

# Huerfano County Fire Protection District

Information Request Form (Factory Required)

## INFORMATION REQUEST FORM



*Please allow a minimum of 2 weeks of processing time for bids and 3 weeks for proposals. Trucks with numerous special options may require additional processing time. If expedited processing is required, please call ahead to make sure accommodations can be made before submitting files.*

REQUEST TYPE	PROPOSAL	<input type="checkbox"/>	REQUESTED RETURN DATE	
	BID	<input checked="" type="checkbox"/>	BID DATE	
	DRAWING ONLY	<input type="checkbox"/>		
	CONSORTIUM	<input type="checkbox"/>		
DEPARTMENT NAME	Huerfano			
STREET ADDRESS	310 Main St			
PO BOX				
CITY/STATE/ZIP	Walsenburg, CO 81089			
PHONE	719-738-1877			
DEALERSHIP	Ikon Fire			
SALES REP	Chris Shannon			

### INFORMATION NEEDED

Body Price	Amp Report <i>-Must include chassis specs</i>	ISO Certificate <i>(Please download from dealer web site)</i>
Drawing	10% Bid Bond (Mail & E-Mail)	Cert of Insurance PDF
Drawing Update / W&B Update <i>-Must Include Marked Up Drawing</i>	10% Bid Bond PDF <b>E-Mail Only</b>	Company History can be selected or cut/pasted from 01-08-0150
Weight & Balance	5% Bid Bond (Mail & E-Mail)	Reference Lists administered by Dealerships
Chassis Price	5% Bid Bond PDF <b>E-Mail Only</b>	Legals <i>-Please provided specific list of required items</i>
Match Previous Build <i>-Must Include Job Number/Name</i>	Please note job number here	

PENALTY CLAUSE?	<input type="checkbox"/> YES	<input type="checkbox"/> NO	AMOUNT	
PENALTY CLAUSE VERBIAGE				





Ikon Fire

# Huerfano County Fire Protection District

CAB SEATING:

CHROME PACKAGE: (including front bumper)

MIRRORS:

OTHER ACCESSORIES NEEDED:

OPTIONS PRICES NEEDED:

Date Price is Needed by: (office use Only) \_\_\_\_\_

**\*MINIMUM REQUIREMENTS NEEDED TO COMPLETE A SALES DRAWING**

Fire Department Name

# Huerfano County Fire Protection District

## BID SPECIFICATIONS

# Huerfano County Fire Protection District

## FOR

# ROSENBAUER CUSTOM PUMPER

### MAXIMUM OVERALL HEIGHT

#### MAX HEIGHT

The maximum height of the apparatus shall not exceed:  
Overall Length Restriction, NONE

#### OVERALL LENGTH

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

#### OVERALL WIDTH

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

#### WHEELBASE

A wheelbase restriction has not been specified for this apparatus.  
NFPA Equipment Allowances

NFPA Pumper Equipment Allowance 2500#

#### NFPA PUMPER EQUIPMENT ALLOWANCE

In compliance with the current NFPA 1901 guidelines, the apparatus shall be engineered to provide an allow of 2500 pounds of fire department provided loose equipment.  
Rosenbauer Dealer Order Form (Factory Required)



## ROSENBAUER DEALER ORDER FORM

Date: 8/9/23

Dealer: IKON Fire

Salesman: Chris Shannon

# Huerfano County Fire Protection District

Contact: Chris Shannon

(Rosenbauer Rewards Info)

All of the following information must be included in your order before the order is sent to the factory.

**DEALER RESPONSIBILITY:**

x	Contract Signed		Chassis Prepay?
x	Send In Contract Package Via Email <a href="mailto:lyonsorder@rosenbaueramerica.com">lyonsorder@rosenbaueramerica.com</a> <a href="mailto:wyoingorder@rosenbaueramerica.com">wyoingorder@rosenbaueramerica.com</a>		Chassis Price Protection If So, Until When _____
	Performance Bond Required: If Yes, Complete Bid Results Required		<b>Aerial - US or European</b> Changes must be ID'd at time of order
	Penalty Clause Applicable Was Penalty Clause Part of Bid <u>    </u> NO <u>    </u> YES		<b>Smart Cab</b> Changes must be ID'd at time of order
	Grant Truck	x	<b>Rosenbauer Pump</b> Changes must be ID'd at time of order
x	Chassis Provided By: Rosenbauer MN		<b>Greenstar</b> Changes must be ID'd at time of order
	Has Chassis Been Ordered? (If Ordered by Department or Dealer)		<b>EZ Foam</b> Changes must be ID'd at time of order
x	Submit Chassis Specs		<b>EZ Load</b> Changes must be ID'd at time of order

Paint Numbers and Break Lines Included? TBD

Chassis Wheelbase: 195

Chassis Top Speed: 68

**CUSTOMER INFORMATION:**

Name: Huerfano County Fire Protection District Address: 310 Main Street

City: Walsenburg, CO 81089 Phone: 719-738-1877

Chief: Sam Morningstar Fax:

**BILLING ADDRESS:**

Name: Huerfano County Fire Protection District Address: 310 Main Street

City: Walsenburg, CO 81089 Phone: 719-738-1877

Contact: Sam Morningstar Fax:

Email: smorningstar.huerfanofire@gmail.com

**OFFICE ONLY:**

<b>Precon Held</b>	<b>Submit Production Specs</b>
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# Huerfano County Fire Protection District

	<b>Answer Any Clarifications From PC</b>		
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You will receive confirmation of the order within 7 days, call the factory if you don't receive one.  
Contract Change Notice

## **CONTRACT CHANGE NOTICE**

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

The Company shall not be responsible nor deemed to be in default on account of delays in performance due to causes which are beyond the Company's control which make the Company's performance impracticable, including but not limited to civil wars, insurrections, strikes, riots, fires, storms, floods, other acts of nature, explosions, earthquakes, accidents, any act of government, delays in transportation, inability to obtain necessary labor supplies or manufacturing facilities, allocation regulations or orders affecting materials, equipment, facilities or completed products, failure to obtain any required license or certificates, acts of God or the public enemy or terrorism, failure of transportation, pandemics, epidemics, quarantine restrictions, failure of vendors (due to causes similar to those within the scope of this clause) to perform their contracts or labor troubles causing cessation, slowdown, or interruption of work.

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

Financial Stability Response

## **FINANCIAL STABILITY SPECIFICATIONS**

With high-profile instances of fire apparatus manufacturers encountering financial difficulties, it is imperative that fire departments be diligent in evaluating the financial position of the companies they solicit to build on their emergency response vehicles. A contract entered into with a company on shaky ground is a dangerous

# Huerfano County Fire Protection District

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.

# Huerfano County Fire Protection District

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](http://www.dnb.com). Dun and Bradstreet is nationally recognized, independent financial analysis company.  
Electronic Stability Control

## **ELECTRONIC STABILITY CONTROL**

Electronic stability control shall be supplied on the chassis.  
Delivery (751 to 1000 miles)

## **DELIVERY**

Final delivery of the completed apparatus shall be made F.O.B. Fire Department Headquarters.  
Warranty, Apparatus, Body Warranty, 1 Year

## **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.

# Huerfano County Fire Protection District

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.

Warranty, Body, Alum, Life-Time, Transferable

## **EXT MODULAR BODY WARRANTY - LIFE-TIME**

Rosenbauer America, LLC warrants to the original purchaser that the all-aluminum body, fabricated by Rosenbauer America, LLC, under normal use and with reasonable maintenance, be structurally sound and will retain structural integrity for the life of the vehicle. Warranty coverage is transferable to second owner, if applicable, with proper notification made to Rosenbauer America, LLC.

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.*

Warranty, Subframe, Lifetime Alum, Transferable

# Huerfano County Fire Protection District

## **ALUMINUM 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 that each new aluminum 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 lifetime of the body. Warranty coverage is transferable to second owner, if applicable, with proper notification made to Rosenbauer America, LLC.

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

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

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

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

*Note: Surety bond, if required, will cover standard one year warranty period only and will not cover any extended warranties allowed by seller or other component manufacturers.  
Warranty, Paint, AkzoNobel, 10 Year EXT*

## **PAINT WARRANTY - TEN YEAR**

The AkzoNobel paint performance guarantee will cover the areas of the vehicle finished with the specified product for a period of TEN (10) years beginning the day the vehicle is delivered to the purchaser.

# Huerfano County Fire Protection District

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 AkzoNobel 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.  
Warranty, Lettering and Striping, 1 Year*

## **LETTERING WARRANTY**

Rosenbauer America, LLC warrants to the original purchaser only, that the lettering and striping, installed by Rosenbauer America, LLC, will remain free from defects for a period of one (1) year under normal use.

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 item, 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.  
Pump Warranty, Rosenbauer, 5 Year

## **PUMP WARRANTY**

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, or one and one half years from the date of shipment by Rosenbauer America, LLC, whichever period will be the first to expire; 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

# Huerfano County Fire Protection District

requested by phone, fax or mail. The aforesaid warranty excludes any responsibility or liability of Rosenbauer America, LLC for:

- 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 to the buyer.
- 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.
- Any product or part, altered, modified, serviced or repaired other than by Rosenbauer America, without its prior written consent.
- The cost of dismantling, removing, transporting, storing, or insuring the defective product or part and the cost of reinstallation.
- Normal wear items (packing, strainers, filters, light bulbs, anodes, intake screens, etc.)
- Failure of the buyer to properly drain the fire pump and the attached plumbing system after each use. (Light Alloy Aluminum only)
- Failure of the buyer to maintain a dry pump and plumbing system between each and every use. (Light Alloy Aluminum only)

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:

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

Plumbing Warranty, Stainless Steel SST, 10 Years

## **STAINLESS STEEL PLUMBING 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 stainless steel plumbing components and ancillary brass fittings used in the construction of the water/foam plumbing system shall be warranted for a period of ten (10) years. This covers structural failures caused by defective design or workmanship, or perforation caused by corrosion, provided the apparatus is used in a normal and reasonable

# Huerfano County Fire Protection District

manner. This warranty is extended only to the original purchaser for a period of ten years from the date of the delivery and shall terminate upon the transfer of possession or ownership by original purchaser.

This warranty is conditioned upon normal use and reasonable maintenance of such plumbing; 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.**

Manuals, Electrical, As Built Body, 1 Set Printed w/Digital Copy

## **ELECTRICAL SYSTEM PRINTED MANUAL (OPTION) AS BUILT**

**ROSENBAUER** shall provide with the vehicle upon delivery, one (1) delivery manual for the electrical system.

This manual shall be in a notebook type binder, with reference tabs for each section of the vehicle. A digital copy, with all 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 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

# Huerfano County Fire Protection District

- Necessary normal routine service forms, publications, and components for the installed electrical components
- Technical publications for training and instruction on major components
- Warning and safety related notices for personnel protection

Cab and chassis manuals on parts, service and maintenance shall be provided  
Chassis, Freightliner M2 4 Dr

## **FREIGHTLINER CHASSIS**

A Freightliner 4-door chassis per the attached specifications shall be furnished:  
== EXT Timberwolf - DC Elec System - 4212.023 04/21/23 ==

Electrical, Base, Rosenbauer LCS 2.0 - Timberwolf/Airwolf

## **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.

The apparatus shall have a Rosenbauer Logic Control System (LCS™) using integrated CAN-bus technology. The system shall support both CAN-Bus technology as well as conventional wiring with relay driven circuits. The system shall be modular and configurable to accommodate the necessary control functions for the emergency apparatus being specified. The system shall provide operator relief with optimized sequences and a central control point(s) for all functions. Operator interface(s) shall have key buttons with tactile feedback (even when wearing gloves) to control apparatus functions. The key buttons shall allow the operator to engage or disengage functions by touch (pressed button feedback). Key buttons shall be identified with color-coded pictographs and/or labels combined with LED control lamps indicating function status. Operator interface(s) shall be ergonomic in placement and design, intuitive to use, with functions arranged in a top-down order configuration. The operator interface(s) shall be internally backlit for operation at night and low light conditions. The Rosenbauer LCS™ system shall provide maximum control integration of the various component systems installed on the specified apparatus. The system shall be pre-wired for computer accessibility to allow service personnel to easily connect to perform diagnostics, troubleshooting, or program additions.

The system shall have the following functions or features available:

1. Power management
2. Load shedding
3. Solid-state circuitry
4. Switch input

# Huerfano County Fire Protection District

5. Lighting device activation
6. Self-contained diagnostic indicators
7. Power distribution
8. Diagnostic display capability
9. High Idle
10. Throttle Control
11. Multiple Operator Interfaces

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

# Huerfano County Fire Protection District

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:

- a) 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.
- b) The electrical wiring shall be harnessed or be placed in a protective loom.
- c) 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.
- d) 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.
- e) 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.
- f) 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. All electrical equipment switches shall be mounted on a switch panel mounted in the cab convenient to the operator. For easy nighttime operation, an integral indicator shall be provided to signal 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:

# Huerfano County Fire Protection District

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.

Dr Open/Hazard Wrn Lt, Flashing LED, Red, Clear Lens, Whelen TIR3

## DOOR OPEN LIGHT

A red flashing, warning light shall be provided and installed in the driver's compartment to indicate an open passenger or apparatus compartment door. The warning light shall also be attached to folding equipment racks and light towers as specified. The light shall be a flashing LED light with a clear lens and shall be properly marked and identified.

Dr Open/Hazard Wrn Alarm, Buzzer

# Huerfano County Fire Protection District

## DOOR OPEN/HAZARD WARNING ALARM

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

Electrical Console, In Cab, Rosenbauer LCS 2.0, Tmbrwlf/Arwlf, Freightliner

## IN-CAB OPERATOR INTERFACE

An electrical console shall be constructed of molded fiberglass material with a black automotive textured finish and mounted in the cab of the truck chassis. Console shall be designed and installed accessible from the driver and passenger seats. The top face of the console shall be fabricated from smooth aluminum plate with a sanded finish. A Rosenbauer LCS™ operator interface shall be installed in the forward inclined panel.

The LCS™ operator interface is a user-friendly push button switch panel allowing an operator to control many separate emergency apparatus functions at a central interface point. The operator interface shall be configurable for emergency lighting and cab controlled fire fighting functions.

There shall be switches to control the following:

- Pump Start
- Pump Stop
- Tank To Pump
- Tank Fill / Recirculating Line
- High Pressure Valve
- Master Warning
- Primer

There shall be switches on the panel to control the following:

- Normal Pressure Foam System
- High Pressure Foam System
- Brow Light
- Left Scene Lights
- Rear Scene Lights
- Right Scene Lights
- Under-Truck Nozzles
- Truck Protection Sprinklers
- Air Blow Out
- Left Reel Rewind
- Right Reel Rewind
- **Please note:** These options are specified elsewhere in these specifications with a separate section and heading.

# Huerfano County Fire Protection District

All switches shall be back-lit, push button style. The switches shall have a colored LED light indicating when the switch circuit is in the engaged position.

Batteries, With Supl'd Chs

## **BATTERY SYSTEM**

The battery system shall be supplied with the chassis.

Battery Swtch, Mstr Disconnect , Chs Sppld

## **MASTER ELECTRIC SWITCH**

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

Battery Charger, KUSSMAUL, Chief Series 6012 w/Remote Display

## **BATTERY CHARGER**

A Kussmaul Chief series model #091-266-12-60, high output battery charger with remote display (091-94-12) shall be wired to the 12-volt battery system. The charger unit shall be mounted in a clean dry area and will be accessible for service and/or maintenance.

Shore Power Inlet, Below Left Front Cab Door, Commercial

## **SHORE POWER PLUG**

The shore power plug shall be located in the step area below the left front cab door of the commercial chassis.

Shore Power Inlet, KUSS Super Auto-Eject 20A

## **AUTO-EJECT**

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

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

## **AIR HORNS**

Two (2) Hadley brand E-Tone air horns shall be provided. The air horns shall be 6" in diameter and 24" long. Each horn shall feature flared ends offering a pleasing appearance.

Air Horn Location Hood Mounted, 1 Ea Side

# Huerfano County Fire Protection District

## **AIR HORN LOCATION**

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

Air Horn Cntrl, Driver, Horn Ring, Air/Elec

## **ELECTRIC TRAFFIC HORN AND AIR HORN SELECTOR SWITCH**

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

Air Horn Cntrl, Officer, Sgle Ft Swtch

## **AIR HORN FOOT SWITCH**

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

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

## **12 VOLT USB POWER SOURCE**

One (1) 12 volt dual USB power outlet with 5 volt 2.1 amp output shall be provided on the apparatus.  
Constant Power

The power source shall be "constant hot" and remain active regardless of the position of the master battery switch.

Lt, Engine Cmpt, 12 Volt LED, w/Switch

## **ENGINE COMPARTMENT LIGHT**

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

The control switch shall be mounted on the light head.

Back Up Alarm, EXT

## **BACK-UP ALARM**

An automatic electric back-up alarm shall be wired to the back-up light circuit, and mounted under the rear of the apparatus body.

Back Up Camera, ASA, Color

## **BACKUP CAMERA**

An ASA color rear camera system shall be mounted on the rear of the vehicle. All system components shall be installed by the apparatus body manufacturer.

# Huerfano County Fire Protection District

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

## **HAND LIGHTS**

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

Radio Antenna Base, Supply and Install, Ea

## **RADIO ANTENNA BASE**

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

Radio Spkr, Fire, Motorola, Supply/Install, Ea

## **RADIO SPEAKER**

One (1) Motorola #HSN4019B fire radio speaker shall be supplied and installed on the apparatus. The location shall be determined by the customer.

Radio, Fire, Install Cstmer Supl'd

## **RADIO**

Two (2) fire radio shall be supplied by the customer and installed on the apparatus. The location shall be determined by the customer.

12V Power/Ground, 30A, Radio Lctn

## **12 VOLT POWER SOURCE**

Two (2) 12 volt power and ground connection rated at 30 amps shall be provided on the apparatus for the installation of a mobile two-way radio.

Switched Power, Thru Master

The power source shall be run through the chassis master battery switch and shall be deactivated when the master switch is in the "OFF" position.

Marker Lts, LED, DOT Requirements, Tmbrwlf/Airwlf

## **MARKER LIGHTS**

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

License Plate Brkt, Cast Prdts, LP0005-1-C w/ LED Lt

## **LICENSE PLATE BRACKET**

# Huerfano County Fire Protection District

A Cast Products license plate bracket, model LP0005-1-C shall be provided at the rear of the apparatus. The bracket shall have a polished finish and LED light.

Tail/Brake Lts, Whelen, LED, M62BTT (Pair)

## **TAIL LIGHTS**

One (1) pair of Whelen M62BTT LED tail/brake lights shall be provided. The rectangular 4"x6" lights shall be red.

Turn Signals, Whelen, LED w/ Arrow, M62T (Pair)

## **TURN SIGNALS**

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

Backup Lts, Whelen, LED, M62BU (Pair)

## **BACKUP LIGHTS**

One (1) pair of Whelen Series M62BU LED backup lights shall be installed on the rear of the apparatus body. The dimensions shall be 4" x 6" and the lens color shall be clear.

Tail Lt Bezel, 4 Lts, Whln M6 (Pair), ABS Chrome

## **FOUR LIGHT HOUSING**

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

Turn Signals, Mid Bdy, LED Marker Lt (Pair)

## **MID BODY LED TURN SIGNALS**

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

Ground Lts, Cab, 4-Dr, LED, Whelen 3SC0CDCR Four

## **GROUND LIGHTS**

Each door shall include a Whelen 3SC0CDCR LED NFPA compliant ground light mounted to the underside of the cab step below each door.

Each light shall include a polycarbonate lens, a housing which is vibration welded and a bulb which shall be shock mounted for extended life.

The ground lighting shall be activated when the parking brake is set.

Ground Lts, Mid Body, LED, Whelen 3SC0CDCR, Pair

# Huerfano County Fire Protection District

## **GROUND LIGHTS**

There shall be two (2), one each side, Whelen 3SC0CDCR LED NFPA compliant ground light mounted to the underside of the rub rail, mid body.

Each light shall include a polycarbonate lens, a housing which is vibration welded and a bulb which shall be shock mounted for extended life.

The ground lighting shall be activated when the parking brake is set.

Ground Lts, Rr Step, LED, Whelen 3SC0CDCR, Pair

## **GROUND LIGHTS**

There shall be two (2) Whelen 3SC0CDCR LED NFPA compliant ground light mounted to the underside of the rear step.

Each light shall include a polycarbonate lens, a housing which is vibration welded and a bulb which shall be shock mounted for extended life.

The ground lighting shall be activated when the parking brake is set.

Ground Lts, Bhnd Rr Wheels, LED, Whelen 3SC0CDCR, Pair

## **GROUND LIGHTS**

There shall be two (2) Whelen 3SC0CDCR LED NFPA compliant ground light mounted to the underside of the compartments, behind the rear wheels.

Each light shall include a polycarbonate lens, a housing which is vibration welded and a bulb which shall be shock mounted for extended life.

The ground lighting shall be activated when the parking brake is set.

Lt Swtch , Ground Lts w/ Park Brake

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

Lt Swtch , Step/Wlkwy Lts Wired Park Brake Swtch

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

Deck Lts, Front Of Hosebed

## **DECK LIGHTS - FRONT**

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

Deck Lt, TecNiq, LED, Three (3) Lts E10

# Huerfano County Fire Protection District

Three (3) TechNiq E10 LED lights shall be provided on the rear of the bulk head to illuminate the hosebed area. The hosebed lights shall be controlled from a switch at the rear of the apparatus.  
Deck Lt Swtch , Wired Park Brake Swtch

A deck light switch shall be installed and wired to the parking brake.  
SCENE LIGHT - FRONT / CAB BROW

## **FRONT SCENE LIGHTING**

The following scene lighting shall be located on the front brow of the cab:  
Fldlt, Whelen, Pioneer Plus PFH2, Dual Lt, Cab Brow Mt, Frghtlnr M2, White

## **BROW SCENE LIGHT**

One (1) Whelen Pioneer Plus Super LED model PFH2 dual lamp brow light shall be provided. The light shall draw 13 amps. The bulb shall be accessible through the front. The lamphead shall be approximately more than 3" deep by 4-5/8" high by 14" wide. Lamphead and brackets shall be powder coated white.  
Scene Lt Swtch , Front Scene Lts, Cab LCS Display

## **SCENE LIGHT SWITCHING**

One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the front scene light(s). The switch shall be labeled "FRONT SCENE".  
SCENE LIGHT - BODY LEFT SIDE

## **LEFT SIDE CAB SCENE LIGHTING**

The following scene lighting shall be located on the left side of the cab:  
Scene Lt, Whelen, 900 S-LED

## **SCENE LIGHT**

Two (2) Whelen Series 900 LED 8" x 10" scene light shall be installed.  
Scene Lt Swtch , Cab LCS Display

## **SCENE LIGHT SWITCHING**

One (1) scene light switch with indicator shall be installed on the cab main switch panel to control all scene light(s). The switch shall be labeled "SCENE LIGHTS".  
SCENE LIGHT - BODY RIGHT SIDE

## **LEFT SIDE CAB SCENE LIGHTING**

The following scene lighting shall be located on the left side of the cab:

# Huerfano County Fire Protection District

Scene Lt, Whelen, 900 S-LED

## **SCENE LIGHT**

Two (2) Whelen Series 900 LED 8" x 10" scene light shall be installed.  
Scene Lt Swtch , Cab LCS Display

### SCENE LIGHT SWITCHING

One (1) scene light switch with indicator shall be installed on the cab main switch panel to control all scene light(s). The switch shall be labeled "SCENE LIGHTS".

SCENE LIGHT - REAR BODY

## **REAR BODY SCENE LIGHTING**

The following scene lighting shall be located on the rear of the body:

Scene Lt, Whelen, 900 S-LED

## **SCENE LIGHT**

Two (2) Whelen Series 900 LED 8" x 10" scene light shall be installed.  
Scene Lt Swtch , Rr Scene Lts, Cab LCS Display

### SCENE LIGHT SWITCHING

One (1) scene light switch with indicator shall be installed on the cab main switch panel to control the rear scene light(s). The switch shall be labeled "REAR SCENE".

Scene Lt Swtch , Rr Scene Lts, Auto w/ Reverse

### SCENE LIGHT SWITCHING

The rear scene lights shall activate automatically upon placing the transmission into reverse.

Siren, Elect, Whelen 295SLSA1

## **ELECTRIC SIREN AND CONTROL**

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

Spkr, F-S Dynamax, ES100C 100 Watt

## **SPEAKER**

# Huerfano County Fire Protection District

One (1) Federal Signal DynaMax 100-watt speaker, Model #ES100C, shall be installed. The speaker shall feature a Neodymium driver and a high strength composite housing that is chemical resistant and maintains rigidity at high temperatures.

Spkr Grille, SST, "R"

## **SPEAKER**

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

Spkr Lctn, To Be Determined by Body Mfg

## **SPEAKER LOCATION**

The siren speaker shall be installed on the apparatus bumper extension, as determined by the body manufacturer. Lt Bar, Whelen, Ultra Freedom IV, #F4N0VLED, LED, 60"

## **LIGHTBAR**

One (1) Whelen Ultra Freedom IV light bar shall be included with the apparatus cab. The light bar shall be a model F4N0VLED and shall be mounted on the roof of the cab, towards the front, above the windshield.

The light bar shall feature:

- A 60" light bar designed for high performance
- Four (4) red Linear Super LED corner modules
- Two (2) red 400 series Liner Super LED lights
- Two (2) white 400 series Linear Super LED lights with clear optic lenses
- Two (2) clear optic collimators
- Clear hard coated lenses to provide extended life/luster protection against UV & chemical stresses
- Designed in accordance with NFPA Zone A requirements

Lightbar Cntrl, with Master Warning Switch

## **LIGHTBAR ACTIVATION**

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

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

## **UPPER REAR WARNING LIGHTS**

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

Warn Light, Driver, Whelen, L31 LED Rotator Red Clear Lens, Ea

The driver side warning light shall be a Whelen red LED rotator, model L31H5F with a clear lens.

Warn Light, Officer, Whelen, L31 LED Rotator Red Clear Lens, Ea

# Huerfano County Fire Protection District

The officer side warning light shall be a Whelen red LED rotator, model L31H5F with a clear lens.  
Mounting, Rear Warning Light, Body Compartment

## **REAR WARNING LIGHT MOUNTING**

The upper rear lights shall be mounted on the upper corners of the apparatus body, one on each side.  
Wrn Lts, Whelen, Low Frnt, (2) M6 LED

## **LOWER FRONT WARNING LIGHTS**

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

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

Wrn Lt, Offcr, Whelen, M6, Red LED, Clear Lens, Ea

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

Flange, Chrome, Wrn Lt, Whln, M6, Ea

Each light shall be mounted with a Whelen Model M6FC chrome flange.  
Warning Lights, Whelen, Intersection, (2) M6 LED

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

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

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

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

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

Each light shall be mounted with a Whelen Model M6FC chrome flange.  
Warning Lights, Whelen, Lower Rear Side (2) M6 LED

## **LOWER REAR SIDE WARNING LIGHTS**

Two (2) pair of Whelen model M6 LED warning lights shall be installed, one each side of the apparatus body, towards the rear of the body. The dimensions of the lights shall be 4-5/16" x 6-3/4".

# Huerfano County Fire Protection District

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

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

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

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

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

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

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

## **LOWER REAR WARNING LIGHTS**

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

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

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

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

The officer side warning light shall be a Whelen Model M6BC blue Super-LED™ with clear lens.

Vehicle Dimensions, Single Axle

## **OVERALL DIMENSIONS**

The vehicle shall have the following dimensions:

- Chassis wheelbase:
- Cab to axle dimension of chassis:
- Overall length:
- Overall width:
- Overall height

Label, Data, Fluid Levels

## **FLUID DATA PLAQUE**

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

- Engine oil
- Engine coolant

# Huerfano County Fire Protection District

- Chassis transmission fluid
- Drive axle lubricant
- Power steering fluid
- Pump transmission lubrication fluid
- Other NFPA applicable fluid levels or data as required

Location shall be in the driver's compartment or on driver's door.

Label, Data, Height x Length, Weight

## **HEIGHT LENGTH & WEIGHT WARNING LABEL**

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

Label, Data, "No Ride" Rr Step

## **NO RIDE LABEL**

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

Label, Data, Tire Pressure

## **TIRE PRESSURE LABEL**

A label shall be placed in a visible area that indicates the front and rear tire pressure.

Label, Indicating Number of Seats

## **CAB SEATING POSITION LIMITS**

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

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

## **HELMET WARNING TAG**

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

Chassis Preparation, Comm, 4 Door, Tmbrwlf/Airwlf

## **CHASSIS PREPARATION**

Prior to installation of the fire pump, apparatus body, or cab steps, all components which extend out beyond the chassis frame rails shall be removed and relocated to the area within the frame rails allowing for maximum side depth compartmentation.

# Huerfano County Fire Protection District

Tow Plates (2), Rear Frame Rail, Under Rear Body, Tmbrwlf/Airwlf

## **REAR TOW EYES**

There shall be two tow eyes furnished under the rear of the body. Tow eyes are to be constructed of 3/4" plate steel with a 3" I.D. hole, large enough for passing through a tow chain end hook.

Painting, Tow Plates, Blk

The tow plates shall be painted black.

Bumper Extension, 28", By Body Builder

## **BUMPER EXTENSION**

The chassis frame shall be extended 28" with reinforced steel angle and structural channel by the body builder.

The extension shall be designed to support the bumper and other equipment to be installed.

Bumper Gravelshield, 28", By Body Builder

## **FRONT BUMPER GRAVELSHIELD**

A 28" front to rear filler panel constructed from NFPA compliant, slip resistant aluminum tread plate shall be provided on the front chassis frame extension. The extension shall be covered on the top and sides, up to the level of front bumper and shall be reinforced to support one (1) firefighter (approximately 250 pounds) and the equipment specified to be installed.

Battery Compartment, Driver Bumper, Timberwolf/Airwolf

## **FRONT BUMPER COMPARTMENT**

A recessed battery compartment constructed from smooth aluminum shall be installed in the driver side of the front bumper extension. Two (2) batteries shall be relocated from under the chassis cab and installed in this compartment. An aluminum tread plate door for the front bumper compartment shall be supplied. The flat door shall have a stainless steel hinge at the rear and a latch to secure the compartment. Water drain holes shall be provided in the bottom.

Battery Compartment, Passenger Bumper, Timberwolf/Airwolf

## **FRONT BUMPER COMPARTMENT**

A recessed battery compartment constructed from smooth aluminum shall be installed in the passenger side of the front bumper extension. One (1) battery shall be relocated from under the chassis cab and installed in this compartment. An aluminum tread plate door for the front bumper compartment shall be supplied. The flat door shall have a stainless steel hinge at the rear and a latch to secure the compartment. Water drain holes shall be provided in the bottom.

Batteries, Relocate Chassis Supplied, Bumper Extension

## **CHASSIS BATTERY RELOCATE - BUMPER EXTENSION**

# Huerfano County Fire Protection District

The chassis supplied batteries shall be relocated to the front bumper extension. The batteries shall be accessible thru an easily removable cover.

Bumper, Flat Style, Polished SST Cladding, Tmbrwlf

## **HEAVY DUTY FRONT BUMPER**

The front bumper shall be fabricated from ASTM A36 or equivalent steel with a minimum height of 12", a material thickness of .250" and match the width of the chassis. The front bumper top and bottom flanges shall be approximately 2" and shall be attached directly to the frame rails and be primed and undercoated. Bumper cladding fabricated from 16 gauge polished stainless steel shall be installed completely concealing the bumper for a high quality, finished appearance.

Tire Pressure Indicator, Single Axle, Commercial, RWTG1235

## **TIRE PRESSURE INDICATOR**

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

Exhaust, Vertical, With Chassis, Freightliner

## **VERTICAL EXHAUST SYSTEM**

The vertical exhaust system shall be supplied with the commercial chassis on the passenger side of the apparatus. There shall be a ventilated protective guard installed around the exhaust pipe.

Mud Flaps, Rear Wheels, Black, w/ Body

## **REAR MUD FLAPS**

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

Cab Step Overlay, 4 Door Driver Side w/Compartment

## **CAB ENTRANCE STEPS**

The four (4) door chassis shall be equipped with a modular step/fuel tank enclosure constructed from slip resistant aluminum tread plate to conform with applicable NFPA standards. The step/enclosure is to completely cover the fuel tank, and is to include a radius cut-out allowing access to the fuel tank fill. The entire step/enclosure is to be of a one piece design, bolted in place for ease of removal.

Heavy channel steel underbody supports shall be provided to support the driver and passenger side cab entrance steps. Supports shall be attached directly to the chassis frame rails, and shall provide adequate support to the steps to minimize flex and distortion.

# Huerfano County Fire Protection District

The overlay shall be provided with a storage compartment. A hinged door with latch shall be provided on the storage compartment.

Cab Step Overlay, 4 Door Passenger Side w/Compartment

## **CAB ENTRANCE STEPS**

The four (4) door chassis shall be equipped with a modular step enclosure constructed from slip resistant aluminum tread plate to conform with applicable NFPA standards. The entire step/enclosure is to be of a one piece design, bolted in place for ease of removal.

Heavy channel steel underbody supports shall be provided to support the driver and passenger side cab entrance steps. Supports shall be attached directly to the chassis frame rails, and shall provide adequate support to the steps to minimize flex and distortion.

The overlay shall be provided with a storage compartment. A hinged door with latch shall be provided on the storage compartment.

SCBA Bracket, Cab Seat, Zico "NFPA" Restraint, Ea HZ-KD-ULLH

## **SCBA BRACKET**

Three (3) Zico SCBA bracket, HZ-KD-ULLH, shall be provided for installation in the cab mounted SCBA seat. An NFPA approved cylinder retention strap shall be supplied.

Air Brake Cmprsr, KUSS, 120V, #091-9B-1

## **WATER TANK - 2000 GALLON**

The apparatus shall be equipped with a two thousand (2000) gallon polypropylene water tank. The tank shall be equipped with a four-inch (4") overflow pipe (a six-inch (6") overflow pipe shall be provided if required by dump valve installation).

Air Inlet, Mnl, Cab Exterior, Driver Step

## **AIR SHORELINE CONNECTION**

One (1) compressed air inlet fitting shall be provided for connection to an external air source to maintain the air brake pressure. The air inlet shall have a check valve installed to prevent air from escaping from the air storage tanks on the chassis.

The air inlet fitting shall be located in the driver's side step or door area.

Air Inlet, Shutoff Vlv

## **AIR INLET SHUTOFF VALVE**

# Huerfano County Fire Protection District

One (1) shutoff valve designed to isolate the air inlet fitting shall be installed adjacent to the air inlet fitting. The 1/4 turn valve shall be labeled accordingly.

Pump, Rosenbauer, NH55-1500 GPM, NPHP, PTO, LCS - Tmbrwlf

## **ROSENBAUER NH FIRE PUMP**

A Rosenbauer Model NH-1250 fire pump shall be mounted and installed. The rear mount combination normal and high pressure pump system shall have a rated capacity of 1250 GPM and shall meet all applicable sections of NFPA standards. The pump shall be constructed and mounted in accordance with the following specifications.

### **PUMP PERFORMANCE**

#### Normal Pressure

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

#### High Pressure

80 GPM at 600 PSI

The pump shall be capable of normal volume and high pressure flows simultaneously. Multiple discharge outlets shall be designed to flow both normal volume and high pressure at the same time.

### **PUMP BODY**

The pump shall incorporate a single stage normal pressure 1250 GPM impeller assembly. The pump shall incorporate a high pressure, four-stage pump with an 80 GPM rating at 600 PSI.

Both the normal pressure and high pressure impellers shall be housed in the same pump body. A single impeller shaft shall support both the normal and high pressure impellers. Separate normal and high pressure pumps will not be acceptable.

The main pump body shall be easily removable without disturbing setting of the pump on the chassis or engine.

The pump body is to be of high quality seawater resistant light alloy. All parts that come into contact with water shall be special treated light alloy or stainless steel. Heavy cast iron pumps are not acceptable.

The pump manufacturer shall test the pump for 10 minutes hydrostatically at a pressure of 500 PSIG. Hydrostatic certification by the pump manufacturer shall be provided.

# Huerfano County Fire Protection District

## 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.

Both the normal pressure and high pressure impellers will be installed in an oppositely imposed manner to balance the thrust load and to increase bearing and seal life.

## 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 rear mount pump transmission.

Primer, Rosenbauer, Automatic, LCS Belt driven

## PRIMER SYSTEM

The fire pump primer system shall be a positive displacement double piston type that is driven by a belt from the input shaft of the fire pump. The pump shall be lubricated from an oil reservoir but shall not oil or discharge oil in the exhaust. Primers that use 12 volt electricity to drive the primer shall not be acceptable due to voltage loss on the electrical system.

The primer system shall be a "hands off" automatic style primer that, when engaged for drafting operations shall be able to be left unattended for the duration of the drafting operation. Once pump pressure of approximately 5 PSI is achieved, the primer shall disengage. When the pump pressure drops below 5 PSI the primer shall re-engage itself to re-prime the fire pump.

This feature adds to the safety of fire fighters by automatically keeping the pump primed and allows the pump operator to assist in other duties on the fire scene. Primers that do not have this automatic feature will not be acceptable, no exceptions.

Pump Shift, Rosenbauer, PTO, Pump and Roll, Tmbrwlf/Airwlf

## 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. 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.

# Huerfano County Fire Protection District

- A green indicator light, labeled "PUMP ENGAGED" shall indicate pump shift has successfully been completed.
- A green indicator light, labeled "OK TO PUMP" shall indicate the chassis transmission is in proper gear and parking brake is engaged.
- Pump shift and interlocks shall comply with applicable sections of the NFPA standards.
- The pump shift shall have an instruction label and nameplate to indicate proper pump shift instructions.

Supply Valve, High Pressure, Elec, LCS

## **HIGH PRESSURE VALVE**

A 1 1/2" electrically operated valve shall be provided to feed the high pressure manifold. The specified valve shall be a one and one half-inch (1-1/2") valve with a stainless ball. The valve shall be equipped with a pneumatic actuator. The valve control shall be push button or rocker type switch with indicator light provided. When the valve is open, the indicator light shall illuminate. When the valve is closed the indicator light shall be off. The valve shall be controlled from the cab and pump operator's panel and shall be properly labeled.

Piping, SST - 1250 GPM & Up \*

## **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.

Intk Manifold, SST

## **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.

Dschg Manifold, SST

## **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

# Huerfano County Fire Protection District

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.  
Painting, Pump & Piping, Unpainted

## **PLUMBING SYSTEM**

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

## **HOSE THREADS**

The hose threads shall be National Standard Thread (NST) on all base threads on the apparatus intakes and discharges.  
Intk, Mstr, Gtd, 6", Mnl, Bttrfly, Rr Ctr - Tmbrwlf

## **GATED 6" INTAKE -- REAR CENTER**

A 6" gated suction intake shall be installed to supply the fire pump from an external water supply. A manually operated butterfly valve shall be provided on the intake. The valve shall be manually operated with a hand wheel control located adjacent to the intake connection.

There shall be an adjustable suction relief/dump valve installed on the supply side of the valve.

The intake shall be provided with a 3/4" drain and bleeder valve, controlled at the base of the pump panel. An inlet fitting with 6" NST thread shall be provided, complete with a removable strainer screen.  
Drain/Bleeder, Class 1, Mnl 1/4 Turn

A Class 1 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a 1"x 1 1/2" recessed ID label provision.  
Cap, 6", Chrome Long Hndl

A 6" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped long handles.  
Tank-To-Pump, Water Tank, 4" Butterfly Vlv, N/NH1250, One LCS, EXT

## **WATER TANK TO PUMP LINE**

A 4" water tank to fire pump line shall be provided with a 4" electric over air operated butterfly style suction valve, 4" piping, and with flex hose and stainless steel hose clamps. The tank to pump line shall be equipped

# Huerfano County Fire Protection District

with a check valve to prevent pressurization and the possibility of backfilling of the water tank. The valve shall be capable of being controlled at the pump operator's panel and in the cab.

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

Tank Fill/Cooling Line, Water Tank, 1-1/2", One LCS, Tmbrwlf/Airwlf

## **FIRE PUMP TO WATER TANK FILL LINE**

A 1-1/2" fire pump to water tank refill and pump bypass cooler line shall be provided. The valve shall be an electrically operated full flow quarter turn ball valve with 1-1/2" piping and flex hose to tank. The valve control shall have a nameplate located near the valve control.

Foam Capability, NP-FIXMIX & HP-FIXMIX, LCS - Tmbrwlf

## **HIGH PRESSURE & NORMAL PRESSURE FOAM CAPABILITY**

There shall be two (2) separate foam systems installed and shall operate independently. A Rosenbauer Normal Pressure FIXMIX automatic around-the-pump foam proportioning system shall be installed to provide foam capability to the normal pressure discharges only and a Rosenbauer High Pressure FIXMIX automatic around-the-pump foam proportioning system shall be installed to provide foam capability to the high pressure discharges only.

Foam System, RBA, NP-FIXMIX, LCS - Tmbrwlf

## **ROSENBAUER FIX MIX NORMAL PRESSURE FOAM SYSTEM**

A Rosenbauer Fix Mix automatic normal pressure around-the-pump foam proportioning system shall be provided and direct mounted to the water pump. The system shall be a fully mechanical system requiring no electricity, hydraulics or calibration to operate.

The system shall be capable of providing a constant foam proportioning independent of pump output and pump pressure. The system shall be capable of delivering foam at proportioning rates up to 6%.

Controls for the foam system shall be provided on the pump panel and in the cab.

When a bumper turret is required, proper switching shall be provided in the cab for operation of high pressure water to the turret within reach of the Driver and Officer.

NP-FIXMIX, Single Rate, Pneumatic

## **PROPORTIONING CONTROL & RATE**

The system shall be capable of providing a constant foam proportioning independent of pump output and pump pressure. The system shall have a pneumatic actuator for the foam proportioning provided at the pump. The system shall be capable of delivering foam at a proportioning rate as follows:

# Huerfano County Fire Protection District

Proportioning Rate, NP-FIXMIX, 1%

1%

Foam System, RBA, HP-FIXMIX, LCS - Tmbrwlf

## **ROSENBAUER FIX MIX HIGH PRESSURE FOAM SYSTEM**

A Rosenbauer Fix Mix automatic high pressure around-the-pump foam proportioning system shall be provided and direct mounted to the water pump. The system shall be a fully mechanical system requiring no electricity, hydraulics or calibration to operate.

The system shall be capable of providing a constant foam proportioning independent of pump output and pump pressure. The system shall be capable of delivering foam at a proportioning rate of up to 6%.

Controls for the foam system shall be provided on the pump panel and in the cab.

When a bumper turret is required, proper switching shall be provided in the cab for operation of high pressure water to the turret within reach of the Driver and Officer.

HP-FIXMIX, Foam Supply

The system shall be capable of providing a constant foam proportioning independent of pump output and pump pressure. The system shall have a control switch at the pump operator's panel for controlling the foam proportioner foam supply.

Proportioning Rate, HP-FIXMIX, 0.5%

The system shall deliver foam at a proportioning rate of 0.5%.

Foam Plmbg, HP-FIXMIX, Class A

The high pressure foam system shall be plumbed to the Class A foam tank .

Foam Plmbg, Sngl Class A Tank, 1-1/2" Mnl Vlv - Tmbrwlf

## **1-1/2" FOAM TANK LINE -- CLASS A**

A Class A foam tank shall be plumbed with 1-1/2" fittings and corrosion resistant hose from the foam tank outlet to the foam inlet of the foam system. A 1-1/2" manually operated foam tank shut-off valve shall be provided in the pump compartment with a label.

Foam Tank, Intgrl Poly, 30 Gal, Class A - Tmbrwlf

Foam Tank, UPF

The foam tank(s) shall be fabricated by United Plastic Fabricating.

Foam Tank Drain, 1" Gate Vlv, Under Tank

## **FOAM TANK DRAIN -- UNDER TANK**

# Huerfano County Fire Protection District

The foam tank shall have a 1" gate valve drain provision installed.  
Pressure Gvrnr, Rosenbauer, Tmbrwlf LCS 2.0

## **ROSENBAUER PRESSURE GOVERNOR**

A Rosenbauer pressure governor and monitoring system unit shall be installed. The module shall include a DigiView display module and a DigiPot adjustment module as well as an 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 9 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 communicated thru J1939 databus or engine specific wiring.

The following data should be displayed on different information screens of the display:

### FIRST SCREEN (MAIN SCREEN):

- Pump discharge pressure; more than 3/16" high
- Engine RPM; more than 5/32" high
- Pump Intake pressure; more than 3/16" high
- Pressure / RPM setting;
- Pressure and RPM operating mode shown by a symbol
- Throttle ready indicator
- Warning when battery voltage, oil pressure, engine coolant temperature or transmission oil temperature exceeds threshold
- Check engine and stop engine warning indicator
- Cavitation, running away from water, low water and no supply water warning indicator

### SECOND SCREEN:

- Operation hours of engine and pump

### THIRD SCREEN:

- Oil pressure; shown on a bar graph display
- Battery voltage; shown on a bar graph display

### FOURTH SCREEN:

- Engine coolant temperature; shown on a bar graph display
- Transmission Temperature: shown on a bar graph display

By pushing the forward or backward button it shall be possible to scroll between the different screens.

# Huerfano County Fire Protection District

The 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. Display 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. (scroll to second screen)

System shall monitor applicable values and support audible and visual warnings for the following conditions:

- High Battery Voltage
- Low Battery Voltage
- High Transmission Temperature
- Low Engine Oil Pressure
- High Engine Coolant Temperature
- Cavitation warning

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

Values of pump discharge and intake pressure sensors shall be measured thru pressure transducers. 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 surge shall occur when switching between modes. A throttle ready indicator shall indicate when the interlock signal is recognized. The governor shall start in RPM mode and set the engine RPM to idle. In pressure mode the governor shall automatically adjust 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. 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.

The operator shall be able to engage or disengage the pump through the pressure governor.  
Mstr Gauges, Rosenbauer, LCS 2.0, Digital, Pres/Vacuum

## **DIGITAL MASTER DISCHARGE AND INTAKE GAUGES**

The digital master discharge pressure and intake gauges shall be provided on the pump instrument panel as part of the Rosenbauer LCS 2.0 pressure governor system. The digital pressure gauge display shall be a waterproof

# Huerfano County Fire Protection District

display with super-bright digits at least 1/2" high. A weatherproof transducer (transmitter) shall be installed in the appropriate location in the piping system.

Gauge, Test Taps

## **TEST TAPS**

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

Gauge, Dschg, 2-1/2" 600#, High Pressure Pumps, Mntd on pump Panel

## **HIGH PRESSURE DISCHARGE GAUGE**

One (1) 2-1/2" diameter discharge pressure gauges (0-600 PSI) shall be provided for the high pressure pump. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

Gauge, Dschg, Digital, In Cab, Pump and Roll

## **IN-CAB DIGITAL PUMP AND ROLL DISCHARGE PRESSURE GAUGE**

One (1) digital pressure gauge shall be provided. The gauge display shall be a waterproof display with super-bright digits at least 1/2" high. A weatherproof transducer (transmitter) shall be installed in the appropriate location in the piping system. The gauges will be located in the chassis cab for pump and roll operations.

Water Level Display, DigiView, Pump Panel, LCS 2.0, Tmbrwlf

## **WATER LEVEL DISPLAY**

The apparatus shall be equipped with an in-cab water level indicator. The level indicator shall be incorporated and displayed on the DigiView LCD display located at the pump control panel. The tank level shall be displayed as a bar graph and tank level percentage to easily distinguish the water tank level at a glance.

All programming functions shall be integrated within the Rosenbauer LCSTM operator interface. Low tank level warnings shall include a flashing symbol on the display when the tank falls below the ¼ level and an output for an audible alarm.

The Rosenbauer LCSTM shall receive an input signal from a pressure transducer and send the signal via CAN-Bus to all water level displays. This sender unit shall be installed on the outside of the water tank near the bottom. All wiring, cables and connectors shall be waterproof without the need for sealing grease.

Water Level Display, DigiView, In-Cab, LCS 2.0, Tmbrwlf

## **WATER LEVEL DISPLAY**

# Huerfano County Fire Protection District

The apparatus shall be equipped with an in-cab water level indicator. The level indicator shall be incorporated and displayed on the DigiView LCD display located in the chassis cab. The tank level shall be displayed as a bar graph and tank level percentage to easily distinguish the water tank level at a glance.

All programming functions shall be integrated within the Rosenbauer LCST<sup>TM</sup> operator interface. Low tank level warnings shall include a flashing symbol on the display when the tank falls below the ¼ level and an output for an audible alarm.

The Rosenbauer LCST<sup>TM</sup> shall receive an input signal from a pressure transducer and send the signal via CAN-Bus to all water level displays. This sender unit shall be installed on the outside of the water tank near the bottom. All wiring, cables and connectors shall be waterproof without the need for sealing grease.  
Foam Tank Gauge, DigiView, Class A, Pump Panel, LCS 2.0, Tmbrwlf

## **CLASS A FOAM LEVEL DISPLAY**

The apparatus shall be equipped with a pump panel foam level indicator. The level indicator shall be incorporated and displayed on the DigiView LCD display located at the pump control panel. The tank level shall be displayed as a bar graph and tank level percentage to easily distinguish the Class A foam tank level at a glance.

All programming functions shall be integrated within the Rosenbauer LCST<sup>TM</sup> operator interface. Low tank level warnings shall include a flashing symbol on the display when the tank falls below the ¼ level and an output for an audible alarm.

The Rosenbauer LCST<sup>TM</sup> shall receive an input signal from a pressure transducer and send the signal via CAN-Bus to all level displays. This sender unit shall be installed on the outside of the water tank near the bottom. All wiring, cables and connectors shall be waterproof without the need for sealing grease.  
Foam Tank Gauge, DigiView, Class A, In-Cab, LCS 2.0, Tmbrwlf

## **CLASS A FOAM LEVEL DISPLAY**

The apparatus shall be equipped with an in-cab foam level indicator. The level indicator shall be incorporated and displayed on the DigiView LCD display located in the chassis cab. The tank level shall be displayed as a bar graph and tank level percentage to easily distinguish the Class A foam tank level at a glance.

All programming functions shall be integrated within the Rosenbauer LCST<sup>TM</sup> operator interface. Low tank level warnings shall include a flashing symbol on the display when the tank falls below the ¼ level and an output for an audible alarm.

The Rosenbauer LCST<sup>TM</sup> shall receive an input signal from a pressure transducer and send the signal via CAN-Bus to all level displays. This sender unit shall be installed on the outside of the water tank near the bottom. All wiring, cables and connectors shall be waterproof without the need for sealing grease.

# Huerfano County Fire Protection District

Pump Instln, Rr Mt PTO, By Bdy Bldr

## **PTO FIRE PUMP DRIVESHAFTS AND INSTALLATION**

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

Pump Test, Pumper, UL

## **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.

Pump Test, Label

## **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.

Dump-Relief Vlv, Suction Side, ELK #40, NST

## **INTAKE RELIEF/DUMP VALVE**

An Elkhart Model 40, 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.

# Huerfano County Fire Protection District

Discharge side of the intake relief valve shall be plumbed away from the pump operator.  
Pump Cooler, Bypass-To-Tank, 3/8", IC Mini-Twist Handle

## **FIRE PUMP COOLING**

The fire pump shall be equipped with 3/8" cooling line from the pump to the water tank. This pump cooling re-circulation line shall be controlled at the pump panel by a quarter-turn in-line ball valve with mini-twist control handle. The control handle shall be labeled "PUMP COOLING". 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.  
Pump Cooler, Rosenbauer, Thermal

## **FIRE PUMP COOLING**

The fire pump shall be equipped Rosenbauer thermal bypass cooling system. The system shall automatically dump water through a discharge line to the ground when pump water temperature exceeds 140 degrees.  
Heat Exchanger, Engine, Complete, IC Mini-Twist Handle

## **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 operated quarter-turn in-line ball valve with mini-twist control handle mounted at the pump 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 unit shall be installed by the chassis manufacturer and connected to the plumbing system by the fire apparatus manufacturer.

The control shall be identified with a chrome bezel label assembly labeled, "AUXILIARY ENGINE COOLER".  
Intk, Gtd, 2-1/2" NST, Left Rear, Rr Mt - Tmbrwlf/Airwlf

## **LEFT REAR 2-1/2" GATED INTAKE**

One (1) 2-1/2" gated suction intake shall be installed to left of the rear master intake 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 brass, chrome plated, or stainless steel material. The specified suction intake plugs shall be capable of withstanding a minimum of 500 PSI. The drain valve shall be located adjacent to the intake fitting.  
Drain/Bleeder, Class 1, Mnl 1/4 Turn - Spec Only

A Class 1 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a 1"x 1 1/2" recessed ID label provision.  
Plug, 2-1/2", Chrome Rocker Lug, w/Chain

# Huerfano County Fire Protection District

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

Vlv Mfgr, AKR, 8000, (2-1/2"), Mnl Swg Cntrl Only

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

The valve shall be equipped with a manually operated, swing-type manual control located adjacent the intake.  
The valve shall be equipped with a color-coded name plate.  
Dschg, 1", Left/Right Grnd Swps, Dual Vlvs - Tmbrwlf

## **LEFT & RIGHT 1" GROUND SWEEP DISCHARGES**

Four 3/4" ground sweep nozzles shall be provided and located one (1) each ahead of each wheel. The ground sweep nozzles shall be supplied with one inch (1") internal diameter, wire reinforced high pressure hose. The left side and right side ground sweep nozzle discharges shall be controlled separately using two (2) one inch (1") stainless steel ball valves. The valves shall open and close with pneumatic actuators. The controls shall be located in the chassis cab and accessible by both the driver and officer seating positions.

Dschg, 1", Ground Sweeps, Plumbed High Pressure

The ground sweep or front bumper "spraybar" discharge(s) shall be piped to the high pressure side of the fire pump.

Dschgs, (2) 1-1/2" Frnt Bmpr Crsls, Tmbrwlf

## **FRONT BUMPER -- 1-1/2" CROSSLAY DISCHARGES**

Two (2) 1-3/4" front bumper crosslays installed at the bumper deck area. The discharges shall be supplied by 2" quarter turn full flow ball valves at the pump panel. The discharges shall terminate with a swivel with 2" NPT female x 1-1/2" male NST hose threads. The swivels shall be mounted in the floor of hosebed.

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

Each crosslay hosebed shall be constructed of smooth aluminum with a minimum capacity of 150 feet of fire department supplied 1-3/4" diameter double jacket hose and nozzle.

The hosebed shall be constructed with slots integrated into the hosebed. A full width removable aluminum hosebed partition shall be installed in the center of the bed. The hose bed openings shall be equipped with hose and nozzle securement devices to comply with applicable NFPA standards.

Bumper Crosslay Hosebed, Full Width, (2) 150' 1-3/4", Timberwolf

## **FRONT BUMPER CROSSLAY HOSEBED**

# Huerfano County Fire Protection District

Two (2) crosslay hosebeds with minimum 3.5 cu. ft. capacity each, designed to carry 150 feet of 1-3/4" double jacket fire hose shall be provided and installed in the chassis front bumper extension. Crosslays shall be plumbed from the specified discharge valves on the fire pump using high pressure flexible hose with stainless steel end couplings. Crosslays shall be provided with recess mounted 1-1/2" NST **long neck** swivel discharges, and extruded aluminum hosebed flooring.

Crosslay/Speedlay, Equipment Securement, NFPA

## **EQUIPMENT SECUREMENT**

The hose bed openings shall be equipped with hose and nozzle securement devices to comply with applicable NFPA standards.

Crosslay Cover, Vinyl, Top and Sides

## **VINYL CROSSLAY COVER WITH END FLAPS**

The crosslay hosebed shall be equipped with a vinyl cover with end flaps and shall be secured with VELCRO fasteners.

The hose bed openings shall be equipped with hose and nozzle securement devices to comply with applicable NFPA standards.

Vinyl Cover, Color, RED

The vinyl cover shall be red in color.

Drain/Bleeder, Class 1, Automatic - Spec Only

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

Vlv Mfgr, AKR, 8000, (2"), KZCO Electric

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

Vlv Cntrl, AKR, 2.0" Elec, KZCO, Rocker Switch

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

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

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

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.

Monitor Dschg, 3", Top of Bdy, Tmbrwlf

## **3" MONITOR DISCHARGE**

# Huerfano County Fire Protection District

One (1) 3" discharge shall be piped to the top of the body 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 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.  
Drain/Bleeder, IC Lift-Up, Mnl 1/4 Turn

An Innovative Controls 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a recessed ID label provision. The handle shall lift, to open and push down, to close.  
Mntr, ELK, Cobra EXM2 1250GPM, Elec, No Nzls 00007200X2

## **COBRA EXM2 MONITOR (7200X2)**

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.  
EXM2CAN Stow Module

## **EXM2 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 two (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

# Huerfano County Fire Protection District

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.

EXM2 Panel Mount Controls 00007010X2

## **EXM2 PANEL MOUNT CONTROLS**

The deck gun controls shall be mounted on the pump panel.  
Nzl, Mstr Stream, ELK SM1250E, Elec

## **MASTER STREAM NOZZLE**

An Elkhart Select-O-Matic Model #SM-1250E, part number 03781201, nozzle shall be provided. This "X-treme" nozzle shall accommodate the fluctuating flows of 300 to 1250 GPM while operating at a lower pressure of 75 PSI. The stream pattern shall be controlled by a 12-volt electric motor for an infinite pattern selection from straight stream to a wide full fog.

The motor shall be completely encased in the durable, lightweight Elk-O-Lite construction. There shall be a manual override in case of power failure. The nozzle shall have a 2-1/2" NST swivel base and highly visible, yellow protective urethane bumper.  
Vlv Mfger, AKR, 8000, (3")

The specified valve shall be an Akron 8000 Series three-inch (3") valve with a stainless ball.  
Handwheel Control with Indicator | 4.5" | Innovative Controls

The specified valve shall be equipped with an Innovative Controls ergonomically designed 4.5" handwheel. The handwheel control shall incorporate a position indicator to indicate the position of the valve. The control shall be chrome plated zinc with recessed labels for color coding and signage.  
Gauge, Dschg, IC, 2-1/2" (0-400 PSI), WF

One (1) 2-1/2" IC discharge pressure gauges (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.  
Mntr, Tele Ext, ELK, Elec, 3", Vic x NPT, #8598

## **MONITOR EXTENDER**

An 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.

# Huerfano County Fire Protection District

The unit shall have a 3" Victaulic base by a 3" NPT male outlet for attachment to apparatus piping. Dschg, 2-1/2", Rr Cntr Pmp Pnl, Right Side, Tmbrwlf/Airwlf

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

One (1) 2-1/2" discharge shall be installed on the right side of the rear center pump panel and shall be controlled by a quarter turn ball valve on the rear mount pump control panel. The discharge shall have 2-1/2" NPT x 2-1/2" NST male hose threads. An engraved nameplate label shall be installed adjacent the valve control handle.

Drain/Bleeder, Class 1, Mnl 1/4 Turn - Spec Only

A Class 1 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a 1"x 1 1/2" recessed ID label provision. Elbow, Flange x 2-1/2"M, Chrome

One (1) chrome plated elbow bolted directly to the valve body shall be provided with 2-1/2" NST male hose threads.

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

One (1) 2-1/2" NST rocker lug chrome plated vented cap and cable or chain securement shall be provided. Vlv Mfgr, AKR 8000, 2-1/2", Mnl Swng Type-Adj, TS-7

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball. Dschg Vlv Cntrl, AKR, Mnl Swing Type-Adj, TS-7

One (1) manually operated swing-type, self-locking control located adjacent to the valve shall be supplied for the specified discharge. The control handle shall be an Akron TS-7 handle (7" long). The valve shall be equipped color-coded name plate.

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

One (1) 2-1/2" IC discharge pressure gauges (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

Dschg, Speedlay, 2-1/2", Right Rear Face, Tmbrwlf

## **RIGHT REAR FACE -- 2-1/2" SPEEDLAY DISCHARGE**

One (1) 2-1/2" discharge shall be installed on the right side lower rear face of the body next to the rear center pump compartment 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.

## **REMOVEABLE TRAY FOR SPEEDLAY HOSEBED**

# Huerfano County Fire Protection District

The speedlay hosebed shall be equipped with a "U" shaped aluminum hose tray. The unit shall be equipped with pull out hand holes and retaining devices to secure the tray, nozzle, and hose in transit. The tray shall have a storage capacity of 150' of 1-3/4" double jacket fire hose.

## SPEEDLAY ACCESS

A vertically hinged, single panel aluminum door with stainless steel D-handle latch shall provide access to the speedlay discharge and speedlay hosebed. The door shall be attached to the apparatus body with a full length, heavy duty stainless steel piano style hinge.

Drain/Bleeder, Class 1, Mnl 1/4 Turn - Spec Only

A Class 1 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a 1"x 1 1/2" recessed ID label provision.

Adptr, Reducing, 2-1/2" NST F x 1-1/2" NST M, Chrome

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

Vlv Mfgr, AKR 8000, 2-1/2", Mnl Swng Type-Adj, TS-7

The specified valve shall be an Akron 8000 Series two and one half-inch (2-1/2") valve with a stainless ball. Dschg Vlv Cntrl, AKR, Mnl Swing Type-Adj, TS-7

One (1) manually operated swing-type, self-locking control located adjacent to the valve shall be supplied for the specified discharge. The control handle shall be an Akron TS-7 handle (7" long). The valve shall be equipped color-coded name plate.

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

One (1) 2-1/2" IC discharge pressure gauges (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

Dschg, 2-1/2", Right Rear Upper Face, Tmbrwlf/Airwlf

## RIGHT REAR UPPER FACE -- 2-1/2" DISCHARGE

One (1) 2-1/2" discharge shall be installed on the right side upper rear face of the body just below the 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.

Drain/Bleeder, Class 1, Mnl 1/4 Turn - Spec Only

A Class 1 3/4" cast bronze quarter-turn drain/bleeder valve shall be installed. The valve shall be complete with a chrome plated bronze ball, reinforced teflon seals, and blow-out proof stem rated to 600 PSI. A chrome plated zinc handle shall be provided on each drain valve complete with a 1"x 1 1/2" recessed ID label provision.

Adptr, Reducing, 2-1/2" NST F x 1-1/2" NST M, Chrome

# Huerfano County Fire Protection District

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

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

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

Vlv Mfgr, AKR 8000, 2-1/2", Mnl Swng Type-Adj, TS-7

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

Dschg Vlv Cntrl, AKR, Mnl Swing Type-Adj, TS-7

One (1) manually operated swing-type, self-locking control located adjacent to the valve shall be supplied for the specified discharge. The control handle shall be an Akron TS-7 handle (7" long). The valve shall be equipped color-coded name plate.

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

One (1) 2-1/2" IC discharge pressure gauges (0-400 PSI) shall be provided. The face of the gauge shall be a WHITE dial with black letters. The gauges will be located on the pump instrument panel.

Hose Reel, HAN, LH Under Cab Cmpt, Elec, Stl Pntd - Tmbrwf

## **ELECTRIC REWIND HOSE REEL**

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

The hose reel is to be mounted in left side cab step compartment area.

Hose Reel, Rwnd Cntrl, Weatherproof Push Button

A push button hose reel rewind switch shall be installed to control the electric rewind hose reel. The exact location shall be determined at construction.

Dschg, Hose Reel, 1", Class 1 Valve

A Class 1, 1" ball valve gated discharge line shall be furnished with the valve located adjacent to the booster reel and plumbed using 1" I.D. wire reinforced, high pressure hose. The valve shall be operated using a Class One quarter-turn chrome plated handle attached directly to the valve complete with 1" x 1 1/2" ID label.

Dschg, Hose Reel, Plmbd to High Pressure

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

Hose, Water, 800#, 3/4-in x 150-ft, Three (3) 50-ft Lengths

Three (3) 50-foot lengths (150') of 3/4" water hose with pin lug couplings and 800 PSI working pressure shall be provided and mounted on the specified hose reel.

Nzl, Rosenbauer, Servo-Nepiro, High Pres, 1" NST

# Huerfano County Fire Protection District

A Rosenbauer Servo-Nepiro 'high pressure' nozzle with detachable foam tube shall be furnished and installed on the specified booster hose reel. The nozzle shall have a 1" NST female connection.

Nzl, Mtg, Hose Reel

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

Roller, Hose Reel, Captive, Four Sided

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

Hose Reel, HAN, RH Under Cab Cmpt, Elec, Stl Pntd - Tmbrwlf

## **ELECTRIC REWIND HOSE REEL**

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

The hose reel is to be mounted in right side cab step compartment area.

Hose Reel, Rwnd Cntrl, Weatherproof Push Button

A push button hose reel rewind switch shall be installed to control the electric rewind hose reel. The exact location shall be determined at construction.

Dschg, Hose Reel, 1", Class 1 Valve

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Dschg, Hose Reel, Plmbd to High Pressure

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

Hose, Water, 800#, 3/4-in x 150-ft, Three (3) 50-ft Lengths

Three (3) 50-foot lengths (150') of 3/4" water hose with pin lug couplings and 800 PSI working pressure shall be provided and mounted on the specified hose reel.

Nzl, Rosenbauer, Servo-Nepiro, High Pres, 1" NST

A Rosenbauer Servo-Nepiro 'high pressure' nozzle with detachable foam tube shall be furnished and installed on the specified booster hose reel. The nozzle shall have a 1" NST female connection.

Nzl, Mtg, Hose Reel

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

Roller, Hose Reel, Captive, Four Sided

# Huerfano County Fire Protection District

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

Painting, Hose Reel, Silver Grey

## **HOSE REEL PAINTING**

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

Pump Enclsr, Specs, Tmbrwlf/Airwlf

## **REARMOUNT PUMP ENCLOSURE**

The rearmount pump and plumbing installation shall be located in the rear compartment of the apparatus body. All NFPA required gauges and controls shall be furnished on a panel furnished with the pump or installed on a panel fabricated by the apparatus body builder.

Labels shall be furnished for the discharges and intakes and for other controls and indicators.

Located within the module shall be:

- Electric primer.
- Pump area service lights.
- All gauge piping and hoses.
- Intake dump valve.
- Pressure control device and throttle control.
- Pump engagement lights.
- Engine instruments.
- Master intake and discharge gauges.
- Tank fill control.
- Tank-to-pump control.

Pump Panel Lctn, TimberWolf, Rr Center

## **PUMP PANEL LOCATION -- REAR CENTER**

The pump operator's instrument panel for the rear mount pump shall be located in the rear center compartment of the apparatus body.

Pump Cntrl Panel Enc Door, Rr Mt, Rr Center, Roll Up

## **PUMP CONTROL PANEL ROLL-UP DOOR -- REAR CENTER**

The rearmount pump operator's panel shall be located at the rear center of the apparatus body. A roll-up style compartment door shall be provided for the door opening.

Pump Panel Lts (2), Rr Mt, (2) Grote #01-61F8-70 Low Profile, LED, Tmbrwlf

## **REARMOUNT PUMP PANEL LIGHTS**

# Huerfano County Fire Protection District

Two (2) Grote LED Slim White 12VDC lights Model 01-61F8-70 LED shall be installed to illuminate the rear pump area and operator's panel. Each light shall feature a high-output LED dome lamp, a tough polycarbonate lens, a sturdy aluminum base, a profile of less than 3/4" high and a 50,000 hour service life rating. The lights shall be controlled by a switch located on the pump operator's panel. One (1) light shall be mounted horizontally to illuminate each gauge panel.

Pump Cntrl Panel, Rr Mt SST, Tmbrwlf

## **PUMP CONTROL PANEL -- REARMOUNT**

The pump operator's instrument panel for the rearmount pump shall be constructed of 14 gauge #304 brushed stainless steel and be fastened to the pump enclosure with 1/4" stainless steel bolts.

Pump Access Panels, Rr Mt, Side Cmpts Bhnd Rr Whls

## **REARMOUNT PUMP AND PLUMBING ACCESS**

The rearmount pump enclosure and plumbing area shall be accessible through removable panels, with stainless steel bolts in rear side compartment walls.

Heater, Pump Enc, 30,000BTU, w/Swtch on Pmp Oprtr's Pnl

## **PUMP COMPARTMENT HEATER SYSTEM**

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

The heater unit shall be equipped with a 12-volt blower fan with control located on the pump operator's panel.  
Silicone Hose, Heater, Pump Enc (IPOS)

## **HEATER SYSTEM -- SILICONE HOSE**

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

Thermostat, Heater, Pump Enc, w/Mnl Ovrred on Pmp Pnl

## **PUMP HEATER SYSTEM THERMOSTAT**

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

Labels, Test Data and Safety Placards

## **LABELS**

Safety, information, data, and instruction labels for apparatus shall be provided and installed at the operator's instrument panel.

# Huerfano County Fire Protection District

The labels shall include rated capacities, pressure ratings, and engine speeds as determined by the certification tests. The no-load governed speed of the engine, as stated by the engine manufacturer, shall also be included.

The labels shall be provided with all information and be attached to the apparatus prior to delivery.  
Labels, IC Color Coded, EXT

## **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.

All labels, instruction panels and warnings shall be installed on the pump panel for safe operation of the pumping equipment and controls using Innovative Controls labels and bezel assemblies. These bezel assemblies will be used to identify intake and discharge controls with color and verbiage. The label and bezel assemblies are designed and manufactured to withstand the specified apparatus service environment and shall be backed by a warranty equal to that of the exterior paint and finish. The specified assemblies feature a chrome-plated panel-mount bezel with durable UV resistant polycarbonate inserts. These UV resistant polycarbonate graphic inserts shall be sub-surface screen printed to eliminate the possibility of wear and protect the inks from fading. All insert labels shall be backed with 3M permanent adhesive (200MP), which meets UL969 and NFPA standards

Air Blow Out, Tmbrwlf/Airwlf

## **AIR BLOWOUT**

An air blow out shall be provided for the normal pressure and high pressure side of the fire pump and all related discharges. The air supply shall be from the chassis air system with the control at the pump operator's panel.  
Water Tank, 750 Gal, Poly, T-Tank, Tmbrwlf/Airwlf

## **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.  
Water Tank, Base Specs, Poly

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.

# Huerfano County Fire Protection District

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

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

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

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

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

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

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

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

# Huerfano County Fire Protection District

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.

Water Tank, Manufacturer, UPF, Poly

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

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

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

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

Water Tank, Fill Tower, 10" x 10", EXT

## **WATER TANK FILL TOWER**

A fill tower measuring approximately 10" x 10" square shall be provided on the water tank.

Water Tank Clean-out & Plug, 3"

Tank suction shall be located in a sump assembly located below the bottom of the tank, properly baffled to prevent surging of water. A 3" cleanout plug shall be provided in the bottom of the tank sump.

Hosebed, Pmpr, <168" L, HD, 71" Wide - EXT

## **HOSEBED WIDTH**

The width of the pumper body hosebed shall be 71".

Hosebed, Grating, Extrd Alum, <168" Long - EXT

## **ALUMINUM HOSEBED GRATING**

The hose bed compartment deck shall be constructed entirely from maintenance-free, extruded aluminum slats. The slats shall have an anodized, radiused ribbed top surface. The slats shall be of widths approximately 3/4" high x 6" wide, space 1/2" apart and shall be welded into a one-piece grid system to prevent the accumulation of water and allow ventilation to assist in drying hose.

# Huerfano County Fire Protection District

Hosebed, Strge Cpcty, 30 Cubic Feet, Minimum

## **HOSE BED STORAGE CAPACITY**

The hose bed shall be designed to have a storage capacity for a minimum of 30 cubic feet of fire department supplied fire hose.

Hosebed, Divider, 1/4" Alum, EXT

## **ALUMINUM HOSEBED DIVIDER**

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

The divider shall be fully adjustable, mounted using extruded aluminum track at the rear and aluminum "C" channel tracks at the front of the divider for full side to side adjustment.

Hosebed, Divider, Handhole Cutouts

Each hosebed divider installed on the apparatus shall be provided with a hand hole cut-out approximately 3" wide x 8" long.

Hosebed, Partition, Front of Hosebed, Greater than 48" - EXT

A stationary hosebed partition shall be provided in the main hosebed, mounted left to right. The partition shall be fabricated of .190" smooth aluminum. Partition shall be bolted in place using stainless steel fasteners to allow for ease of removal or relocation.

Hosebed Cvr, Vinyl, <180" L, <74" W, Shock Cord w/Hooks

## **VINYL HOSEBED COVER**

The apparatus shall be equipped with a vinyl hosebed cover.

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

Vinyl Cover, Color, RED

The vinyl cover shall be red in color.

## **BODY CONSTRUCTION**

Bdy Const - Rosenbauer EXT - SA Timberwolf

## **HEAVY DUTY EXTRUDED ALUMINUM BODY**

To prevent possible interaction of dissimilar metals and to reduce the weight of the completed apparatus, the body and ALL STRUCTURAL SUPPORTS shall be constructed entirely of aluminum sheet and aluminum extrusions.

# Huerfano County Fire Protection District

Aluminum extrusions or sheet aluminum of smaller thicknesses or lesser grades to those specified herein are not acceptable.

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 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.

All extrusions utilized in the body superstructure, substructure and framing shall be 6061-T6 alloy aluminum. All extrusions shall be beveled at each joint and all seams shall be electrically seam welded using #5356 alloy aluminum wire. For strength and rigidity, all aluminum sheets utilized in the apparatus body for structural support shall be a minimum of **3/16"** 5052-H32 alloy aluminum sheet.

## FASTENERS

All fasteners use in the apparatus body shall be attached with Ny-Lok type fasteners.

All aluminum and stainless steel components shall be attached using stainless steel fasteners. Zinc or cadmium plated fasteners are not acceptable for use with any aluminum or stainless steel components on the vehicle.

Compartment door hinges, handrails and running boards shall be attached using a minimum of 1/4" diameter machine bolt fasteners. Fasteners used in nonstructural areas such as; door handles, trim moldings, gauge mounting, etc shall be 3/16" in diameter.

## BODY SUPERSTRUCTURE CONSTRUCTION

All vertical and horizontal structural members of the outer apparatus body shall be constructed of no less than 4.00" by 12.00", 6061-T6 aluminum extrusions with a minimum .200" wall thickness fully welded together forming a unitized support system for the body and compartments. In order to provide a complete internal and integrated body super-structure, full height extruded structural members shall be provided at each corner of the apparatus and between each exterior equipment compartment.

## EXTERIOR COMPARTMENT CONSTRUCTION

Compartment sides and walls shall be welded to the super-structure. Seams shall be sealed using an engineered grade polyurethane adhesive-sealant.

# Huerfano County Fire Protection District

The compartments shall be designed to provide protected raceways for vertically hinged door fastener retention elements. This requirement shall eliminate the possibility of door hinge hardware from being damaged by or damaging equipment stored in the compartments.

The compartment door openings are to be full width of the compartment with no loss of space. The raceways shall be designed to allow door hardware removal by a single person with simple hand tools.

Full height access panels fastened with stainless steel fasteners shall be provided to access all wiring routed through vertical super-structure extrusions. There shall be no exposed wiring allowed within the compartment interiors.

Compartment flooring shall be constructed of a combination aluminum extrusion and 3/16" smooth aluminum welded in place to the extruded aluminum framework creating a double compartment floor for added strength.

The tops of the side exterior compartments shall be constructed of NFPA #1901 Standards compliant non-slip polished aluminum treadplate fastened to the body with stainless steel fasteners. Compartment tops that are welded in place do not meet the serviceability intent of this requirement.

## SHELVING TRACKS

The vertical extrusions forming the framework of the side exterior compartmentation shall be designed to incorporate FULLY RECESSED adjustable shelving standards. Shelving tracks shall run full height of **ALL** side exterior equipment compartment.

The intent of this requirement is to allow full use of the available storage areas without the interference of shelving tracks extending into and reducing the interior widths of the compartments which will allow equipment to be stored within the full width of the compartment interiors.

Shelving, when specified, shall have a width of no less than .50" of the overall compartment width.

Adjustable shelving tracks welded or bolted onto interior walls of the compartments do not meet the intent of these specifications.

## HOSE BODY CONSTRUCTION

To maintain strength and rigidity, the main hose body shall be completely framed with a minimum of 2.00" X 3.00" 6061-T6 alloy aluminum extrusions with a minimum wall thickness .156" on the three inch legs and a minimum wall thickness of .188" on the two inch legs. The hose body extrusions shall be welded to the super-structure framework, becoming an integral portion of a complete unitized support system. Sheet metal or sheet aluminum with double or triple formed breaks, does not meet the technical requirement of the specification in providing a complete hosebody framework and are not acceptable.

# Huerfano County Fire Protection District

Sides shall be constructed of aluminum sheet welded to the framework.  
Electrolysis Corrosion Cntrl

## **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.

Side Body Header, Tread Plate, Sngl Axle, EXT

## **SIDE BODY HEADER**

All high side compartment tops shall be NFPA approved non-slip treadplate with the side body header area above the compartment doors finished with polished aluminum tread plate.

The aluminum overlays on the compartmentation tops on each side of the body shall be extended out and downward a minimum of .50" over the compartment doors forming a drip rail. Corners shall be TIG welded.

Lower or rear face compartments, if specified shall be provided with polished aluminum drip rails.  
Whl Well Panel, Alum T/P, Sngl Axle

## **WHEEL WELL PANEL AND LINER**

For ease of accessibility and maintenance, wheel well panels shall be double break formed polished aluminum treadplate that is fully gasketed and bolted in place with stainless fasteners. Wheel wells shall be of the removable design so as to provide replacement in the event of damage. There shall be no visible bolt heads, retention nuts or fasteners on the exterior surface of the panel. Wheelwell panel shall be isolated from the apparatus body utilizing .25" nylon spacer blocks.

To fully protect the wheel well area from road debris and to aid in cleaning, a full depth (minimum of 24.00") radius wheel well liner constructed of exterior grade .25" black polyethylene sheet shall be provided. For ease of removal, the liner shall be held in place by a self-captive retention design. Due to possible corrosion and contamination by road debris in the wheel well area a minimal number of mechanical fasteners shall be used to secure the wheel well liner at the front and rear edges.

Fenderette, Polished Stainless Steel SST, EXT

## **FENDERETTES**

# Huerfano County Fire Protection District

The rear wheel wells shall be radius cut for a streamlined appearance. A polished type 304 stainless steel radius fenderette shall be furnished at each rear wheel well opening, held in place with concealed stainless steel fasteners with nylon isolators to prevent contact of the fastener with the wheelwell housing panel. A black rubber gasket shall be installed between the stainless fenderette and the apparatus body sides. Silicone caulking does not meet the intent nor the technical requirement of a solid gasket material in this area and is not acceptable.

Sub-Frame, EXT, SA Tmbrwlf

## **ALUMINUM SUB-FRAME**

The surface of the chassis frame rails shall be isolated from the apparatus substructure by an elastomeric isolator.

The main body sub-frame shall be fully welded to the longitudinal chassis extrusions. Two (2) 6061-T6 aluminum longitudinal extrusions shall be provided, one (1) on each chassis frame rail running full length beneath the apparatus body. A minimum .50" extruded wall thickness shall be provided on the top flange of the chassis frame rail. Each extrusion shall be designed to cover the complete top flange and outside radius of the chassis frame rail extending down the outside web of the frame rail a minimum of 1.25" to prevent side to side shifting of the apparatus body.

The main body sub-frame shall be constructed of not less than four (4) 4.00" by 2.50" tubular, 6061-T6 aluminum, "I" beams with a .375" vertical main body crossmembers. A minimum of four (4) crossmembers shall be provided two ahead of and two behind the rear axle forming the main body support crossmembers.

The main crosstubes shall be routed through and fully welded to the vertical and horizontal extrusions forming the body super-structure.

For added strength and rigidity, no less than six (6) intermediate body crossmembers shall be provided constructed of solid aluminum structural "I" beams 4.00" high by 3.00" wide with a minimum .29" flange thickness. If necessary, additional crossmembers shall be provided, to meet the minimum booster tank mounting requirements, as published by the manufacturer of the booster tank provided.

The intermediate structural "I" beam crossmembers shall be interconnected and welded to the main body tubular crossmembers forming a fully welded support grid for the body super-structure compartments and booster tank.

A minimum of six (6) U-bolts shall be provided to secure the body sub-structure to the chassis frame. The forward two (2) U-bolts shall be shock absorbing spring tension type to allow for flexing without placing stress on the apparatus body or chassis frame rails.

100" OAW, Full Dpth Ahd Rr Whls & Half Dpth Ovrwhls, Tmbrwlf

## **BODY WIDTH**

# Huerfano County Fire Protection District

The overall width of the pumper body shall not exceed 100". The overall width across the rub rails shall be 101".

## COMPARTMENT DEPTH

The left side compartments ahead of the rear wheels shall have an interior usable depth of not less than 26" the full height of the compartment with the specified doors in the closed position in order to provide the maximum amount of storage area.

The left side upper compartment over the rear wheels shall have an interior usable depth of not less than 12" with the specified doors in the closed position.

The left side compartment behind the rear wheels shall have an interior usable depth of not less than 12" in the upper 15" portion and shall have an interior usable depth of not less than 24" in the remaining lower portion with the specified doors in the closed position.

The right side compartments ahead of the rear wheels and over the rear wheels shall have an interior usable depth of not less than 26" the full height of each compartment with the specified doors in the closed position in order to provide the maximum amount of storage area.

The right side upper compartment over the rear wheels shall have an interior usable depth of not less than 12" with the specified doors in the closed position.

The right side compartment behind the rear wheels shall have an interior usable depth of not less than 12" in the upper 15" portion and shall have an interior usable depth of not less than 24" in the remaining lower portion with the specified doors in the closed position.

Roll Up Drs, Outside Cmpt, Tmbrwlf, 160" Bdy

Drs, Roll-Up, Outside Cmpt, Specs, EXT

## ROLL-UP DOOR CONSTRUCTION

Exterior side equipment compartments so specified shall be equipped with roll-up shutter doors to be installed as specified herein. The door shall be located above and outside of the interior of the compartments thereby protecting the door in the raised position from possible damage by the shifting of equipment.

The door roll mechanism shall also be protected from possible damage should equipment shift while the vehicle is in transit with the door in the closed position.

# Huerfano County Fire Protection District

When the door is raised, the location of the drum assembly shall not allow water drainage from the doors into any portion of the interior of the compartment, thereby preventing the accumulation of water, snow, or ice from damaging the equipment located therein.

The roll-up door drum assembly shall be fully enclosed and protected from the elements. Provisions shall be made on each end and each side of the apparatus for moisture to self-drain from the raised doors to below the apparatus body using integral drainage ports.

To provide access for repairs and adjustments without removing equipment from the compartments, the door roll assemblies shall be serviced from above the compartment. There shall be no need to remove any equipment nor to open the door to provide service to the same. Should a door be prohibited from being raised because of damage to or a defect in the roller assembly, service must be capable of being performed without the cutting, damaging or destroying of the door shutters to gain access. Access to the door mechanism shall be provided through the removable door roller assembly access panel that requires only the use of common hand tools to remove.

Pendent plates supporting the door roll assembly shall be bolted in place, adjustable and capable of being removed with common hand tools. Pendent plates and supports that are welded in place do not meet the maintenance and service criteria of these specifications.

In order to provide unlimited access to stored equipment and to help prevent damage to the tracks by removing equipment, the tracks shall not protrude into any portion of the door frame opening. The width of the door frame opening shall be the actual useable width available to store and remove equipment. No Exception.

Door openings shall match the compartment sizes as specified.

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.

# Huerfano County Fire Protection District

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. A two (2) inch wide finger pull shall be integrated into the bottom rail extrusion for easy one hand opening and closing. The door latch system shall be a full width one (1) piece lift bar that enables the user to operate with one hand.

A magnetic door ajar system shall be integrated in the lift bar handle and the lift bar handle retainer block to signal an open door.

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 shall be incorporated to assist in lifting the door.

Dr Strap, EZ-Pull Down, Ea

## **EZ-PULL DOWN STRAPS**

Seven (7) elastic nylon straps shall be provided and installed on each roll up door. The straps shall be secured to the side wall of the interior compartment in a way that will allow the EZ-Pull strap to contract automatically and tuck inside the compartment when closed to prevent the strap from dangling and hindering closing of the door. When the door is the open position, the straps shall be installed so that they are fully extended as to not interfere with removing items from the compartment. For the ease of locating, the straps shall be bright orange in color.

Drs, Safe Step, Specs, EXT (Ea)

To safely access equipment stored in the upper section of the compartments, a heavy duty drop-down door safety step shall be provided at the base of the compartment. The drop-down door safety step and the upper door can be operated independently of each other and shall have no exposed mechanical devices or hinges in the closed position. Any use of piano style hinges does not meet the intent of this specification. **No Exception.**

An aluminum NFPA compliant treadplate stepping surface shall be provided full width of the compartment and no less than 16" in depth. Each drop-down safety step shall have a minimum static load capacity of 500 pounds.

Gas-filled springs shall assist in opening and closing the drop-down door safety step.

Finish, Safe Step, Tread Plate, Specs, EXT (Ea)

Each safe-step exterior surface shall have a polished aluminum tread plate finish when in the closed position.

Bdy, Rosenbauer EXT, Timberwolf, 160"

## **BODY LENGTH**

The apparatus body shall be 164" long, reference the drawing for actual body length.

Cmpt Height, 79" High Left, High Side, RU Drs

# Huerfano County Fire Protection District

## COMPARTMENT HEIGHT

The left side full height body compartments shall be 63" high and equipped with a 63" high clear door opening.

The left side upper level compartment(s) shall be 32" high and equipped with a 32" high clear door opening.  
Ahd Rr Whls-44" Full Ht Compt-Roll Up Outside Compt

## LEFT FRONT COMPARTMENT

There shall be one (1) 44" wide full height compartment located ahead of the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door.

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

A removable louvered vent shall be provided in the compartment.  
Shelf, Adjust, Alum 3/16", EXT

## ADJUSTABLE SHELF

Two (2) compartment shelf(ves) shall be provided and constructed of .190" smooth aluminum, and are to have formed upward breaks on front and rear for added strength. Shelf(s) shall be fully adjustable within the compartments. Lighter gauge shelf materials are not acceptable.

Shelf(ves) shall extend full width of the compartments, within .50" of the overall width, and adjust up and down in the integral shelf tracks.

Slide Tray, 500#, Alum 3/16" (1/4 Dpth), EXT

## 500# ROLLOUT TRAY

One (1) rollout equipment tray shall be installed in a standard depth compartment. The 500# rated tracks shall have roller bearings. The tray shall be constructed of .188" smooth aluminum plate, fabricated with four 3" sides.

The unit shall roll fully out of the compartment, with a gas operator to hold tray in both the "in and out" positions.

Compt Lt, Wall, Rcsd LED, (1) Ea Compt

## COMPARTMENT LIGHT

# Huerfano County Fire Protection District

Compartment shall be provided with one (1) fully recessed, rubber shock mounted, sealed and weathertight LED clear compartment light. The light shall be totally enclosed (not exposed to the environment) and side wall recess mounted within 12.00" of the compartment ceiling.

The lights shall be a minimum of 4.00" diameter and use recessed wiring, and are to be equipped with wire plugs for ease of removable or replacement.  
Cmpt Lt, Dr Swtch, Auto, Ea

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.  
Abv Rr Whls-52" Sngl Cmpt, No Hyd Rack-RU Outside Cmpt

## **LEFT OVERWHEEL COMPARTMENT**

There shall be one (1) 52" wide compartment above the rear wheels. The compartment shall be equipped with a single natural finish roll up door.

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

A removable louvered vent shall be provided in the compartment.  
Equipment Mounting Pnl, Rr Wall, 3/16 Aluminum

## **ALUMINUM ON BACK WALL OF COMPARTMENT**

There shall be one (1) 3/16" aluminum panel bolted to the back wall of the compartment for the purpose of mounting equipment. Spacers shall be used to create ½" space between the aluminum mounting panel and the compartment wall.

The aluminum mounting panel shall be mounted in the following compartments:  
Cmpt Lt, Wall, Rcsd LED, (1) Ea Cmpt

## **COMPARTMENT LIGHT**

Compartment shall be provided with one (1) fully recessed, rubber shock mounted, sealed and weathertight LED clear compartment light. The light shall be totally enclosed (not exposed to the environment) and side wall recess mounted within 12.00" of the compartment ceiling.

The lights shall be a minimum of 4.00" diameter and use recessed wiring, and are to be equipped with wire plugs for ease of removable or replacement.  
Cmpt Lt, Dr Swtch, Auto, Ea

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.  
Bhd Rr Whls-48" Full Ht Cmpt-Roll Up Outside Cmpt

# Huerfano County Fire Protection District

## LEFT REAR COMPARTMENT

There shall be one (1) 48" wide full height compartment located behind the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door.

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

A removable louvered vent shall be provided in the compartment.  
Shelf, Adjust, Alum 3/16", EXT

### ADJUSTABLE SHELF

One (1) compartment shelf(ves) shall be provided and constructed of .190" smooth aluminum, and are to have formed upward breaks on front and rear for added strength. Shelve(s) shall be fully adjustable within the compartments. Lighter gauge shelf materials are not acceptable.

Shelf(ves) shall extend full width of the compartments, within .50" of the overall width, and adjust up and down in the integral shelf tracks.  
Tool Board, Roll Out, 500#, 3/16" Alum (1/4 Depth)

### ROLL-OUT ALUMINUM TOOL BOARD

Two (2) roll-out tool board panel shall be mounted vertically within compartment. The panel and tracks shall be rated to a maximum load of 500 lb. Panel shall be formed of .188" smooth aluminum with an opening to accommodate a gloved-hand to slide tool board.

The tool board shall slide out to full extension of the compartment, with a device to hold tool board in both fully-extended and stored positions.  
Cmpt Lt, Wall, Rcsd LED, (1) Ea Cmpt

### COMPARTMENT LIGHT

Compartment shall be provided with one (1) fully recessed, rubber shock mounted, sealed and weathertight LED clear compartment light. The light shall be totally enclosed (not exposed to the environment) and side wall recess mounted within 12.00" of the compartment ceiling.

The lights shall be a minimum of 4.00" diameter and use recessed wiring, and are to be equipped with wire plugs for ease of removable or replacement.  
Cmpt Lt, Dr Swtch, Auto, Ea

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.  
Cmpt Height, 79" High Right, High Side, RU Drs

# Huerfano County Fire Protection District

## COMPARTMENT HEIGHT

The right side full height body compartments shall be 63" high and equipped with a 63" high clear door opening.

The right side upper level compartment(s) shall be 32" high and equipped with a 32" high clear door opening.  
Ahd Rr Whls-44" Full Ht Compt-Roll Up Outside Compt

## RIGHT FRONT COMPARTMENT

There shall be one (1) 44" wide full height compartment located ahead of the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door.

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

A removable louvered vent shall be provided in the compartment.  
Shelf, Adjust, Alum 3/16", EXT

## ADJUSTABLE SHELF

Two (2) compartment shelf(ves) shall be provided and constructed of .190" smooth aluminum, and are to have formed upward breaks on front and rear for added strength. Shelve(s) shall be fully adjustable within the compartments. Lighter gauge shelf materials are not acceptable.

Shelf(ves) shall extend full width of the compartments, within .50" of the overall width, and adjust up and down in the integral shelf tracks.

Divider, Vert, Bolt-In, 3/16" Alum

## COMPARTMENT DIVIDER

One (1) compartment divider constructed from 3/16" smooth aluminum material shall be installed. The divider shall be bolted in for ease of removal.

Shelving Tracks, (2) Unistrut, Alum

## ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

Equipment Mounting Pnl, Rr Wall, 3/16 Aluminum

## ALUMINUM ON BACK WALL OF COMPARTMENT

# Huerfano County Fire Protection District

There shall be one (1) 3/16" aluminum panel bolted to the back wall of the compartment for the purpose of mounting equipment. Spacers shall be used to create ½" space between the aluminum mounting panel and the compartment wall.

The aluminum mounting panel shall be mounted in the following compartments:  
Cmpt Lt, Wall, Rcsd LED, (1) Ea Cmpt

## COMPARTMENT LIGHT

Compartment shall be provided with one (1) fully recessed, rubber shock mounted, sealed and weathertight LED clear compartment light. The light shall be totally enclosed (not exposed to the environment) and side wall recess mounted within 12.00" of the compartment ceiling.

The lights shall be a minimum of 4.00" diameter and use recessed wiring, and are to be equipped with wire plugs for ease of removable or replacement.

Cmpt Lt, Dr Swtch, Auto, Ea

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.  
Abv Rr Whls-52" Sngl Compt w/o Hyd Rack-RU Outside Cmpt

## RIGHT OVERWHEEL COMPARTMENT

There shall be one (1) 52" wide compartment above the rear wheels. The compartment shall be equipped with a single natural finish roll up door.

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

A removable louvered vent shall be provided in the compartment.  
Shelf, Adjust, Alum 3/16", EXT

## ADJUSTABLE SHELF

Two (2) compartment shelf(ves) shall be provided and constructed of .190" smooth aluminum, and are to have formed upward breaks on front and rear for added strength. Shelve(s) shall be fully adjustable within the compartments. Lighter gauge shelf materials are not acceptable.

Shelf(ves) shall extend full width of the compartments, within .50" of the overall width, and adjust up and down in the integral shelf tracks.

Cmpt Lt, Wall, Rcsd LED, (1) Ea Cmpt

## COMPARTMENT LIGHT

# Huerfano County Fire Protection District

Compartment shall be provided with one (1) fully recessed, rubber shock mounted, sealed and weathertight LED clear compartment light. The light shall be totally enclosed (not exposed to the environment) and side wall recess mounted within 12.00" of the compartment ceiling.

The lights shall be a minimum of 4.00" diameter and use recessed wiring, and are to be equipped with wire plugs for ease of removable or replacement.  
Cmpt Lt, Dr Swtch, Auto, Ea

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.  
Bhd Rr Whls-48" Full Ht Compt-Roll Up Outside Compt

## **RIGHT REAR COMPARTMENT**

There shall be one (1) 48" wide full height compartment located behind the rear wheels. The compartment shall be equipped with a full height single natural finish roll up door.

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

A removable louvered vent shall be provided in the compartment.  
Shelf, Adjust, Alum 3/16", EXT

## **ADJUSTABLE SHELF**

One (1) compartment shelf(ves) shall be provided and constructed of .190" smooth aluminum, and are to have formed upward breaks on front and rear for added strength. Shelf(s) shall be fully adjustable within the compartments. Lighter gauge shelf materials are not acceptable.

Shelf(ves) shall extend full width of the compartments, within .50" of the overall width, and adjust up and down in the integral shelf tracks.  
Equipment Mounting Pnl, Rr Wall, 3/16 Aluminum

## **ALUMINUM ON BACK WALL OF COMPARTMENT**

There shall be one (1) 3/16" aluminum panel bolted to the back wall of the compartment for the purpose of mounting equipment. Spacers shall be used to create ½" space between the aluminum mounting panel and the compartment wall.

The aluminum mounting panel shall be mounted in the following compartments:  
Cmpt Lt, Wall, Rcsd LED, (1) Ea Cmpt

## **COMPARTMENT LIGHT**

# Huerfano County Fire Protection District

Compartment shall be provided with one (1) fully recessed, rubber shock mounted, sealed and weathertight LED clear compartment light. The light shall be totally enclosed (not exposed to the environment) and side wall recess mounted within 12.00" of the compartment ceiling.

The lights shall be a minimum of 4.00" diameter and use recessed wiring, and are to be equipped with wire plugs for ease of removable or replacement.  
Cmpt Lt, Dr Swtch, Auto, Ea

The compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.  
SCBA Mounting Bracket, Zico, 45 Minute, Non Riding HZ-KD-UH-6-SF

## **SCBA MOUNTING BRACKET**

One (1) Zico 45 minute SCBA air pack mounting with spring tension bracket included.  
Rr Bdy, 23 Degree Departure Angle, Tmbrwlf/Airwlf

## **REAR BODY**

The lower portion of the rear body shall be raised to provide a 26 degree angle of departure for off road use. The height of the left and right side compartments located behind the rear wheels will be reduced approximately 12".  
Rr Center Compt - Full Height/Non Trans - Timberwolf / Airwolf

## **REAR CENTER COMPARTMENT**

There shall be one (1) full height compartment located at the rear of the apparatus. The compartment shall be partitioned off from the side compartments.

The fire pump shall be installed in this compartment. A weather resistant cover shall be installed as specified elsewhere in these specifications.  
Rear Pull Out Step / Drawer

## **REAR DROP-DOWN STEP / TAILBOARD**

A 72" wide drop-down rear step shall be furnished on the rear of the apparatus constructed of extruded aluminum and slip resistant polished aluminum diamond plate. The drop-down step shall have a specially designed frame matching the rear angle of departure when in the up position. A length of heavy duty stainless steel hinge shall be used to attach the step to the body on each side. The step shall have a stainless steel spring-loaded positive latching system when in the stowed position. The step shall activate the "Do Not Move Apparatus" warning indicator when the park brake is released with the step in the un-stowed position. The rear center D.O.T. lights may be mounted to the step and must be visible with the step in the stowed position.  
Roof Access Ladder, Rosenbauer EZ Climb, Left Rr 14" wide

## **ACCESS LADDER**

# Huerfano County Fire Protection District

A swing out and down access ladder shall be supplied and installed on the left side apparatus. It shall be of an all aluminum design and shall incorporate treads 13 inches wide spaced no more than eighteen (18") inches apart. The ground to the first step dimension, on level ground, shall be no more than eighteen (18") inches. When in the deployed position the ladder shall have an angle of approximately 75-degrees to facilitate ascending and descending the ladder. The ladder shall be retained in the stowed and deployed position by two (2) gas cylinders and shall not require the use of lathes to hold it in position. The ladder overall width shall be approximately 14 inches wide.

High Angle of Departure Cmpts, Both Sides, Tmbrwlf/Airwlf

## **HIGH ANGLE OF DEPARTURE COMPARTMENTS**

Two (2) high angle of departure storage compartment shall be provided. There shall be one (1) installed under the behind the rear wheels body compartment on the left side and there shall be one (1) installed under the behind the rear wheels body compartment on the right side. The compartments shall be constructed from 1/8" smooth aluminum with an aluminum tread plate door and stainless steel hinge. A stainless steel, D-ring handle shall be provided for opening and closing the door. The door shall have weather stripping installed around the perimeter to provide for a weatherproof seal.

The dimensions for each compartment shall be approximately seven inches high x twenty-four inches wide x twelve inches deep (7" x 24" x 12").

Vents, Cmpts, Louvers (Ea)

A removable louvered vent shall be provided in the compartment.

Whl Well Cmpt, Ahd of Whls Left Side, Tmbrwlf/Airwlf

## **WHEEL WELL COMPARTMENT LEFT SIDE AHEAD OF WHEELS**

A wheel well compartment shall be located on the left side in the rear wheel well panel ahead of the rear wheels of the type specified herein.

Whl Well Cmpt, Sngl SCBA, Poly Tube, SST Dr, (Fire Shopp)

A Fire Shopp Inc. 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 black polymer. 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 provided.

Whl Well Cmpt, SCBA Cmpt Straps

# Huerfano County Fire Protection District

An 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.

Whl Well Cmpt, Bhnd Whls Left Side, Tmbrwlf/Airwlf

## **WHEEL WELL COMPARTMENT LEFT SIDE BEHIND WHEELS**

A wheel well compartment shall be located on the left side in the rear wheel well panel behind the rear wheels of the type specified herein.

Whl Well Cmpt, Sngl SCBA, Poly Tube, SST Dr, (Fire Shopp)

A Fire Shopp Inc. 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 black polymer. 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 provided.

Whl Well Cmpt, SCBA Cmpt Straps

An 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.

Whl Well Cmpt, Ahd of Whls Right Side, Tmbrwlf/Airwlf

## **WHEEL WELL COMPARTMENT RIGHT SIDE AHEAD OF WHEELS**

A wheel well compartment shall be located on the right side in the rear wheel well panel ahead of the rear wheels of the type specified herein.

Whl Well Cmpt, Sngl SCBA, Poly Tube, SST Dr, (Fire Shopp)

A Fire Shopp Inc. 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 black polymer. 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 provided.

Whl Well Cmpt, SCBA Cmpt Straps

# Huerfano County Fire Protection District

An 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.

Whl Well Cmpt, Bhnd Whls Right Side, Tmbrwlf/Airwlf

## **WHEEL WELL COMPARTMENT RIGHT SIDE BEHIND WHEELS**

A wheel well compartment shall be located on the right side in the rear wheel well panel behind the rear wheels of the type specified herein.

Whl Well Cmpt, Sngl SCBA, Poly Tube, SST Dr, (Fire Shopp)

A Fire Shopp Inc. breathing air cylinder storage compartment shall be provided and located in the rear wheel well of the apparatus body.

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Ladder Mtg, Hyd Rack, Center Mt Lo Pro 2.0, Passenger Side, EXT, Roll Up Doors

## **EQUIPMENT RACK - PASSENGER SIDE**

A hydraulic ladder rack shall be installed on the passenger side of the apparatus body, to carry the ladders in a horizontal position above the side compartments.

The ladder rack shall feature dual pivoting arms designed and shall be located in the center of the body, above the rear wheel area, with a weatherproof control switch provided on the body for operator in full view of the rack. The dual pivoting arms shall be mounted within the body compartment extrusions and shall not occupy and compartment space. The ladder rack shall be designed with no stabilizing arms at the front or rear of the body that hinder access to the forward/rear side compartments with the rack in the lowered position. The ladder rack shall be designed so that it will clear the compartment doors with the doors in the open position when ladders are being raised or lowered.

The vertical pivoting arms shall be constructed of 1" x 2.5" heavy duty steel tube for a more stable and stronger support system. No exceptions.

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Flashing lights facing front and rear shall be installed on the rack and shall be illuminated whenever the rack is in operation.

Cast aluminum ladder brackets with chrome plated quick release type mounting clamps shall be provided which hold the ladders to the pivot arm assembly.

A red warning light shall be provided and mounted in the cab to warn the driver when ladder rack is not in the stowed position.

The ladder rack shall be locked in the stored position when the ladder is in the upright position by the hydraulic system. This safety feature must be integral in the design of the hydraulic system.

When configured with a 79" body height, a dimension of approximately 53" shall be maintained when the ladder rack is in the lowered position from the ground to the bottom of the ladders. This dimension may increase when a taller body height or 4x4 chassis is specified or required.

Controls, Mtg, Equipment Rack, Pump Panel

## **MOUNTING – EQUIPMENT RACK CONTROLS**

The controls for the ladder rack shall be mounted on the pump panel, on the same side as the ladder rack.  
Ladders, Ground, Provd'd By Manufacturer, MN

## **LADDER SOURCE**

New ground ladders shall be provided by the manufacturer.  
Ladder, Roof, Duo-Safety, 14' Alum 775-A

## **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.

Ladder, Ext, Duo-Safety, 24' Alum, 2 Sect 900-A

## **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.

Fldg Attic Ladder Mntg, On Hyd Rack, Twlf/Xfire/RXT

## **FOLDING ATTIC LADDER MOUNTING**

# Huerfano County Fire Protection District

A mounting on the hydraulic ladder rack shall be provided for the specified folding attic ladder.  
Ladder, Attic, Duo-Safety, 10' Aluminum, Folding 585-A

## **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.  
Pike Pole Mounting Tube, In Ladder Compt

## **PIKE POLE MOUNTING BRACKET**

Two (2) tube shall be provided for pike pole mounting. The tube shall have a 2-1/4" interior diameter and shall be mounted within the ladder compartment.  
Pike Poles | Provided by Rosenbauer

## **PIKE POLES**

The following pike poles shall be provided.  
Pike Pole, 6' Fbgl, Round Hndl

## **PIKE POLE**

One (1) 6' pike pole with round handle shall be provided. The pike pole shall be of fiberglass construction.  
Pike Pole, 10' Fbgl, Round Hndl

## **PIKE POLE**

One (1) 10' pike pole with round handle shall be provided. The pike pole shall be of fiberglass construction.  
Suction Hose Tray, Single, Driver Side Over Compts (Ea), EXT

## **HARD SUCTION MOUNTING**

One (1) horizontally mounted aluminum hard suction hose tray with Velcro straps shall be provided above the driver side body compartments.  
Suction Hose Tray, On Hyd Ladder Rack, (Ea), EXT

## **HARD SUCTION MOUNTING**

One (1) horizontally mounted aluminum hard suction hose tray with Velcro retention straps shall be provided on the hydraulic ladder rack.  
Suction Hose Provd'd By, Bdy Bldr, MN

## **SUCTION HOSE SOURCE**

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New suction hose shall be provided by the body builder.  
Suction Hose, Flex, Kochek PVC, 6"x10'-MN

## **SUCTION HOSE**

Two (2) 6.0" x 10 foot length of Kochek PVC flexible suction hose shall be supplied. The suction hose shall have light weight couplings provided.  
Suction Hose Cplgs, Alum, LH FM x RLM

## **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.  
Step, Bltd, Treadplate, Rr Intermediate, 48"

## **REAR INTERMEDIATE STEP**

An intermediate fixed step shall be provided at the rear of the apparatus body, bolted in place and easily removable for replacement or repair. The intermediate step shall be constructed of .188" polished aluminum diamond plate or equal non-slip surface in compliance with NFPA #1901 standards and be approximately 8" deep x 48" wide.  
Handrail, Right Rr, Vert, 48", Single

## **HANDRAIL REAR**

One (1) extruded aluminum non-slip handrails, approximately 48" in length, shall be provided and vertically mounted on the rear of the apparatus on the right side of the body.  
Handrails, Pmpr, Below Hosebed, Horz, 48"

## **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.  
Handrails, Pmpr, Left Top of Bdy Side, Rr, 12", Single

## **HANDRAIL TOP OF BODY SIDE**

One (1) extruded aluminum non-slip handrails, approximately 12" in length, shall be provided and installed on the left side top-side of the rear hosebed for access to the hosebed area.  
Bdy Trim, Frnt Bdy, Ht of Side Cmpts, Alum T/P

## **FRONT BODY PROTECTION PANELS**

# Huerfano County Fire Protection District

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

Bdy Trim, Rr Bdy, Smooth Alum for Chevron Stripe, EXT

## **REAR BODY PROTECTION PANELS**

Smooth aluminum shall be installed on the rear of the body, to allow for the installation of a "Chevron" stripe on the rear.

Rub Rails, Lwr Bdy, EXT, Extrd Alum

## **EXTRUDED ALUMINUM RUB RAILS**

Full body length polished aluminum rub rails shall be bolted in place on the lower right and left body sides. The side rub rails shall be a heavy extruded aluminum "C" channel. There shall also be a bolt on aluminum corner casting on each rear corner to blend the rear tail board assembly with the side rub rails.

Bdy Paint, Tmbrwlf, Sngl Color, EXT

## **BODY PAINT PROCESS**

### **Facility Certification**

The paint facility shall be in current compliance with 40 CFR (code of federal regulations) part 63 subpart HHHHHH national emission standards for hazardous air pollutants: Paint stripping and miscellaneous surface coating operations at area sources (6H-NESHAP). Spray guns shall also be compliant certified by paint gun manufacturer.

### **Cab / Module Prep**

Prior to assembly, all joints and seams are to be mechanically etched. All welds shall be ground smooth prior to priming. The bare substrate of the module is first cleaned with a strong surface cleaner to remove fabrication and pneumatic tool oils. *The reason? Cleaning the surface prior to sanding prevents oils and contaminants from being imbedded into the substrate.* After sanding process, a mild surface cleaner removes any sanding dust residue along with pneumatic tool oil. A waterborne surface cleaner is available in case substrate was touched with bare hands or skin.

The following steps must be followed in sequence to properly apply paint to the Fire truck cab, chassis or module.

### **SURFACE PREP**

- Clean entire modular body with Sikkens OTO using the two-cloth method, wipe on wet, wipe dry. *Reason: Wiping our surface cleaners on wet, contaminants loosen and float to the top. Those floating contaminants then get wiped off with an absorbent towel.*

# Huerfano County Fire Protection District

- Using an orbital sander, (where polyester filler will be applied) 80-grit is used to provide a mechanical tooth for optimal adhesion. 180-grit is then used surrounding the 80-grit area. Sikkens M600 surface cleaner is then used to remove sanding dust and pneumatic tool oil. If bare hands or skin accidentally touched the surface, Sikkens Autoprep waterborne cleaner is used to remove natural oils. *Again: All surface cleaners are applied wet with one towel and wiped dry with another.*
- Rosenbauer approved polyester body filler is then applied over the 80-grit ground areas to cover the imperfections from welds. When body filler dries, it's first sanded with 80-grit then finish sanded with 180-grit to remove all 80-grit sand scratches. Blow off surface dust using approved air wand.
- After body work has been completed, the rest of the aluminum substrate on module gets sanded with 80-grit sandpaper until the surface is bright and sand scratches are consistent. Module gets blown off again to remove all sanding dust.
- Step 1 is essential in achieving proper adhesion.

## **EPOXY PRIMER and HIGH BUILD primer surfacer APPLICATION PROCESS:**

- First, if sanded aluminum substrate has not been primed within 8 hours, aluminum substrate gets re-abraded to remove oxidation that may have begun on aluminum surface. Aluminum substrate gets cleaned with Sikkens M600 surface cleaner using the 2-towel method. Surface cleaners do not get applied over body filler due to polyester filler being absorbent.
- One (1) coat of AkzoNobel LV262 Epoxy primer is applied. This epoxy primer slows down corrosion from happening if in case the unit (once out in the field) has stone chips or scratches down to aluminum. This product is a 2-component epoxy primer meaning it mixes with a hardener. Paint technicians are trained to properly apply this product to achieve a minimum of 1 mil DFT (Dry film thickness) required by AkzoNobel. A blank module schematic showing specific areas to measure dry film thickness is completed on each module /unit.
- Allow LV262 25 minutes minimum dry time prior to applying AkzoNobel LV650 primer surfacer. Apply two to three wet coats of AkzoNobel LV650 two component low VOC high build primer surfacer. A dry film thickness of up to 8 mils can be achieved prior to sanding. Minimum flash between coats is 30 seconds to 5 minutes. LV650 surfacer dries 3 different ways. 8 hour dry without accelerator, bake for 1 hour at 140-degrees or accelerate which allows technicians to sand in 45 minutes @70-degrees.

## **SANDING:**

- Block sand entire module with 320-grit sandpaper minimizing any accidental cut throughs on edges. Blow off body with air gun and move module into paint booth.

## **PRE TOPCOAT PREPARATION**

- Clean areas where Rosenbauer approved seam sealer is applied with Sikkens M600 surface cleaner. If by accident, bare hands or skin touched surface on cab or module, Autoprep waterborne cleaner is used on these areas prior to using M600 cleaner. Both cleaners are used with the 2-towel method.
- Seam seal with Rosenbauer approved non-shrinking moisture cured urethane seam sealer. Technicians follow seam sealer technical data sheets pertaining to application and dry times prior to applying AkzoNobel BT650 basecoat or 650 Topcoat single stage paint.
- Clean module with M600 surface cleaner. If by accident, bare hands or skin touched surface on module,

# Huerfano County Fire Protection District

Autoprep waterborne cleaner is used on these areas prior to using M600 cleaner. Both cleaners are used with the 2-towel method.

- If there are any visible cut throughs, paint techs first use a pre-treatment Alodine wipe followed by one coat of reduced LV262 epoxy primer over these areas and give a 20-minute flash prior to applying BT650 basecoat or Topcoat.
- Tack rag unit to remove any lint or dust that could have landed on surface.

## **TOPCOAT PROCEDURE**

- Mix BT650 basecoat or Topcoat (single stage) polyurethane paint.
- Fluid and spray pattern checks are done prior to applying BT650 base, Topcoat and Clear coat.
- Apply BT650 basecoat until complete coverage is achieved. If Topcoat is applied, a minimum of 1.8 mils is recommended after cut and buff procedure. Note: Topcoat doesn't get clear coated.
- Allow solid color BT650 basecoat to flash 20 minutes prior to applying 3 coats Sikkens LV651 Glamour Clear coat.
- If a metallic color, allow BT650 basecoat to flash 45 minutes prior to applying 3 coats LV651 Glamour Clear coat. Bake body for 45 minutes once surface temp has reached 140-degrees.
- The mil thicknesses are as follows:
  - Autocoat BT LV262 Epoxy Primer 1.0 to 1.5 mils
  - Autocoat BT LV650 2K Primer Surfacer 1.0 to 3.0 mils
  - Autocoat BT LV650 Basecoat color 1.0 to 1.8 mils
  - Autocoat LV651 Clearcoat 2.0 to 3.0 mils
  - Combined total: 5.0 to 9.3 mils

Compt Finish, DA Sanded, Up to 8 Cmpts, EXT

## **INTERIOR COMPARTMENT FINISH**

The interior of the eight (8) compartments shall be unpainted and have a D/A orbital sander finish. Bdy Paint, Touch Up, 2 oz. Bttl, One Color

## **TOUCH-UP PAINT**

One (1) two (2) ounce bottle of touch-up paint shall be furnished with the completed truck at final delivery. Lettering, 4" Mylar Gold Leaf, 50 Letters

## **SIMULATED GOLD LEAF LETTERING**

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

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

Maltese Crosses, Scotchlite Reflective, Pair Standard Design

## **MALTESE CROSSES**

# Huerfano County Fire Protection District

Two (2) Scotchlite reflective gold Maltese crosses with black outlining shall be applied. The crosses shall be 12" in diameter.

Stripe, Single Reflective, 4", Straight Design

## **CAB AND BODY STRIPE**

A straight Scotchlite reflective stripe, 4" in width, shall be applied horizontally around the cab and body in compliance with applicable NFPA 1901 standards. The purchaser shall specify the color and location of the stripe.

Reflective Stripe Material, White

## **COLOR OF STRIPING MATERIAL**

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

Stripe, Reflective 3M, Chevron Pattern Entire Rear Red/Yellow

## **CHEVRON STRIPING**

The entire rear portion of the body shall have 3M reflective red and yellow striping installed. The chevron style striping shall be applied at a 45-degree upward angle pointing towards the center upper portion of the rear panel.

Stripe, Reflective, Cab Door Interiors

## **REFLECTIVE STRIPE**

An approximate 1" reflective stripe shall be applied on the vertical outer edge of each chassis door interior.

NFPA Standing / Walking Surfaces Yellow Safety Tape (NFPA 15.7.1.6)

## **YELLOW SAFETY TAPE - STANDING & WALKING SURFACES**

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

Wheel Chocks Pair Zico #SAC-44 Folding w/ Mounts

## **WHEEL CHOCKS WITH MOUNTS**

A pair of Zico Model SAC-44 Quic-Chok folding wheel chocks shall be provided and mounted under the apparatus body with model SQCH-44H horizontal mounting brackets.

Emrgncy Road Kit - DOT Required

## **EMERGENCY ROAD KIT**

# Huerfano County Fire Protection District

One (1) DOT emergency kit shall be provided with the completed apparatus and shall include a 2.5 ABC fire extinguisher and three reflective triangles.