 Compts gray with white spatter	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
80-40-1400		Paint, Chs Whls, Sngl Axle (Outer Only)	1	RAS
80-42-1500		Bdy Paint, Touch Up, 2 oz. Bttl, One Color	1	RAS
80-50-1700		Lettering, 4" Mylar Gold Leaf, 50 Letters Wait until sold.	1	RAS
80-71-1600		Stripe, Triple Reflective, 1" x 6" x 1" Large "Z" Design	1	RAS
80-75-1600		|-- Reflective Stripe Material, White	1	RAS
80-72-1108		Stripe, Reflective, Oralite V98, Chevron Pattern Entire Rr Red/Yellow	1	RAS
80-79-1000		NFPA Standing / Walking Surfaces Yellow Safety Tape (NFPA 15.7.1.6)	1	RAS
		== Pumper/Tanker - Loose Equipment - 918.018 09/18/18 ==	**1**	**RAS**
90-03-3300		|-- Ladder, Roof, Duo-Safety, 14' Alum 775-A	1	RAS
90-06-4600		|-- Ladder, Ext, Duo-Safety, 24' Alum, 2 Sect 900-A	1	RAS
90-08-2600		|-- Ladder, Attic, Duo-Safety, 10' Alum, Fold 585-A	1	RAS
90-16-2600		|-- Pike Pole, 8' Fbgls, Round Hndl	1	RAS
90-16-2800		|-- Pike Pole, 10' Fbgls, Round Hndl	1	RAS

PART NO	S	DESCRIPTION	QTY	ID
90-25-3100		Suction Hose, Flex, PVC, 6"x10'	2	RAS
90-25-6100		|-- Suction Hose Cplgs, Alum, LH FM x RLM	2	RAS