

DO NOT INVOICE THIS ADDRESS

City and County of Denver
 Purchasing Division
 201 W. Colfax Ave Dept. 304
 Denver, CO 80202
 United States of America
 Ph: 720-913-8100 Fax: 720-913-8101



| | |
|-----------------------|--------------|
| Purchase Order Number | PO-00179671 |
| Purchase Order Date | Feb 18, 2026 |
| Contract ID | |
| Payment Terms | Net 30 |
| Payment Type | ACH |
| Buyer | Leann Rush |

| Supplier |
|--|
| FRONT RANGE FIRE APPARATUS 7600 MILLER CT FREDERICK, CO 80504 United States of America Ph: (303) 4499911 |

| |
|---|
| Ship-To: Please note: review the additional notes section below for some more specific agency contact information. |
| DEN Maint Center 27500 E 80th Ave Unit A Denver, CO 80249 United States of America Matthew McKibbin |

| |
|--|
| Bill To |
| Denver International Airport 8500 Pena Boulevard Room 8870 Denver, CO 80249-6340 United States of America Matthew McKibbin |

| Currency | Total Lines Amount | Tax Exempt | Total PO Amount |
|-----------------|--------------------|-----------------------|-----------------|
| USD | \$12,229,826.00 | 98-02890-0000 | \$12,229,826.00 |
| Shipping Terms | Shipping Method | Shipping Instructions | |
| FOB Destination | Common Carrier | | |

| Goods Lines | | | | | | | | |
|--|-----------|--------------------------|--|----------|-----------------|----------|----------------|----------------|
| Line Number | Item Name | Supplier Item Identifier | Description | Due Date | Unit of Measure | Quantity | Unit Price | Line Amount |
| 1 | | | EX A: Ford F-550 Pierce Skeeter Fire Patrol Unit Replacing Z-F-044 on 2026 Fleet Capital Equipment | | Each | 1 | \$574,811.00 | \$574,811.00 |
| Ford F-550 Fire Patrol Unit Replacing Z-F-044 on 2026 Fleet Capital Equipment | | | | | | | | |
| 2 | | | EX B: Pierce Velocity 100' Ascendant Midmount Ladder Truck Additional Unit on 2026 Fleet Capital | | Each | 1 | \$2,747,100.00 | \$2,747,100.00 |
| Pierce Velocity 100' Ascendant Midmount Ladder Truck Additional Unit on 2026 Fleet Capital | | | | | | | | |
| 3 | | | EX C: Oshkosh Striker 8X8 RT ARFF Truck replacing Z-F-028 on 2026 Fleet Capital | | Each | 1 | \$2,969,305.00 | \$2,969,305.00 |
| Oshkosh Striker 8X8 RT ARFF Truck replacing Z-F-028 on 2026 Fleet Capital | | | | | | | | |
| 4 | | | EX C: Oshkosh Striker 8X8 RT ARFF Truck replacing Z-F-036 on 2026 Fleet Capital | | Each | 1 | \$2,969,305.00 | \$2,969,305.00 |
| Oshkosh Striker 8X8 RT ARFF Truck replacing Z-F-036 on 2026 Fleet Capital | | | | | | | | |

| Goods Lines | | | | | | | | |
|---|-----------|--------------------------|--|----------|-----------------|----------|----------------|----------------|
| Line Number | Item Name | Supplier Item Identifier | Description | Due Date | Unit of Measure | Quantity | Unit Price | Line Amount |
| 5 | | | EX C: Oshkosh Striker 8X8 RT ARFF Truck replacing Z-F-037 on 2026 Fleet Capital | | Each | 1 | \$2,969,305.00 | \$2,969,305.00 |
| Oshkosh Striker 8X8 RT ARFF Truck replacing Z-F-037 on 2026 Fleet Capital | | | | | | | | |

2026 Fleet Capital Equipment Purchase

- EXHIBIT A - Z-F-044 Replacement Ford F550 Pierce Skeeter Fire Patrol
- EXHIBIT B - Additional Unit: Pierce Velocity 100' Ascendant Ladder Truck
- EXHIBIT C - Z-F-028 Replacement Oshkosh Striker 8x8 RT, Z-F-036 Replacement Oshkosh Striker 8x8 RT, Z-F-037 Replacement Oshkosh Striker 8x8 RT
- EXHIBIT D - Vehicle Check-In Sheet

Purchase Order has been issued in accordance with DRMC 20-64.5 of the Revised Municipal Code: Cooperative Purchasing and is supported by State of Colorado Price Agreement HGAC Contract – HGAC FS12-23

The terms and conditions of this purchase order shall supersede and replace that of HGAC Contract – HGAC FS12-23

* *3.26(e)-This Purchase Order is contingent on Council approval and is void without such action**

Shipping: F.O.B. Denver, CO. 80249, Payment: Pricing listed includes volume discount and delivery. Term: Net 30 upon receipt of vehicles.

All Titles to Read:
City and County of Denver
201 West Colfax Avenue Dept. 304
Denver, CO 80202

Contact person for delivery and other questions is Matthew McKibbin at 303-342-2981 or matthew.mckibbin@flydenver.com

EXHIBIT D - Vendor to fill in and submit Vehicle Check-In Sheet for each vehicle or equipment asset. Delivery will NOT be considered complete without the form filled out and all checked documents included.

Delivery: Monday through Friday between 8:00am and 4:00pm. Location:
DENVER INTERNATIONAL AIRPORT FLEET
27500 E 80th Ave, Unit A
Denver, CO 80249

Purchase Order price listed herein includes all shipping and handling.

Upon service completion and/or delivery of goods, please reference Purchase Order (PO) number. Please send/copy invoices to accounts.payable@flydenver.com and matthew.mckibbin@flydenver.com

All billing inquiries are to be directed to the billing agency contact listed above.

CHANGES TO THIS PURCHASE ARE NOT VALID WITHOUT PRIOR APPROVAL FROM PURCHASING.

Delivery/ Service Agency Coordinator Contact:
Matthew McKibbin, 303-342-2891, matthew.mckibbin@flydenver.com

Supplier Contact:
Duane Doucette
President/Owner
Front Range Fire Apparatus
7600 Miller Ct.
Frederick, CO 80504
Phone: (303) 449-9911 x21
Cell: (303) 304-6118
Fax: (303) 449-1203
email: DuaneD@frontrangefire.com

Michael
Romero

Digitally signed by
Michael Romero

Authorized By

By accepting this Purchase Order you agree to the Terms and Conditions of the General Services Purchasing Division.
Follow the URL provided to the Purchase Order Terms and Conditions –
<https://denvergov.org/Government/Agencies-Departments-Offices/Agencies-Departments-Offices-Directory/General-Services/Purchasing-Division/Terms-and-Conditions>

EXHIBIT A
Z-F-044 Replacement Ford F550 Pierce Skeeter Fire Patrol



FRONT RANGE FIRE APPARATUS

7600 Miller Court
Frederick, CO 80504
303-449-9911
1-800-334-9911
www.FrontRangeFire.com

DUANE DOUCETTE
303-304-6118
DuaneD@frontrangefire.com



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A LOT'S RIDING ON YOUR INVESTMENT.

The safety of firefighters and families, the security of property and the well-being of the entire community depend on your decision. Lives and reputations ride on your investment. Make sure help is always on the way.

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- Staffed by 7 sales professionals with 150 years of combined experience
- State-of-the-art service center employs a team of highly trained and certified technicians
- Mobile services and a full line of parts and equipment

Untouchable Fire Apparatus Expertise

- Over 30,000 custom chassis built
- More than 30 patents attributed to our continued investment in research, development and safety
- Thousands of years of cumulative experience
- First single-source manufacturer of custom fire apparatus in North America to achieve ISO 9001 certification
- Only manufacturer to have third party, Underwriters Laboratories certification on the entire apparatus

Unshakable Stability

- Rock-solid financials as an Oshkosh Corporation Company
- Oshkosh named a World's Most Ethical Company by Ethisphere Institute
- Recognized as a 2016 Best Governance, Risk, and Compliance Program by NYSE Governance Services
- Complete transparency of a public traded company
- Greater strength from shared engineering and technology across all of Oshkosh Corporation
- With over 100 years of history and numerous industry-first contributions, we're not going anywhere
- America's Best Large Employers list by Forbes



200+
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PIERCE



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EMPLOYEES
WORLDWIDE**

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**ISO 9001
CERTIFICATION**

PIERCE & OSHKOSH



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USED
PATENTS**

OSHKOSH



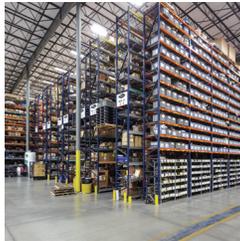
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RESPONSE**

FRONT RANGE
FIRE APPARATUS



VOLUNTEER & COMBINATION
OFFICERS SECTION

Pierce leads the industry in sponsorships that support families of fallen firefighters, recognize outstanding achievement and further the education and safety of the fire service.

www.piercemfg.com



Pierce Manufacturing Inc., An Oshkosh Corporation Company
P.O. Box 2017, Appleton WI 54912-2017 USA



Specifications, descriptions and illustrative material in this literature are as accurate as known at the time of publication, but are subject to change without notice. Illustrations may include optional equipment and accessories and may not include all standard equipment. All measurements are nominal values.

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P-0108-SLLSTBLTYSS-FRNRTRNG 1/17

FOR FURNISHING FIRE APPARATUS

January 05, 2026

City and County of Denver

The undersigned is prepared to manufacture for you, upon an order being placed by you, for final acceptance by Front Range Fire Apparatus., at its home office in Frederick, Colorado, the apparatus and equipment herein named and for the following prices:

| | |
|--|---------------------|
| One (1) Skeeter F550 Patrol Unit | \$574,811.00 |
| Per HGAC FS12-23 includes HGAC fee | |
| Includes delivery to customer location | |
| Per attached component list | |
| Delivery is approximately 22.0 to 24.0 Months | |

Payment Due at factory final inspection

Total \$ 574,811.00

Said apparatus and equipment are to be built and shipped in accordance with the specifications hereto attached, delays due to strikes, war, or intentional conflict, failures to obtain chassis, materials, or other causes beyond our control not preventing, within about 22 to 24 months after receipt of this order and the acceptance thereof at our office at Frederick, Colorado, and to be delivered to you Denver, CO

The specifications herein contained shall form a part of the final contract, and are subject to changes desired by the purchaser, provided such alterations are interlined prior to the acceptance by the company of the order to purchase, and provided such alterations do not materially affect the cost of the construction of the apparatus.

The specification for fire apparatus conforms with all Federal Department of Transportation (DOT) rules and regulations in effect at the time of bid, and with all National Fire Protection Association (NFPA) Guidelines for Automotive Fire Apparatus as published at the time of bid, except as modified by customer specifications. Any increased costs incurred by first party because of future changes in or additions to said DOT or NFPA standards will be passed along to the customers as an addition to the price set forth above. Unless accepted within 30 days from date, the right is reserved to withdraw this proposition.

Due to global supply chain constraints, any delivery date contained herein is a good faith estimate as of the date of this order/contract, and merely an approximation based on current information. Delivery updates will be made available, and a final firm delivery date will be provided as soon as possible.

FRONT RANGE FIRE APPRATUS.

By: _____
Duane Doucette
SALES REPRESENTATIVE





Specification for:
Type-6
C-3468 (Ford F550 - 4x4 - Gas - EXT Cab - 60" CA)

Submitted To:
Mark Allen
Denver International Airport
25365 E 75th Ave. Denver, CO 80249

Specification **2731**
12/24/2025

Prepared by:
Duane Doucette
Front Range Fire Apparatus

C-3468 CHASSIS SPECIFICATIONS

One (1) FORD F-550 two axle drive 4 x 4, dual rear wheels (DRW), Super Cab, XL cab and chassis

Measurements / Capacities:

Cab to Axle: 60 inch

Fuel tank size: 40 US Gallon

Wheelbase: 168 inches

Weight Ratings:

GVWR: 19,500 LBS

Front GAWR: 7,500 LBS

Rear GAWR: 14,706 LBS

Engine:

7.3L 2V DEVCT V8 Gas

350 HP at 3900 RPM

468 ft-lb at 3900 RPM

Transmission:

TorquShift 10 speed automatic transmission with overdrive.

PTO Provision

Axles:

Front: Mono-beam non-independent suspension with anti-roll bar

Rear: Dana M300 rigid axle leaf spring suspension.

Differential Gears: 4.88 Gears, Limited slip Rear Differential

Electrical Shift on the fly transfer case

Wheels:

Factory Tires: 225/70R19.5G BSW A/T, Radial all weather / off road tread

Front Wheels: two (2) 19.5" x 6" Painted steel, ten (10)-hole pattern steel disc wheels, GRAY

Rear Wheels: four (4) 19.5" x 6" Painted Steel, ten (10)-hole pattern steel disc wheels, GRAY

Cab Controls:

Controls for heat, defroster, and air conditioning

Powered Door Locks
Powered Windows
Powered Mirrors
Manual tilt steering wheel: (Unless superseded below in options)

Electrical Systems:

Dual alternator 410 amp, 12-volt
Two (2) 12-volt, 750 CCA, 78-amp hour batteries
AM/FM Stereo with MP3 Player with fixed antenna
Upfitter Switches
Upfitter Interface Module
Trailer Brake Controller
Trailer harness

Safety / Security:

Air bags: Safety canopy system, first row overhead airbag restraint system, dual seat mounted side impact airbag restraint system
Brakes: 4-wheel ABS, disc brakes, brake assist
Driveline traction control
Factory jack and lug nut wrench set
Tow Hooks: front loops

Seats:

Seating capacity: six (6)
Vinyl Seat Covering
Front 40-20-40 HD folding split bench seat
Rear 60-40 Folding rear split bench seat
Manual driver lumbar support
4-way driver seat adjustment
4-way passenger seat adjustment

Miscellaneous Included Equipment:

Power Steering
Exhaust system: horizontally mounted, discharge on passenger side of chassis aft of rear wheels.
Cooling system: protected to -30 degrees
Printed Manuals: one (1) printed chassis operation manual

Colors:

Interior color: Medium Earth Gray

Chrome Grill With Black Insert

***Specifications are subject to change without notice due to OEM model year updates or revisions.

SP-2172 BUMPER TURRET LIGHTS

Two (2) Whelen, Model PSBS12, 4" LED spotlights will be mounted on the bumper turret. Both spotlights will be controlled by a single switch in the cab.

C-4136 60" CAB TO AXLE

The chassis Cab to Axle measurement shall be 60".

C-4274.3 CAB REPAINT - SOLID - ONE CUSTOM COLOR

1. Cab Color: Lime Yellow Pierce #40
2. Description: Solid Lime Yellow Pierce #40

COMPLETE CAB SINGLE COLOR PAINT SCHEME, DOOR JAMBS PAINTED

Aftermarket Paint Warranty covers defects in the applied paint for up to three years or 36,000 miles, whichever comes first.

C-3545.2 CAB STEPS - FORD SUPER CAB

The cab shall be equipped with steel step assemblies, on each side of the cab. There shall four (4) stirrup steps mounted two (2) each side on the cab steps. They shall be installed in the best location to allow easy access to the cab.

The stepping surface shall be lined with NFPA aluminum diamond plate.

C-5589.2 3IN LIFT KIT - FORD 4X4

There shall be a 2-3" lift installed. Kit shall include the following components. The fenders and fender flares shall be modified for tire clearance.

- Upgraded Coils
- Upgraded Radius Arm W/ Skeeter Badging.
- Brake Line relocation brackets.
- Front Bump Stops.
- Track Bar
- Front Sway Bar.

- Skeeter 2.5 Reservoir Shocks with brackets.
- Dual Stabilizers.

NOTE THE OVERALL HEIGHT OF THE APPARATUS SHALL NOT EXCEED 99".

C-4202 FRONT AND REAR SUPER SINGLE TIRES AND WHEELS

There shall be four (4) Toyo M608Z super single front and rear tires, There shall be 285/70R19.5, radial all terrain tread. The tire weight rating shall be load range "H" (6,395 lbs), and the speed rating shall be 75 mph.

There shall be four (4) wheels for the front and rear tires. There shall be C" disc, ten (10)-hole pattern with a rating to match or exceed the tire rating.

NOTE: REQUIRES 2" LIFT MINIMUM

C-3486 NO SPARE TIRE

No spare tire shall be supplied.

C-4171 TIRE PRESSURE INDICATOR, MECHANICAL

There shall be a set of tire pressure indicators installed on the valve stems of the wheels. The indicators shall show if the tire is at the correct pressure by showing a "Green" indicator on the valve stem. The indicator shall show "Red" when the pressure is incorrect.

C-3902 FRONT BUMPER - STOCK BUMPER

The stock chassis front bumper shall be utilized.

C-3519 CONSOLE - ALUMINUM ENCLOSURE

A DA aluminum electrical console and enclosure shall be located between the driver's and passenger's seats. The aluminum body shall be powder coated matte black. It shall house the siren, switches, cup holder, map box, equipment storage, and auxiliary equipment. It shall have a custom poly faceplate. It shall extend fully to the dash and include arm rests.

C-4551 USB POWER OUTLETS

There shall be 1 Dual USB-A/USB-C power outlets rated at 4.8amps shall be provided in cab.

LOCATIONS: Mounted on the center console faceplate.

C-4354 CONSOLE - UPGRADED FUSE BLOCK

The fuse block in the center console shall be upgraded to a 5025 100amp style fuse block. This fuse block shall be wired to the same signal as the rest of the Skeeter electrical system.

C-3822 CAB POLY - SCBA AND EMS CABINETS - FULL 2ND ROW

The interior cab shall be equipped with a SCBA and an EMS storage cabinet. The cabinet shall be mounted between the back cab wall and the rear of the front seats. The cabinet shall be constructed of 1/2" polyurethane.

The SCBA cabinet shall house two (2) SCBA brackets, and have storage underneath for two (2) spare SCBA bottles. The EMS cabinet shall be constructed to allow storage of EMS components.

C-3871 RADIO INSTALLATION

Three (3) fire radios shall be supplied by the purchaser to be installed.

Location: Finalized at preconstruction.

ALL EQUIPMENT NECESSARY TO INSTALL/OPERATE A CUSTOMER SUPPLIED RADIO MUST BE PRESENT AT SKEETER BRUSH TRUCKS WITHIN 30 DAYS OF COMPLETED PRE-CONSTRUCT. IF ALL COMPONENTS ARE NOT PRESENT THE RADIO WILL NOT BE INSTALLED

C-4003 INSTALLATION -- RADIO ANTENNA -- CUSTOMER SUPPLIED

One 1 radio antenna with cable shall be supplied by the purchaser and installed on the apparatus at a location to be determined by the purchaser.

THIS OPTION DOES NOT INCLUDE INSTALLATION OF RADIOS, OR MDT/MCT.

ALL EQUIPMENT NECESSARY TO INSTALL/OPERATE A CUSTOMER SUPPLIED RADIO MUST BE PRESENT AT SKEETER BRUSH TRUCKS WITHIN 30 DAYS OF COMPLETED PRE-CONSTRUCT. IF ALL COMPONENTS ARE NOT PRESENT THE RADIO WILL NOT BE INSTALLED

C-4009 BACK-UP CAMERA SYSTEM

One (1) Rosco STSK4532 rear view mirror camera system shall be furnished utilizing a camera which provides a wide field of view and picture quality. A sealed camera enclosure shall be utilized along with electronic connections.

One (1) camera shall cover the rear of the apparatus, which will activate during back-up mode and during normal operations if needed.

C-3612 REAR RECEIVER - STANDARD - WINCH/ROPE/TRAILER

The rear of the chassis shall be equipped with one (1) square steel tube receiver assembly for trailer use and winch applications. It shall be the same size as a Class III trailer hitch and shall be attached to the chassis frame assembly. The receiver shall be rated at approximately 10,000#.

The rear receiver assembly shall be equipped with two (2) heavy duty rear tow loops, one (1) each side.

C-3530 TRAILER PLUG

Wiring shall be provided at the rear of the apparatus for the towing of an auxiliary trailer. A 12 volt seven (7) pin electrical connector shall be wired to the chassis stop, running, and turn lights.

SP-2173 PUMP COMPARTMENT HEATER

One (1) hot water heater rated for 33,000 BTU, will be installed in the pump compartment. It will be mounted low facing the back of the pump panel.

Controls for the heater will be located at the pump operator's panel. An On/Off master switch will be provided for the hot water heater on the cab instrument panel.

The pump compartment will be enclosed at the top to retain the heat generated by the heater inside the pump compartment.

Both the supply and the return lines will have shutoff valves.

SP-2178 SHORELINE COLOR

Please provide Kussmaul Battery charger with Yellow shoreline in place of the red one. Shoreline to be located on the driver side rear body bulkhead.

C-4205.10 R200 - CUSTOM RESCUE SQUAD ALUMINUM BODY

The body will be a custom fabricated severe service Rescue-Squad type, constructed of all aluminum. The body shall be 114" long by 88" wide, designed for a 60" cab to axle dimension.

FLAT-BED SUB-STRUCTURE

The body shall have 6" x 1.75" structural aluminum channel main frame rails. The body frame rails shall be isolated from the truck frame by .500" industrial isolators.

FLAT-BED CROSS-MEMBER SUB-STRUCTURE

The cross-members shall be 3" x 2 5/16" structural aluminum I beams with cross-members on 12" centers.

FLAT-BED MOUNTING

The body shall be bolted to the chassis frame rails at the rear end of the frame. There shall be brackets installed at the middle of the body frame to prevent side to side movement. The body shall be spring mounted at the front of the body frame. The flexible mounting system shall allow for body/chassis flexing during extreme off road conditions.

SQUARE FRONT BODY CORNERS

The front corners of the body shall be square.

HEADACHE RACK

The front of the body shall have a 2" formed aluminum tube headache rack. The rack shall extend the full width of the body and be attached to the front body corners. The assembly shall extend above the chassis cab and have mounting platform for installation of the light bar and other lights. Wiring for the lights will be placed inside the tubing for protection. The headache rack shall have four (4) vertical 2" tubes for extra strength.

SIDE BODY ACCESS STEP

There shall be a body access step assisting in access to top of the tool/hose trays from the side of the apparatus. It shall be a stirrup design, and be fabricated from 1" aluminum tubing. They shall be installed under the front of the body, one (1) each side.

FUEL FILLER

The fuel filler tube and cap shall be installed at the driver's side, rear of the body.

FENDER PANELS

The lower portion of the flat-bed body shall have fender panels over and aft of the rear wheel panel area. The panels shall be constructed of .125" aluminum smooth plate on all exterior surfaces. The wheel well openings will be cut out to conform to the wheels.

REAR BODY PANEL

A vertical body panel shall be installed at the rear of the body constructed of .190" smooth aluminum. The panel shall house the running lights, taillights, back-up lights, and emergency lights. The body panel shall be angled to allow for a 30 degree angle of departure.

SIDE BODY COMPARTMENTS, FRONT BODY -- DRIVER'S AND PASSENGER'S SIDES

Two (2) body equipment storage compartments shall be installed at the front of the body just behind the headache rack, one (1) each side of the apparatus. The dimensions shall be approximately: 30" wide, 43.5" high, and 14" deep. The compartments shall be constructed of .125" aluminum smooth plate on all exterior surfaces. Each compartment shall be equipped with a vertically hinged door with a single latch installed. The doors shall be equipped with gas operated door opening assistant cylinders.

The compartments shall be hinged at the rear.

TRANSVERSE COMPARTMENT

The upper portion of the front vertical compartments shall be transverse. The dimensions shall be 18" wide x 21.5" high x 88" deep.

There shall be a lift up door accessing the transverse compartment. It shall be approximately 50" long x 18" wide.

SIDE UPPER BODY COMPARTMENTS

There shall be two (2) side upper body compartments, one (1) each side. The dimensions shall be approximately: 48" wide, 21.5" high, and 14" deep. The compartments shall be constructed of .125" aluminum smooth plate on all exterior surfaces. Each compartment shall be equipped with a horizontally hinged drop down door with a latch installed. The doors shall be equipped with retaining straps. The hinge shall be at the bottom edge of the compartment.

SIDE BODY COMPARTMENTS, REAR BODY -- DRIVER'S AND PASSENGER'S SIDES

Two (2) body equipment storage compartments shall be installed at the rear of the body just behind the side upper body compartments, one (1) each side of the apparatus. The dimensions shall be approximately: 32" wide, 43.5" high, and 14" deep. The compartments shall be constructed of .125" aluminum smooth plate on all exterior surfaces. Each compartment shall be equipped with a vertically hinged door with a single latch installed. The doors shall be equipped with gas operated door opening assistant cylinders. Each vertical compartment shall have one (1) fixed shelf. The compartment floors shall be lined with ventilated vinyl floor liner.

The compartments shall be hinged at the rear.

The compartments shall be equipped with:

- a swing door with latch installed
- key type door locks.
- dual gas operated door opening assistant cylinders.
- a white LED strip light that is automatically controlled by a door activated switch.
- a louvered vent

Compartment Matting shall be installed in the compartment. It shall be black in color and lock together design.

The actual door openings shall be approximately 3" smaller in dimension.

COMPARTMENTATION TOPSIDE

There will be integral lift up door style compartments on the driver's and passenger's side of the body upper body. The compartments shall be 14" wide x 110" long, and 8" high.

The compartment shall be on the top of the vertical side surface, and have a lift up door with latch on the outside, on the vertical surface.

The same style of door handle as used on the side compartments will be used on this compartment.

The compartments shall be equipped with:

- a swing door with latch installed
- key type door locks.
- a white LED strip light that is automatically controlled by a door activated switch.
- a louvered vent

Compartment Matting shall be installed in the compartment. It shall be black in color and lock together design.

The actual door openings shall be approximately 3" smaller in dimension.

C-4466 RSQ SQUAD BODY PAINT

The exterior surface of all body skins, compartments, and trays shall all be Painted.

Color: to be determined at preconstruct

The surface shall be sanded, acid washed, acid primed, primed, and top coat painted in accordance with the paint manufacturers specifications.

The interior of all compartments shall be coated in Zolatone textured coating.

There shall be diamond plate covering the lower half front face of the body.

All Exterior welds shall be ground down, and filled with body filler.

Aftermarket Paint Warranty covers defects in the applied paint for up to three years or 36,000 miles, whichever comes first.

C-3593 UNDER BODY COMPARTMENT -- REAR CENTER

An under body equipment storage compartment shall be installed under the flatbed surface located in the center rear of the apparatus. The compartment shall be between the vertical body beams, upper floor surface, and an aluminum lower floor area. The compartment shall be equipped with a hinged drop down door with dual latches installed. The floor shall be constructed of aluminum.

The exterior dimensions shall be approximately: 108" Deep

C-4692 FULL LENGTH HOSE TRAY DIVIDER

There shall be one (1) full length hose tray divider installed in the hose tray. The divider will be adjustable side to side. This option covers up to a 16"x10"x72" tray.

C-4280 FULL LENGTH HOSE TRAY DIVIDER

There shall be one (1) full length hose tray divider installed in the hose tray. The divider will be adjustable side to side. This option covers up to a 16"x10"x72" tray.

C-4670 NO-- REAR FOLD DOWN STEP

There shall be no rear fold down step installed.

C-3614 REAR PULL OUT STEP

There shall be a rear "Pull-Out-Fold-Down" step located at the rear of the apparatus, step shall be stowed in a pocket under the rear of the unit. Storage pocket shall be fabricated to allow easy access to deploying for operation.

C-4559 SLIDE OUT TRAY, 1000 LBS, 16" X 82" TRANSVERSE

There shall be a 1000 lbs max capacity slide out tray installed. Dimensions shall be 16" wide by 82" long. The tray shall slide out both sides of the body.

*This option will delete the installation of vinyl matting in the location the tray is mounted.

Location: Front transverse compartment.

C-4209.2 ADJUSTABLE SHELF

There shall be 4 adjustable shelf located in the *** Enter Location Below*** compartment constructed of smooth aluminum. There shall be adjustable tracking mounted to the wall of the compartment to allow height adjustment of the shelf. The shelf shall be no larger than 4 feet wide by 2 feet deep. The tracking shall be as long as possible to allow for max adjustment range of shelf.

QTY: 4

LOCATION: TBD at the preconstruct meeting

C-3797 NFPA COMPLIANCE

The fire apparatus shall be built to the purchaser's requirements stated in this specification in compliance with all state and federal highway safety requirements. The vehicle is designed to meet NFPA 1900.

Unless included in the specification, the customer will provide all the necessary equipment to comply with NFPA 1900.

C-5495 ELECTRIC FOAM FILL SYSTEM

There shall be a truck mounted FRC electric foam fill system capable of re-filling the Class B foam tank from a 5 gallon container sitting on the ground next to the apparatus. It shall consist of a fill pump (permanently installed on the apparatus), fill hose, and pipe (for insertion into the container). The inlet of the foam tank shall be 1.5".

SP-2171 LOW WATER LEVEL

A light will be provided in the center console to indicate when the water level in the water tank is at 100 gallons.

This is used to reduce the water on the apparatus to enter the parking garage.

C-3632.3 WATER TANK SPECIFICATIONS

The water tank shall have a capacity of 225 gallons.

The water tank shall be constructed of black polypropylene, poly-welded and tested inside and out. The tank manufacturer shall define the floor, top, sides, ends, and baffles material thickness. The tank shall carry a lifetime warranty.

The transverse and longitudinal swash partitions shall be interlocked and welded to each other as well as to the walls of the tank. The partitions shall be designed and equipped with vent holes to permit air and liquid movement between compartments. The tank covers shall be welded on top and bottom, 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 water tank.

The water tank manufacturer shall certify the capacity of the water tank prior to delivery of the apparatus. This capacity shall be recorded on the manufacturer's data plate.

The water tank shall be rectangular in shape and engineered for a low center of gravity.

The water tank construction shall conform to applicable NFPA standards.

A 1.5" drain plug shall be installed in the bottom of the water tank under P/S wheel well for water tank draining and flush-out of debris.

The fill tower shall incorporate a vent and overflow system shall be designed into the water tank. The system shall include a 3" diameter pipe that functions both as an air vent while emptying the tank and as an overflow when filling the tank. The overflow shall discharge excess water below the frame rails of the vehicle.

The tank fill tower shall be located in the driver's side rear corner of the water tank.

The water tank shall be equipped with translucent water level sight gauge in the rear wall of the tank.

C-3660 WATER TANK GAUGE

One (1) Class 1 "Intelli-Tank" water tank level gauge shall be installed on pump panel. The tank level gauge shall indicate the liquid level on an easy to read LED display and show increments of 1/8 tank. A pressure transducer shall be mounted on the outside of the tank in an easily accessible area.

Cab Mounted -

One (1) Class 1 "Intelli-Tank" mini water tank level gauge shall be installed in the cab or center console. The tank level gauge shall indicate the liquid level on an easy to read LED display and show increments of 1/4 tank.

C-5622.2 HYDRAULICALLY DRIVEN WATER PUMP

Darley model number 1-1/2AGH single stage, hydraulically driven, centrifugal portable pump shall be provided. The PTO and gear driven pump shall meet the following performance requirements:

180 GPM @ 150 PSI
100 GPM @ 200 PSI
50 GPM @ 250 PSI

The pump shall have one (1) 2" NPT inlet. A 2" NPT discharge shall be supplied. The pump shall be designed to operate in the same rotation direction as the engine.

The pump shall be constructed with the following features:

~~Cast solid bronze renewable double labyrinth impeller seal rings. A~~

balanced bronze alloy impeller with stainless steel shaft, splined to the pump shaft for a precision fit.

The impeller shall have a double seal ring designed to eliminate end thrust. Oversized deep groove radial ball bearings shall be utilized for longer life. All openings shall be protected from road dirt and water with oil seals and water slinger.

The precision ground, corrosion resistant stainless steel splined pump shaft shall be designed to resist wear, vibration, corrosion and withstand the effects of torque. Heat treated, helical cut alloy steel gears shall be utilized to drive the pump.

The pump shall be furnished with a Darley maintenance free mechanical seal. The mechanical seal shall be a non-contacting, non-wearing dual seal design. Seal shall be a Silicon Carbide Mechanical seal with welded springs. The stationary face of mechanical seals shall be made from Silicon Carbide, and be extremely hard and of a heat dissipative material, which resists wear and dry running damage much better than conventional Ni-resist and Tungsten Carbide materials

The pump casing shall be constructed from high-strength fine grain aluminum alloy with an aluminum alloy gear case and engine adapter.

The pump shall carry a six (6) year parts replacement warranty including three (3) years of parts and labor.

C-5832 AUXILLIARY FIRE PUMP MOUNTING PROVISIONS

The auxiliary fire pump shall be installed at the center rear of the body. The sub-structure shall have welded in mounting sub-plates between the structural members.

C-3700.4 FIRE PLUMBING ENCLOSURE

There shall be an insulated enclosure surrounding the fire pump plumbing. The enclosure shall be fabricated of aluminum. removable roof access panel shall be installed for servicing of the plumbing.

There shall be a vinyl cover installed covering the rear opening, full length and height. It shall be fixed mounted to the pump cover on the top, and have velcro on the sides and bottom.

If so equipped, the engine and pump control panel shall be provided at the rear of the vehicle. The following shall be located at the operator's position:

- 2.5" discharge pressure gauge
- start/stop control
- throttle control
- low oil pressure warning light
- tachometer (if so equipped)

The plumbing enclosure shall be mounted at the rear of the body.

C-3699 PUMP CONTROL PANEL

A pump panel enclosure shall be installed. The enclosure shall be fabricated of aluminum with a DA finish, bolted in place with a pump instrument panel installed.

An engine and pump control panel shall be installed in the pump panel enclosure. The following shall be on the pump panel:

- 2.5" discharge pressure gauge
- start/stop control
- throttle control
- low oil pressure warning light

The pump control panel shall be installed at the passenger's side rear corner of the body.

C-3889 NO PUMP FUEL

No Pump Fuel

C-4256 FLUSH MOUNT PLUMBING

The plumbing at the rear of the bed shall not protrude beyond the perimeter of the deck surface.

C-3706 STAINLESS STEEL PLUMBING SYSTEM

The auxiliary fire pump plumbing system shall be built mostly of stainless steel piping, fittings, and connections. Victaulic couplings shall be installed to permit flexing of the plumbing system and allow for quick removal of piping or valves for service. Tank connections and remote plumbing shall use high-pressure flexible piping. Flexible hose

couplings shall be threaded stainless steel or Victaulic connections.

This shall include valves and hose threads.

C-4732 PLUMBING VALVE UPGRADE

Valves 1" and larger used in the plumbing system shall be serviceable, 3-piece brass, quarter-turn, full-flow type.

C-5247 HOSE THREADS

The hose threads shall be National Pipe Straight Hose thread (NPSH) on all base threads on the apparatus intakes and discharges, unless otherwise specified.

C-3715 WATER TANK FILL AND COOLING LINE

One (1) 1" fire pump to water tank refill and bypass cooler line shall be provided. The pump to tank valve shall be a 1" full flow quarter turn ball valve with local control handle. A 1" flex hose shall be installed to the water tank.

C-3708 2-1/2" DISCHARGE -- REAR

One (1) 2-1/2" discharge shall be installed at the rear pump area, controlled by a quarter turn ball valve. The discharge shall have 2-1/2" NH male hose threads. The discharge shall be equipped with 2-1/2" female x 1-1/2" chrome plated brass reducer, 1-1/2" chrome cap and cable.

C-3710 1-1/2" DISCHARGE -- REAR

one 1-1/2" discharge shall be installed on the rear pump area, controlled by a quarter turn ball valve with local control handle. The discharge shall have 1-1/2" NPT x 1-1/2" NH male hose threads and cap.

C-5044 NO 3/4" DISCHARGE

NO --3/4" Discharge

C-3711 1-1/2" PRE-CONNECT DISCHARGE -- REAR HOSEBED

One (1) 1-1/2" pre-connect discharge shall be installed on the rear hose bed, controlled by a quarter turn ball valve with direct local control handle in pump area. The discharge shall have 1-1/2" NH male hose threads.

The valve shall be on the manifold, with a chrome swivel feed line mounted to the rear of the tray.

C-4016 HOSE REEL

One (1) Hannay aluminum hose reel shall be installed. The reel shall have leak proof ball bearing swing joint, adjustable friction brake, electric 12 volt rewind and manual crank rewind provisions.

The reel shall be mounted above the water pump and plumbing, center of the rear flat-bed body. There shall be a custom aluminum platform to support it.

One (1) 1" discharge shall be piped from the fire pump to each hose reel with flexible high pressure hose. The quarter turn ball valve shall be on manifold.

The hose reel shall be provided with a Hannay top mounted stainless steel roller assembly.

C-3855 HOSE REEL HOSE

One (1) 100' foot length of 3/4" water hose shall be installed on the hose reel. The hose shall be equipped with aluminum couplings and have a 300 PSI working pressure.

C-3695 FOAM SYSTEM

A FoamPro part number S106-1600/2.0 electronic foam system shall be provided. The system shall be designed for use with Class A foam concentrate. The foam proportioning operation shall be designed for direct measurement of water flows and shall remain consistent within the specified flows and pressures. The system shall be capable of accurately delivering foam solution as required by applicable sections of the NFPA standards.

The system shall be equipped with a control module suitable for installation on the pump panel. There shall be a microprocessor incorporated within the motor driver that shall receive input from the system's flow meter, while also monitoring the foam concentrate pump output. The microprocessor shall compare the values to ensure that the desired amount of foam concentrate is injected onto the discharge side of the fire pump. A "foam capable" paddlewheel-type flow meter shall be installed in the discharge side of the piping system.

The control module shall enable the pump operator to:

1. Activate the foam proportioning system
2. Select the proportioning rates from 0.1% to 1.0%
3. See a "low concentrate" warning light flash when the foam tank level becomes low and in two (2) minutes, if the foam concentrate has not been added to the tank, the foam concentrate pump shall be capable of shutting down.

A 12-volt electric motor driven positive displacement plunger pump shall be provided. The pump capacity range shall be 0.1 to 1.7 GPM at 200 PSI with a maximum operating pressure of 400 PSI. The system shall draw a maximum of 30 amps at 12 volts. The motor shall be controlled by the microprocessor which shall be mounted to the base of the pump. It shall receive signals from the control module and power the 1/3 horsepower electric motor in a variable speed duty cycle to ensure that the correct proportion of concentrate is injected into the water stream.

A full flow check valve shall be provided in the discharge piping to prevent foam contamination of the fire pump and water tank. A 5 PSI opening pressure check valve shall be provided in concentrate line.

Components of the complete proportioning system as described above shall include:

1. Operator control module
2. Paddlewheel flow meter
3. Pump and electric motor/motor driver
4. Wiring harnesses
5. Low level tank switch
6. Foam tank
7. Foam injection check valve
8. Main waterway check valve
9. Flowmeter and tee with NPT threads.

The foam system shall be installed and calibrated to manufacturer's requirements. In addition the system shall be tested and certified by the apparatus manufacturer to applicable NFPA standards.

The foam system design shall be tested and pass environmental testing in accordance with SAE standards. An installation and operation manual shall be provided for the unit. The system shall have a one (1)

year limited warranty by the foam system manufacturer.

The FoamPro 1600 Series foam system shall be provided with a six (6) foot control cable from the controller to the foam pump assembly. The FoamPro 1600 Series foam system shall be provided with a standard pump panel mounted FoamPro control head.

A FoamPro part number 2660-0032 brass flowmeter shall be provided. The flowmeter shall be installed in the "foam capable" discharge line. The flowmeter shall have maximum accuracy between the flow range of 15 GPM and 520 GPM and be capable of operation between 5 GPM to 625 GPM. The tee shall have NPT and Victaulic inlet and outlets connections.

A FoamPro part number 6032-0018 instruction and system rating label shall be provided. The label shall display information for a FoamPro 1600 Series foam system and shall meet applicable sections of the NFPA standards. A FoamPro foam system schematic label shall be installed on the pump panel near foam controls. The label shall be a diagram of the FoamPro 1600 foam system layout and shall meet applicable sections of the NFPA standards.

A 1" fitting shall be provided on the foam tank for connection of the foam tank to the suction side of the foam system.

C-3661 FOAM TANK SPECIFICATIONS

The Class A foam tank shall have a capacity of 10 gallons.

The foam concentrate tank shall be provided with a fill pipe having a volume of not less than 2 percent of the total tank volume. The filler opening shall be capped with a sealed air-tight threaded cover. The fill opening shall be designed to incorporate a removable screen and shall be located so that foam concentrate from a five (5) gallon container can be dumped into the tank.

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

withdrawal.

A color coded label or visible permanent marking that reads "CLASS A -- FOAM TANK FILL" shall be placed at or near the foam concentrate tank fill opening. An additional label shall be placed at or near any foam concentrate tank fill opening stating the type of foam concentrate the system is designed to use.

Any restrictions on the types of foam concentrate that can be used with the system shall also be stated, along with a warning message that states "WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM."

A 3/4" fitting shall be provided on the foam tank for connection of the foam tank to the suction side of the foam system.

A 3/4" diameter connection, piping, and valve shall be installed for the foam tank for draining purposes.

C-3670 FOAM TANK DRAIN AND VALVE PROVISIONS

A 1" diameter connection, piping, and valve shall be installed for the foam tank for draining purposes. Drain shall discharge underneath the bed.

*Not subject to valve upgrade

SP-2175 REAR WARNING BEACONS, UPPER

There shall be two (2) Whelen rota-beam 416 series rotating upper LED warning lights installed at the top rear of the apparatus, one (1) each side.

SP-2176 A PILLAR SPOT LIGHTS

There shall be two (2) A Pillar Unity X335Series XLED 6" adjustable LED Spotlights installed on the cab, one (1) each side.

They shall be Unity U-8547.

SP-2177 COMMAND LIGHT

The apparatus will be equipped with a Whelen, Model L31HAF, amber LED beacon. The light will be installed rear driver's side of headache rack.

The light will be used for FAA amber requirement for airport operation, and may not be operated off airport grounds.

The light will be activated by a separate switch labeled "AIRPORT LIGHT"

C-3764 BRAKE, TURN, TAIL LIGHTS

Two (2) Whelen M6 Series Model M6BTT 4-5/16" x 6-3/4" brake, turn, tail lights with M6FC chrome flanges shall be provided. The warning lights shall incorporate Linear Super-LED and Smart LED technology. The lighthouse configuration shall consist of 18 red Super-LEDs and a clear optic polycarbonate lens. The lighthouses shall be surface mountable via two screws.

The lighthouses shall utilize an optic collimator and a chrome vacuum metalized reflector for maximum illumination. The lighthouse shall include 164 flash patterns including: a variety of CA Title 13 compliant, sinkable, left/right, top/bottom, in/out, and steady burn. The lighthouses shall have the Whelen exclusive NERM (Non-Emergency Recognition Mode) feature.

The lens/reflector assembly shall be wet sealed and resistant to: water, moisture, dust, and other environmental conditions. The outer lens shall have a hard coating applied to increase strength and ensure longevity. The light engine shall be installed at the rear of the unit and be completely sealed. The pc board shall be conformal coated for additional protection.

The lights shall be furnished with five 6" wire pigtails, a Santoprene rubber gasket and the #M6FC chrome flanges shall be included for installation.

C-4535 WHELEN CORE

A Whelen CenCom Core system shall be provided. This system shall control the warning and scene lights as directed by the fire department.

C-3747 SIREN SPEAKER

One (1) Whelen Model #SA315P Projector Series siren speaker shall be provided with bracket. The 100 watt siren speaker shall be designed in a black nylon composite housing with 123 decibel rating.

Location shall be: Behind the front grille.

C-5822 SIREN CONTROLLER

The control head shall be the CCTL7. It is a 3 Section Control Head with WeCanX Technology, 21 Push-Buttons, a 4-Position Slide Switch, and a microphone with extension Cable.

C-5666 LIGHTBAR

A Whelen WeCanX Liberty Super-LED NFPA lightbar shall be installed. The 54" lightbar shall be designed to meet the minimum clearing requirements for Zone A Upper. The internal components of the lightbar shall be housed within a two piece extruded aluminum base/top. The outer shell shall be clear optic polycarbonate lenses designed to maximize light output and shield against environmental elements.

The lightbar shall utilize snap-in brackets to hold in the lighthouse. The brackets shall give the end user the ability to make quick repairs. The lightbar shall have all solid state components. The lightbar shall have two wire harnesses exiting the unit: one (1) 17 conductor 22 gauge control cable which controls all internal light functions; and one (1) 2 conductor 10 gauge cable for main power and ground. Each cable shall be 15' long.

The lightbar shall have four (4) red Linear Super-LED corner modules to provide off angle protection for the front and rear of the vehicle. Each corner module shall consist of twelve (12) Super-LEDs mounted within a vacuum metalized parabolic reflector. The corner module shall also utilize an optic collimator for maximum light output. The twelve (12) LEDs shall be mounted in one straight line.

The lightbar will have an integrated Opticom Traffic Emitter installed.

The lightbar shall have the V2V option integrated for potential activation.

The lightbar shall include clear "Take Down" and "Alley Lights".

The lightbar shall have an amber "Traffic Advisor" built into the rear portion of the lightbar.

C-5699.2 CUSTOM LIGHTBAR

The light head color layout of the lightbar shall be customized from the standard option.

The built-in Opticom emitter shall be in the center of the lightbar.

The lightbar will include the following:

One (1) red flashing LED module in the driver's side fourth rear facing position.

One (1) red flashing LED module in the driver's side third rear facing position.

Open in the driver's side second rear facing position.

One (1) red flashing LED module in the driver's side first rear facing position.

One (1) red flashing LED module in the driver's side rear corner position.

Open in the driver's side end position.

One (1) red flashing LED module in the driver's side front corner position.

Open in the driver's side first front position.

One (1) red flashing LED module in the driver's side second front position.

Open in the driver's side third front position.

One (1) red flashing LED module in the driver's side fourth front position.

One (1) 795 LED traffic light controller set to national standard high priority in the center positions.

One (1) red flashing LED module in the passenger's side fourth front position.

Open in the passenger's side third front position.

One (1) red flashing LED module in the passenger's side second front position.

Open in the passenger's side first front position.

One (1) red flashing LED module in the passenger's side front corner position.

Open in the passenger's side end position.

One (1) red flashing LED module in the passenger's side rear corner position.

One (1) red flashing LED module in the passenger's side first rear facing position.

Open in the passenger's side second rear facing position.

One (1) red flashing LED module in the passenger's side third rear facing position.

One (1) red flashing LED module in the passenger's side fourth rear facing position.

There will be clear lenses included on the lightbar.

The following switches may be installed in the cab on the switch panel to control the lightbar: a switch to control the flashing LED modules. the traffic light controller will be activated by a cab switch with emergency master control, and there will be no momentary activation switch.

The red flashing LED modules in the front and rear positions may be load managed when the parking brake is applied.

C-4563 LIGHTBAR MOUNT CAB ROOF, NO GUARD

The lightbar shall be mounted on the cab roof. The light bar shall be properly sealed and watertight.

C-3750.2 NFPA WARNING LIGHTS

ZONE A -- LOWER FRONT WARNING LIGHTS

Two (2) Whelen M-6RC Series 4" x 6" warning lights shall be installed in the lower front area of the cab. The warning lights shall incorporate Linear-Super LED and Smart LED technology. Each lighthouse shall have six (6) RED Super-LEDs with a clear non-optic polycarbonate lens for maximum light spread. Each lighthouse assembly shall have internal flasher, eleven (11) Scan-Lock flash patterns, including steady burn and synchronize power functions. The lighthouses shall have a conformal coated circuit board for moisture protection. The lights shall be mounted in a chrome plastic flange bezel assembly.

COLOR: RED LED/CLEAR LENS

ZONE B AND D -- INTERSECTION LIGHTS

Two (2) Whelen M-6RC Series 4" x 6" warning lights shall be installed. The warning lights shall be installed in cab fenders, one (1) each side, as far forward as possible. The warning lights shall incorporate Linear-Super LED and Smart LED technology. The lighthouse shall have six (6) RED Super-LEDs with a clear non-optic polycarbonate lens for maximum light spread. The lighthouse assembly shall have internal flasher, eleven (11) Scan-Lock flash patterns, including steady burn and synchronize power functions.

COLOR: RED LED/CLEAR LENS

ZONE B AND D -- LOWER REAR WARNING LIGHTS

Two (2) Whelen M-6RC Series 4" x 6" warning lights shall be installed. The warning lights shall be located one (1) each side lower rearmost side body area as space permits. The warning lights shall incorporate Linear-Super LED and Smart LED technology. The lightheads shall have six (6) RED Super-LEDs with a clear non-optic polycarbonate lens for maximum light spread.

COLOR: RED LED/CLEAR LENS

ZONE B AND D -- UPPER SIDE REAR WARNING LIGHTS

Two (2) Whelen M-6RC Series Model #M6R 4" x 6" warning lights and a chrome flange shall be upper horizontal compartment door. The warning lights shall incorporate Linear Super-LED and Smart LED technology. The lightheads shall have six (6) RED Super-LEDs with a clear non-optic polycarbonate lens for maximum light spread.

COLOR: RED LED/CLEAR LENS

ZONE C -- UPPER REAR WARNING LIGHTS

Two (2) Whelen M-6RC Series Model #M6R 4" x 6" warning lights and a chrome flange shall be installed in the upper rear body panel. The warning lights shall incorporate Linear Super-LED and Smart LED technology. The lightheads shall have six (6) RED Super-LEDs with a clear non-optic polycarbonate lens for maximum light spread.

COLOR: RED LED/CLEAR LENS

ZONE C -- LOWER REAR WARNING LIGHTS

Two (2) Whelen M-6RC Series 4" x 6" warning lights shall be installed. The warning lights shall be located one (1) each side, rover the wheel wells. The warning lights shall incorporate Linear-Super LED and Smart LED technology. The lightheads shall have six (6) RED Super-LEDs with a clear non-optic polycarbonate lens for maximum light spread.

COLOR: RED LED/CLEAR LENS

C-4070 GROUND LIGHTS - CHASSIS - LED STRIPS - 4DOOR

Four (4) LED ground strip lights shall be installed under the cab step area in compliance with NFPA standards, two (2) on each side of the apparatus, wired to the Cencom, and the chassis interior lights.

C-3765 BACK-UP LIGHTS

Two (2) Whelen M-Series, 4" x 6" rear LED back-up lights shall be installed.

C-3528.2 BATTERY CHARGER AND 120 VOLT SHORE POWER RECEPTACLE

A Kussmaul Autocharge 1000, Model 091-215-12, high output automatic battery charger shall be provided. The battery charger shall be wired to the 12 volt battery system. The unit shall be mounted in a clean, dry area accessible for service and/or maintenance. It shall be wired to the specified shore power receptacle.

It shall include a compatible Digital Status Display Center.

It shall also include 15 amp "auto-eject" shore power receptacle with hinged weatherproof cover and an enclosure for protection from dirt and damage. The shore power plug shall be "ejected" when the chassis' engine starter is engaged and the receptacle shall be wired to any 120 volt A/C equipment requiring shore power.

Location shall be: Rear body panel, d/s

Color of Digital Status Display Center and Auto Eject: YELLOW

C-3598 DOOR AJAR LIGHT

A "door ajar" warning light shall be installed on the center console. The light shall be flashing red LED light with a clear lens.

The door ajar light shall be activated by door ajar switches installed on every compartment door.

C-3777 FRONT CHEVRON STRIPING

There shall be alternating chevron striping installed across the front bumper where permitted. The chevron striping shall consist of 6" diamond grade in the following colors:

Colors to be determined at preconstruction meeting.

C-3779 REAR CHEVRON STRIPING

There shall be alternating chevron striping installed on the rear vertical body panel. The chevron striping shall consist of 6" diamond grade in the following colors:

Colors to be determined at preconstruction meeting.

C-3769 CUSTOM DOOR GRAPHICS

The apparatus shall be provided with FOUR (4) custom designed sign gold graphics, emblems, or seals. The installation shall be designed primarily with letters and numbers as specified. The purchaser shall approve of the design graphics prior to installation.

C-3766 CAB REFLECTIVE LETTERING

The cab lettering shall be Scotchlite reflective material, shaded in black. A quantity of up to fifty (50) three inch (3") letters shall be installed as directed by Fire Department.

****SKEETER BRUSH TRUCKS DOES NOT ORDER OR PROVIDE SIGN GOLD LETTERING OR LOGOS****

C-3771 CAB AND BODY STRIPING

The cab and body shall have a straight Scotchlite reflective stripe applied horizontally. The stripe shall be a 4" minimum in width and be applied horizontally around the cab and body in accordance with NFPA standards. The purchaser shall specify the color and location of the stripe.

C-4402 REMOVEABLE NUMBER PLATES

1 12" x 12" removable number plate shall be added to the graphics package. Locations will be determined in conjunction with the rest of the graphics package.

C-3525 BATTERY SWITCH - MASTER DISCONNECT

A rotary type master disconnect switch shall be provided in the cab within easy reach of the driver. The switch shall have a switch plate with Off/On label.

There shall be a GREEN indicator light in the center console indicating the power is "ON".

C-3759 ELECTRICAL ENCLOSURE

An electric enclosure for the 12 volt wiring shall be installed in the the apparatus. It shall have a removable panel or door to be able to access the components inside for maintenance purposes. It will be

mounted in a location predetermined by the factory, accessible to the end user. Size shall be pre-determined by the factory.

C-3758 BACK-UP ALARM

One (1) back up alarm shall be installed.

C-3763 LICENSE PLATE MOUNTING

There shall be mounting provisions for the front and rear license plates.

An LED license plate light shall be installed on the rear vertical wall of the body for the rear license plate.

C-3762 DOT IDENTIFICATION LIGHTS

All LED identification lights shall be installed on the vehicle as required by applicable highway regulations.

C-4429 REAR MUD FLAPS

The chassis shall be supplied with mud flaps with the manufacturer's logo. The mud flaps shall be installed behind the rear wheels.

C-3570 SKEETER EMBLEMS

Three (3) Skeeter emblems will be affixed to the cab and body.

C-4022 DRAWINGS

There shall be design drawings submitted to the customer prior to the pre-construct conference. The CAD drawings shall include all sides of the apparatus. The customer shall agree to the drawings reflecting the correct apparatus design and layout prior to construction.

C-3760 ELECTRICAL HARNESS & WIRING

The following describes the low voltage electrical system on the apparatus including all panels, electrical components, switches and relays, wiring harnesses and other electrical components. The apparatus manufacturer shall conform to the latest Federal DOT standards, current automotive electrical system standards and the applicable requirements of the NFPA.

Wiring shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for which the

circuit is protected. Voltage drops shall not exceed 10 percent in all wiring from the power source to the using device. The wiring, 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. Exposed wiring shall be run in a loom with a minimum 289 degree Fahrenheit rating. Wiring looms shall be properly supported and attached to body members. Electrical conductors shall be constructed in accordance with applicable SAE standards, except when good engineering practice requires special construction.

All wiring connections and terminations shall provide positive mechanical and electrical connections and be installed in accordance with the device manufacturer's instructions. When wiring passes through metal panels, electrical connections shall be secured with mechanical type fasteners and rubber grommets

Wiring between cab and body shall be split using connectors or enclosed in a terminal junction panel allowing body removal with minimal impact on the apparatus electrical system. Connections shall be crimp-type with heat shrink tubing with insulated shanks to resist moisture and foreign debris such as grease and road grime. Weather resistant connectors shall be provided throughout the system.

Electrical junction or terminal boxes shall be weather resistant and located away from water spray conditions. When required, automatic reset breakers and relays shall be housed in the main body junction panel.

There shall be no exposed electrical cabling, harnesses, or terminal connections located in compartments, unless enclosed in an electrical junction box or covered with a removable electrical panel. Wiring shall be secured in place and protected against heat, liquid contaminants and damage.

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

The electrical system shall include the following:

Electrical terminals in weather exposed areas shall have a non-conductive grease or spray applied. All terminal plugs located outside of the cab or body shall be treated with a corrosion preventative compound.

All electrical wiring shall be placed in a protective loom or be harnessed.

Exposed connections shall be protected by heat shrink material and sealed connectors.

Large fender washers shall be used when fastening equipment to the underside of the cab roof and all holes made in the roof shall be caulked with silicone.

Electrical components installed in exposed areas shall be mounted in a manner that will not allow moisture to accumulate inside.

A coil of wire must be provided behind an electrical appliance to allow them to be pulled away from mounting area for inspection and service work.

All lights in a weather exposed area that have their sockets shall have corrosion preventative compound added to the socket terminal area.

All wiring shall be hidden, enclosed, or protected under the body in protective material, or within the apparatus body components. In addition, split loom conduits shall be installed and enclosed, suitably secured and protected against heat and physical damage.

C-3780 CAPACITIES PLACARD

The apparatus shall have a reflective placard that provides the following information:

- Water Tank Capacity
- Pump Capacities
- NWCG Typing
- Skeeter Contact Information

C-3474 CHASSIS PREPARATION

The chassis cab shall be "prepped" for fire apparatus production as follows:

- a) Wash and clean chassis
- b) Weight chassis for NFPA reports
- c) Quality control check in.
- d.) Fuel

C-3630 FINAL ASSEMBLY AND APPARATUS FINISHING PREP SPECIFICATIONS

The apparatus shall be assembled in a high quality and controlled environment. The fit, form, and finish of the body shall be to the highest level fire apparatus manufacturing standards. Upon completion, the apparatus shall be ready for final inspection and road testing as required herein.

C-3795 FIRE PUMP OPERATIONS TEST

The fire pump shall have an operational pump test performed by a Skeeter Emergency Vehicles technician with a run time of one (1) hour to confirm proper operations of all pump related components.

*** NOTE: ALL TESTING SHALL BE DONE AND PERFORMANCE OBSERVED BETWEEN SEA LEVEL AND 1000' ELEVATION.

*** HIGH ALTITUDE PERFORMANCE MAY NOT REPRESENT TESTING RESULTS SHOWN.

C-3796 ELECTRICAL LOAD ANALYSIS

A 12 volt electrical load analysis shall be performed in order to test response and stationary modes of electrical amp load.

C-3799 ROAD TEST

A road test will be conducted with the apparatus fully loaded and a continuous run of no less than ten (10) miles. During that time the apparatus will show no loss of power nor will it overheat. The transmission drive shaft or shafts and the axles will run quietly and be free of abnormal vibration or noise.

C-5863 SKEETER PARTS DISCLAIMER

Parts listed within the preceding options are subject to replacement due to discontinuation, obsolescence, or unavailability. Any replacement parts provided will be equivalent in functionality to the original parts. While every effort will be made to use parts from the same manufacturer, if a change in manufacturer is necessary or if an equivalent part becomes unavailable, the end user will be contacted prior to any substitution.

C-3800 APPARATUS WARRANTY SKEETER MANUFACTURED ITEMS

A five (5) year parts and labor warranty on items manufactured by Skeeter Emergency Vehicles and a ten (10) year warranty on the structural integrity of the body. For warranty issues please contact your local dealer or Skeeter Emergency Vehicle service center and request warranty from the service advisor at that location.

C-3761 ELECTRICAL HARNESS AND WIRING

All wiring shall be hidden, enclosed, or protected under the body in protective material, or within the apparatus body components. In addition, split loom conduits shall be installed and enclosed, suitably secured and protected against heat and physical damage.

C-4522 NFPA 1900 APPARATUS LABELING

Per NFPA a permanent label shall be mounted in the cab showing the following information:

A permanent label in the driving compartment shall specify the quantity and type of the following fluids used in the vehicle and tire information:

1. (1)
Engine oil
2. (2)
Engine coolant
3. (3)
Chassis transmission fluid
4. (4)
Pump transmission lubrication fluid
5. (5)
Pump priming system fluid, if applicable
6. (6)
Drive axle(s) lubrication fluid
7. (7)
Air-conditioning refrigerant
8. (8)
Air-conditioning lubrication oil
9. (9)
Power steering fluid
10. (10)
Cab tilt mechanism fluid
11. (11)
Transfer case fluid
12. (12)
Equipment rack fluid
13. (13)

CAFS air compressor system lubricant

14. (14)

Generator system lubricant

15. (15)*

Front tire cold pressure

16. (16)*

Rear tire cold pressure

17. (17)

Maximum tire speed ratings

The following FAMA Labels shall be installed, further described below.

FAMA Labels: 07,06,43,10,20,22,23,24,25,28,44,45,41,42,17

There shall be a label identifying the number of seat belted locations on the unit.

A final stage manufacturer shall install "hearing loss" potential warning labels on the vehicle in any areas or fixed equipment that produces excessive noise levels. (exhaust outlet, sirens and air horns shall not be required for such equipment.)

A warning label stating: "NO RIDING ON REAR OF APPARATUS" shall be installed on rear of the apparatus. The label shall be applied to the vehicle at the rear step area. The label shall warn personnel that riding in or on these areas, while the vehicle is in motion, is prohibited.

The below listed labels shall be installed on/in the apparatus. All label shall comply with NFPA 1900 Edition standards on location and design set in each standard.

(1) Fluid Data Label

(2) Safety Sign FAMA07, Seat Belt Use

(3) Safety Sign FAMA43, No Helmets Vehicle in Motion

(4) Pump Test Label

The following shall be installed or provided on the apparatus in accordance with NFPA 1900:

One (1) placard indicating fluid type and capacity shall be installed on

the apparatus

One (1) Label indicating height and weight of the apparatus shall be installed in a location visible to the driver.

One (1) Safety Sign, FAMA 06, which warns of the need to use a seatbelt while the vehicle is in motion.

One (1) Safety Sign, FAMA 10, which warns of the need secure all loose items in the cab while the vehicle is in motion.

One (1) Safety Sign, FAMA 24, which warns against riding on the vehicle while it is in motion.

One (1) Safety sign, FAMA 23, which warns of the proper climbing method, shall be visible to personnel entering the cab and at each designated climbing location on the body.

One (1) Safety sign, FAMA 25, which warns of the need for training prior to operating the apparatus, shall be located on the pump operator's panel.

One (1) Safety Sign, FAMA 43, warning not to wear helmets while vehicle is in motion shall be visible from each seat.

One (1) Indicator installed in the cab of the apparatus that when illuminated will indicate "Pump Engaged" and "OK to Pump" if the apparatus is designed to pump and roll the indicator shall be labeled "OK" to Pump and Roll"

There shall be handrails at each entrance to driving or crew compartment and each position where there are steps or ladders for climbing.

There shall be a set of tire pressure indicators installed on the valve stems of the wheels. The indicators shall show if the tire is at the correct pressure by showing a "Green" indicator on the valve stem. The indicator shall show "Red" when the pressure is incorrect.

There shall be a low voltage electrical monitoring system, audible and visual alarm when voltage becomes low.

Two (2) solid bottom wheel chocks shall be included with the apparatus.

All materials used for exterior surfaces designated as stepping, standing, and walking areas and all interior steps shall have a

minimum slip resistance in any orientation of 0.68 when tested wet using the English XL tester in accordance with the manufacturer's instructions or 0.52 when tested wet using the Brungraber Mark II tester in accordance with the manufacturer's instructions.

Rollover stability test results are available upon request.

The following equipment shall be furnished by the contractor:

- (1) Two solid bottom wheel chocks, mounted in readily accessible locations, each designed to hold the apparatus, when loaded to its GVWR, on a 15 percent grade with the transmission in neutral and the parking brake released
- (2) One set of tire tools, including a jack and a lug wrench, if a spare tire is carried on the apparatus

The following additional equipment shall be carried on the apparatus:

- (1) One of the following traffic warning devices:
 - (a) Five fluorescent orange traffic cones not less than 28 in. (711 mm) in height, each equipped with a 6" (152 mm) retroreflective white band no more than 4" (102 mm) from the top of the cone, and an additional 4 in. (102 mm) retroreflective white band 2 in. (51 mm) below the 6 in. (152 mm) band
 - (b) One reflective triangle kit
- (2) Five illuminated warning devices such as highway flares, unless the traffic cones or reflective triangles specified in 5.7.2(1) have illuminating capabilities
- (3) One traffic vest for each seating position, each vest to comply with ANSI/ISEA 207, Standard for High-Visibility Public Safety Vests, and to have a five-point breakaway feature that includes two at the shoulders, two at the sides, and one at the front
- (4) One approved, dry chemical portable fire extinguisher with a minimum capacity in accordance with the following:
 - (a) For a GVWR below 33,000 lb (15,000 kg), a 2A-10-B:C extinguisher

- (b) For a GVWR 33,000 lb (15,000 kg) and above, a 3A-40-B:C extinguisher
- (5) One first-aid kit

C-5428 PRE-CONSTRUCT CONFERENCE

The preconstruction meeting shall be held virtual through Microsoft Team. It shall be attended by the purchasing department, the apparatus sales dealer along with a representative from Skeeter Emergency Vehicles.

SP-0000 MID INSPECTION AT FACTORY

Three (3) Representatives from the purchaser and the dealer shall be present at Skeeter's manufacturing facility in Hillsboro, Tx for the mid review inspection of the apparatus. A factory representative will assist the purchaser with review of the specifications to confirm they match the apparatus.

C-4269 FINAL INSPECTION, MANUFACTURING PLANT

Three (3) Representatives from the purchaser and the dealer shall be present at Skeeter's manufacturing facility in Hillsboro, Tx for the final inspection of the apparatus. A factory representative will assist the purchaser with review of the specifications to confirm they match the apparatus.

Cost of transportation to and from the facility shall be the responsibility of the dealer.

*** NOTE, UNLESS PRIOR APPROVAL BY SKEETER BRUSH TRUCKS, FINAL INSPECTION AT THE PLANT IS MANDATORY ***

C-3790 DEMONSTRATION AND FAMILIARIZATION OF APPARATUS

The bidder shall demonstrate and familiarize the purchaser regarding the vehicle's operation. This shall include operation of chassis, major components, review of delivery information and documentation. This demonstration shall be completed at the manufacturing facility.

C-4340 DELIVERY DEALER PROVIDED

Delivery of the apparatus from the manufacture's plant to the customer shall be provided by the dealer.

*It is the dealer's responsibility to deliver all loose equipment not physically mounted to the apparatus.

C-3787 TERMS OF PAYMENT AND PREPAYMENT PROVISIONS

Terms of payment for the specified vehicle shall be only cash or equivalent on delivery and acceptance for the unit.

WARD NO SMOKE

No Smoke direct source diesel exhaust filtration system shall be provided and installed at customer location.

RADIO SYSTEM COMPONENTS (Harris, icom and Setcom)

One (1) L3 Harris XL-200M Multiband VHF/800 MHz Mobile Radio
One (1) L3Harris XL-185M 800 MHz Mobile Radio
Two (2) L3Harris XL-CH6H Vehicular Chargers
One (1) Icom IC-A220 Aviation Transceiver with MB-53 Mobile Mount Kit,
External Speaker & Antenna
Five (5) Console Mounting Brackets

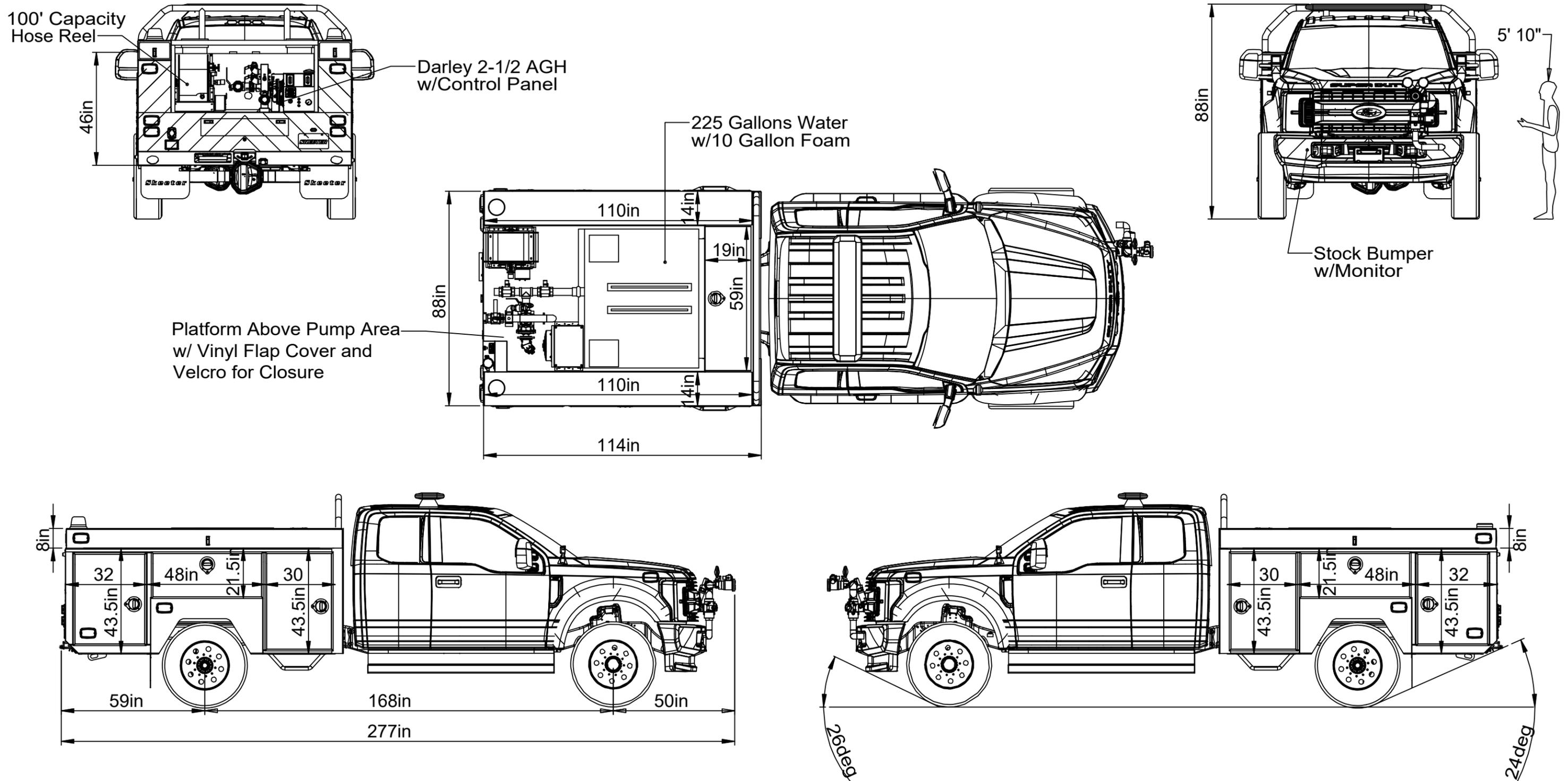
RESCUE TOOL

One (1) Holmatro PCT50 Combi Tool
Two (2) Batteries
One (1) Charger (12V or 110V)
One (1) On Tool Charging Cable
One (1) Mounting Bracket

HOSE

One (1) 25' Section of 3.00" Hose
One (1) 150' of 3/4" Hose - Pre-connect
One (1) 50' Section of 2.00" Hose - Highriser packs

DENVER INTERNATIONAL AIRPORT'S NWC6 TYPE 6 CUSTOM RESCUE SQUAD WILDLAND ENGINE SKEETER EMERGENCY VEHICLES



PROPERTY OF
SKEETER EMERGENCY VEHICLES

NOT FOR PRODUCTION. FEATURES AND DIMENSIONS ARE SUBJECT TO CHANGE

NOTE: FEATURES AND DIMENSIONS SHOWN ARE PRELIMINARY AND ARE SUBJECT TO CHANGE. MINOR DETAILS NOT SHOWN

PREPARED FOR:
DENVER INTERNATIONAL AIRPORT

DRAWN BY: ALONDRA P.
SPEC DATE: 12/27/2024

TITLE:
PRELIMINARY OVERVIEW

SPEC # 1273

SHEET 1 OF 1

EXHIBIT B

Additional Unit: Pierce Velocity 100' Ascendant Ladder Truck



FRONT RANGE FIRE APPARATUS

7600 Miller Court
Frederick, CO 80504

303-449-9911

1-800-334-9911

www.FrontRangeFire.com

DUANE DOUCETTE

303-304-6118

DuaneD@fronrangefire.com



FOR FURNISHING FIRE APPARATUS

January 05, 2026

City and County of Denver

The undersigned is prepared to manufacture for you, upon an order being placed by you, for final acceptance by Front Range Fire Apparatus., at its home office in Frederick, Colorado, the apparatus and equipment herein named and for the following prices:

(1) Pierce Velocity 100' Ascendant Midmount **\$2,747,100.00**
HGAC FS12-23 per attached component list
Delivery is approximately 46.0 to 49.0 Months

Payment Due at factory final inspection

Total \$ _____

Said apparatus and equipment are to be built and shipped in accordance with the specifications hereto attached, delays due to strikes, war, or intentional conflict, failures to obtain chassis, materials, or other causes beyond our control not preventing, within about 46 to 49 months after receipt of this order and the acceptance thereof at our office at Frederick, Colorado, and to be delivered to you Denver, CO.

The specifications herein contained shall form a part of the final contract, and are subject to changes desired by the purchaser, provided such alterations are interlined prior to the acceptance by the company of the order to purchase, and provided such alterations do not materially affect the cost of the construction of the apparatus.

The specification for fire apparatus conforms with all Federal Department of Transportation (DOT) rules and regulations in effect at the time of bid, and with all National Fire Protection Association (NFPA) Guidelines for Automotive Fire Apparatus as published at the time of bid, except as modified by customer specifications. Any increased costs incurred by first party because of future changes in or additions to said DOT or NFPA standards will be passed along to the customers as an addition to the price set forth above. Unless accepted within 30 days from date, the right is reserved to withdraw this proposition.

Due to global supply chain constraints, any delivery date contained herein is a good faith estimate as of the date of this order/contract, and merely an approximation based on current information. Delivery updates will be made available, and a final firm delivery date will be provided as soon as possible.



FOR FURNISHING FIRE APPARATUS

Persistent Inflationary Environment:

If the Producer Price Index of Components for Manufacturing [www.bls.gov Series ID: WPUID6112] ("PPI") has increased at a compounded annual growth rate of 5.0% or more between the month Pierce accepts our order ("Order Month") and a month 14 months prior to the then predicted Ready For Pickup date ("Evaluation Month"), then pricing may be updated in an amount equal to the increase in PPI over 5.0% for each year or fractional year between the Order Month and the Evaluation Month.

The seller will document any such updated price for the customer's approval before proceeding and provide an option to cancel the order.

CITY AND COUNTY OF DENVER

FRONT RANGE FIRE APPRATUS.

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: SALES REPRESENTATIVE



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YOU CHOOSE
PIERCE.



A LOT'S RIDING ON YOUR INVESTMENT.

The safety of firefighters and families, the security of property and the well-being of the entire community depend on your decision. Lives and reputations ride on your investment. Make sure help is always on the way.

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- Staffed by 7 sales professionals with 150 years of combined experience
- State-of-the-art service center employs a team of highly trained and certified technicians
- Mobile services and a full line of parts and equipment

Untouchable Fire Apparatus Expertise

- Over 30,000 custom chassis built
- More than 30 patents attributed to our continued investment in research, development and safety
- Thousands of years of cumulative experience
- First single-source manufacturer of custom fire apparatus in North America to achieve ISO 9001 certification
- Only manufacturer to have third party, Underwriters Laboratories certification on the entire apparatus

Unshakable Stability

- Rock-solid financials as an Oshkosh Corporation Company
- Oshkosh named a World's Most Ethical Company by Ethisphere Institute
- Recognized as a 2016 Best Governance, Risk, and Compliance Program by NYSE Governance Services
- Complete transparency of a public traded company
- Greater strength from shared engineering and technology across all of Oshkosh Corporation
- With over 100 years of history and numerous industry-first contributions, we're not going anywhere
- America's Best Large Employers list by Forbes



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PIERCE



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EMPLOYEES
WORLDWIDE**

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CERTIFICATION**

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PATENTS**

OSHKOSH



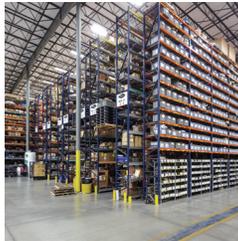
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**24/7
RESPONSE**

FRONT RANGE
FIRE APPARATUS



VOLUNTEER & COMBINATION
OFFICERS SECTION

Pierce leads the industry in sponsorships that support families of fallen firefighters, recognize outstanding achievement and further the education and safety of the fire service.

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Pierce Manufacturing Inc., An Oshkosh Corporation Company
P.O. Box 2017, Appleton WI 54912-2017 USA



Specifications, descriptions and illustrative material in this literature are as accurate as known at the time of publication, but are subject to change without notice. Illustrations may include optional equipment and accessories and may not include all standard equipment. All measurements are nominal values.

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P-0108-SLLSTBLTYSS-FRNTRNG 1/17



Option List

1/5/2026

Customer: Denver, City and County-DIA
Representative Doucette, Duane
Organization: Front Range Fire Apparatus, Ltd
Requirements Manager:
Description: Ascendant Mid Mount, Velocity
Body: Aerial, 100AAT, Alum Body
Chassis: Velocity Chassis, 100AAT

Bid Number: 1384
Job Number:
Number of Units: 1
Bid Date: 08/26/2024
Stock Number:
Price Level: 54 (Current: 54)
Lane: Lane 1

| Line | Option | Type | Option Description | Qty |
|------|---------|------|---|-----|
| 1 | 0769372 | | Boiler Plates, 100AAT Fire Department/Customer - Denver Fire Department Operating/In conjunction W-Service Center - Operating Miles - 50 Miles Number of Fire Dept/Municipalities - 10 Bidder/Sales Organization - Front Range Fire Apparatus Delivery - Delivery representative Dealership/Sales Organization, Service - Front Range Fire Apparatus | 1 |
| 2 | 0018180 | | Single Source Compliance, Aerials | 1 |
| 3 | 0584456 | | Manufacture Location, Appleton, Wisconsin | 1 |
| 4 | 0584452 | | RFP Location: Appleton, Wisconsin | 1 |
| 5 | 0588609 | | Vehicle Destination, US | 1 |
| 6 | 0670275 | | Unit to be Similar in some Aspects, Excluding Pump Panel Fill in Blank - Velocity 100' Platform job #30830 in some aspects, pictures provided | 1 |
| 7 | 0816491 | | Comply NFPA 1900 Changes Effective Jan 1, 2024, With Exceptions | 1 |
| 8 | 0533351 | | Quint Fire Apparatus | 1 |
| 9 | 0588612 | | Vehicle Certification, Aerial w/Pump | 1 |
| 10 | 0681278 | | Agency, Apparatus Certification, Aerial w/Pump, U.L. | 1 |
| 11 | 0816495 | | Certification, Vehicle Inspection Program, NFPA 1900 | 1 |
| 12 | 0000000 | STF | Inspection trip #1 - when - number of people Location - at customer location for a preconstruction conference. Qty, - 02 | 2 |
| 12 | 0000000 | STF | Inspection trip #2 - when - number of people Location - at the factory for a post paint inspection. Qty, - 02 | 2 |
| 12 | 0000000 | STF | Inspection trip #3 - when - number of people Location - at the factory for a delivery inspection. Qty, - 02 | 2 |
| 13 | 0799172 | | FLEET CUSTOMER | 1 |
| 14 | 0092138 | | Highly Customized Product (HCP) | 1 |
| 15 | 0620362 | | Consortium, HGAC | 1 |
| 16 | 0537375 | | Unit of Measure, US Gallons | 1 |
| 17 | 0030006 | | Bid Bond Not Requested | 1 |
| 18 | 0816569 | | Performance Bond, Not Requested, PPI Terms | 1 |
| 19 | 0000007 | | Approval Drawing | 1 |
| 20 | 0611571 | SP | Drawing, As Built, At Delivery a Revised Print w/ Changes, FLEET | 1 |
| 21 | 0002928 | | Electrical Diagrams | 1 |
| 22 | 0771624 | | Velocity Chassis, 100AAT | 1 |
| 23 | 0021007 | | Maximum Overall Height Size - 11'11" | 1 |
| 24 | 0000110 | | Wheelbase Wheelbase - 250.50" | 1 |
| 25 | 0000070 | | GVW Rating GVW rating - 84,000 pounds | 1 |
| 26 | 0000203 | | Frame Rails, 13.38 x 3.50 x .375, Qtm/AXT/Imp/Vel | 1 |
| 27 | 0889473 | | Frame Liner, "C/Inv L" 12.50" x 3.00" x .25", AXT/Vel/Imp/Enf, 57" Qval | 1 |
| 28 | 0508846 | | Axle, Front, Oshkosh TAK-4, Non Drive, 24,000 lb, Velocity | 1 |
| 29 | 0090914 | | Suspension, Front TAK-4, 24,000 lb, Qtm/AXT/Vel/Enf/SFR | 1 |
| 30 | 0087572 | | Shock Absorbers, KONI, TAK-4, Qtm/AXT/Imp/Vel/Enf | 1 |
| 31 | 0000322 | | Oil Seals, Front Axle | 1 |
| 32 | 0679621 | | Tires, Front, Michelin, XZY3 (wb), 425/65R22.50, 20 ply, Fire Service Load Rtnng | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|---|-----|
| 33 | 0019611 | | Wheels, Front, Alcoa, 22.50" x 12.25", Aluminum, Hub Pilot | 1 |
| 34 | 0896897 | SP | Axle, Rear, Meritor RT58-185, 58,000 lb, Enf/Vel 100AAT | 1 |
| 35 | 0544244 | | Top Speed of Vehicle, 60 MPH/96 KPH | 1 |
| 36 | 0812742 | SP | Suspen, Rear, Hendrickson FMX 622 EX, Air Ride, 62,000 lb, 100AAT | 1 |
| 37 | 0000485 | | Oil Seals, Rear Axle | 1 |
| 38 | 0809702 | | Tires, Rear, Michelin, XDN2 Grip, 315/80R22.50, LRL, Tandem | 1 |
| 39 | 0019653 | | Wheels, Rear, Alcoa, 22.50" x 9.00", Aluminum, Hub Pilot, Tandem | 1 |
| 40 | 0568081 | | Tire Balancing, Counteract Beads | 1 |
| 41 | 0620569 | | Tire Pressure Monitoring, RealWheels, AirSecure, Valve Cap, Tandem Axle | 1 |
| | | | Qty, Tire Pressure Ind - 10 | |
| 42 | 0002045 | | Mud Flap, Front and Rear, Pierce Logo | 1 |
| 43 | 0021931 | | Tire, "Crossfire" Air Pressure Equalization (tandem) | 1 |
| 44 | 0760616 | | Chains, Onspot Automatic Tire, Custom, Locking Switch | 1 |
| 45 | 0766669 | | Chocks, Wheel, SAC-44-E, Folding, 100AAT | 1 |
| | | | Qty, Pair - 01 | |
| 46 | 0766668 | | Mounting Brackets, Chocks, SAC-44-E, Folding, Horizontal, 100AAT | 1 |
| | | | Qty, Pair - 01 | |
| | | | Location, Wheel Chocks - Left Side Rear Tire, Rearward | |
| 47 | 0593759 | | ESC/ABS/ATC Wabco Brake System, Tandem Rear Axle | 1 |
| 48 | 0030185 | | Brakes, Knorr/Bendix 17", Disc, Front, TAK-4 | 1 |
| 49 | 0000730 | | Brakes, Meritor, Cam, Rear, 16.50 x 7.00" | 1 |
| 50 | 0020784 | | Air Compressor, Brake, Cummins/Wabco 18.7 CFM | 1 |
| 51 | 0000794 | | Brake Reservoirs, Six | 1 |
| | | | Paint Color, Air Tanks - Black #98 | |
| 52 | 0587033 | | Air Dryer, Brake, AD-9 w/heat, 2010 | 1 |
| 53 | 0000790 | | Brake Lines, Nylon | 1 |
| 54 | 0000854 | | Air Inlet, w/Disconnect Coupling | 1 |
| | | | Location, Air Coupling(s) - DS Step Well, Rearward | |
| | | | Qty, Air Coupling (s) - 1 | |
| 55 | 0000860 | | Outlet, Air, with shut off valve | 1 |
| | | | Location, Air Coupling(s) - DS Frt Body Compt | |
| | | | Qty, Air Coupling (s) - 1 | |
| 56 | 0004200 | | Hose, Air 25' length, w/air chuck | 2 |
| | | | Qty, - 02 | |
| 57 | 0070810 | | All Wheel Lockup (Aerial/Tanker Chassis) | 1 |
| 58 | 0014130 | | Air Tank, Additional for Extra Air Horn Capacity | 1 |
| | | | Paint Color, Air Tanks - Black #98 | |
| 59 | 0808504 | | Engine, Cummins X15, 605 hp, 1850 lb-ft, W/OBD, EPA 2027, Velocity | 1 |
| 59 | 0000000 | STF | Engine Contingency Adjustment \$25,000.00 | 1 |
| 60 | 0730808 | | Filters, Remote Mounted, Oil, Fuel, X15, VEL/AXT/Enf | 1 |
| 61 | 0001244 | | High Idle w/Electronic Engine, Custom | 1 |
| 62 | 0678027 | | Engine Brake, Jacobs Compression Brake, Cummins Engine, with Allison Retarder | 1 |
| | | | Switch, Engine Brake - e) Cummins Hi Med Lo | |
| 63 | 0552334 | | Clutch, Fan, Air Actuated, Horton Drive Master | 1 |
| 64 | 0123135 | | Air Intake, w/Ember separator, Imp/Vel | 1 |
| 65 | 0814375 | | Exhaust System, Horizontal, Right Side | 1 |
| | | | Exhaust, Diffuser - Aluminized Steel (Standard) | |
| | | | Exhaust, Material/Finish - Aluminized Steel (Standard) | |
| | | | Location, Diffuser Termination - 2.00" Past Rub Rail (Standard) | |
| | | | Tip, Exhaust - Straight Tip (Standard) | |
| 65 | 0000000 | STF | Ward No Smoke System | 1 |
| 66 | 0787999 | | Radiator, Impel/Velocit | 1 |
| 67 | 0722487 | | Cooling Hoses, Gates Silicone and Rubber Combination, Velocity | 1 |
| 68 | 0014124 | | Skid Plate, Radiator, .25", All Custom Chassis | 1 |
| 69 | 0673756 | | Winter Cover With Ventilation, Front Cab Grille, One Piece, Vel | 1 |
| | | | Color, Vinyl Cover - g) light blue | |
| 70 | 0803687 | | Fuel Tank, 65 Gallon, Left Side Fill, Rear Air Suspension | 1 |
| 71 | 0001129 | | Lines, Fuel | 1 |
| 72 | 0595087 | | DEF Tank, 4.5 Gallon, LS Fill, Forward of Rear Axle | 1 |
| | | | Door, Material & Finish, DEF Tank - Polished Stainless | |
| 73 | 0723716 | | Fuel Priming Pump, Electronic, Automatic, Cummins, No Swt Req'd | 1 |
| 74 | 0552712 | | Not Required, Shutoff Valve, Fuel Line | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|--|-----|
| 75 | 0553019 | | Cooler, Engine Fuel, Imp/Vel, SFR/Enf | 1 |
| 76 | 0690880 | | No Selection Required From This Category | 1 |
| 77 | 0801894 | | Trans, Allison 6th Gen, 4500 EVS PR, w/Prognostics, Imp/Vel/Qtm/Enf | 1 |
| | | | Trans. retarder capacity - e. medium/1600, 4000 EVS | |
| | | | Trans, retarder control - l) Auto 1/3, 2/3, 3/3 | |
| 78 | 0512762 | | Transmission, Shifter, 6-Spd, Push Button, 4500, Imp/Vel/Qtm/Enf | 1 |
| | | | Trans, ratio - 4500 EVS, 6Spd | |
| 79 | 0797408 | | Transmission Oil Cooler, Modine, External, w/Modine External Sump | 1 |
| 80 | 0001375 | | Driveline, Spicer 1810 | 1 |
| 81 | 0669988 | | Steering, Sheppard M110 w/Tilt, TAK-4, Eaton Pump, w/Cooler | 1 |
| 82 | 0001544 | | Not Required, Steering Assist Cylinder on Front Axle | 1 |
| 83 | 0509230 | | Steering Wheel, 4 Spoke without Controls | 1 |
| 84 | 0690274 | | Logo/Emblem, on Dash | 1 |
| | | | Text, Row (1) One - Denver | |
| | | | Text, Row (2) Two - Fire | |
| | | | Text, Row (3) Three - Department | |
| 85 | 0816786 | | Lube System, Vogel Auto Lube System, Tandem Rear Axle | 1 |
| | | | Location, Vogel Lube Pump/Reservoir - Right Side Battery Box | |
| 86 | 0805702 | SP | Bumper, 27" Total (16" Extension), Polished S/S, Integrated, 100AAT, VEL | 1 |
| 87 | 0816723 | SP | Tray, Hose, Center, 16" Extension, Outside AH, 15" Deep, 100AAT | 1 |
| | | | Grating, Bumper extension - Grating, Rubber | |
| | | | Capacity, Bumper Tray - 21) 150' of 1.75" | |
| 88 | 0633479 | | Hose Restraint, Bumper Tray, Velcro Straps, Pair | 1 |
| | | | Qty, Pair - 01 | |
| 89 | 0825640 | | Lift & Tow Package, Enforcer/Velocity, 100AAT | 1 |
| 90 | 0522573 | | Tow Hooks Not Required, Due to Lift and Tow Package | 1 |
| 91 | 0566676 | | Notch, Bumper Tray Cover, Each | 1 |
| | | | Fill in Blank - center tray passenger side | |
| | | | Qty, Hose Tray Covers - 1 | |
| 92 | 0765272 | SP | Lights, Fog, JW Speaker, 6048, Recess In Bumper, Hdlt Sw & Sep Sw | 1 |
| 93 | 0668315 | | Cab, Velocity FR, 7010 Raised Roof | 1 |
| 94 | 0724207 | | Engine Tunnel, X12-15, MX13, Foil Insulation w/Mech Fasteners, Velocity FR | 1 |
| 95 | 0887600 | | Cab Insulation, Impel/Velocity FR | 1 |
| 96 | 0677478 | | Rear Wall, Exterior, Cab, Aluminum Treadplate | 1 |
| 97 | 0764124 | | Cab Lift, Elec/Hyd, Manual Override, Stabilizer Interlock, Vel 100AAT | 1 |
| 98 | 0123176 | | Grille, Bright Finished, Front of Cab, Velocity | 1 |
| 99 | 0002224 | | Scuffplates, S/S At Cab Door Jambs, 4-Door Cab | 1 |
| | | | Material Trim/Scuffplate - c) S/S, Polished | |
| 100 | 0527032 | | Trim, S/S Band, Across Cab Face, Rect Lights, Velocity | 1 |
| | | | Material Trim/Scuffplate - b) S/S, Brushed | |
| | | | Turnsignal Covers - No Covers | |
| 101 | 0087357 | | Molding, Chrome on Side of Cab | 1 |
| 102 | 0521669 | | Mirrors, Retractable, West Coast Style, Htd/Rmt, w/Htd/Rmt Convex | 1 |
| 103 | 0667937 | | Door, Full Height, Velocity FR 4-Door Cab, Raised Roof | 1 |
| | | | Key Model, Cab Doors - 1041 | |
| | | | Cab, Exterior Door Handle, Finish - 4-Door, Chrome/Black | |
| 104 | 0655507 | | Door Panel, Polished Stainless Steel, Impel/Velocity 4-Door Cab | 1 |
| 105 | 0667905 | | Storage Pockets w/ Elastic Cover, Recessed, Overhead, Impel/Velocity FR | 1 |
| 106 | 0667902 | | Controls, Electric Windows, All Cab Doors, Impel/Velocity FR | 1 |
| 107 | 0555485 | | Steps, 4-Door Full Tilt Cab, Imp/Vel | 1 |
| 108 | 0770194 | | Handrail, Exterior, Knurled, Alum, 4-Door Cab | 1 |
| 109 | 0697644 | | Steps, Stirrup, Formed, Cab & Crew Cab Doors, 26.50" Long Front Steps, Imp/Vel | 1 |
| | | | Light, Step, Additional - P25 LED | |
| 110 | 0892637 | | Lights, Cab & Crw Cab Acs Stps, P25, LED w/Bezel, 1Lt Per Step | 1 |
| | | | Color, Trim - Chrome Housing | |
| 111 | 0002140 | | Fenders, S/S on Cab | 1 |
| 112 | 0586564 | | Window, Side of C/C, Fixed, w/Cabinet, Imp/Vel | 1 |
| 113 | 0552935 | | Trim, Cab Side Windows, Velocity | 1 |
| 114 | 0012090 | | Not Required, Windows, Front/Side of raised roof | 1 |
| 115 | 0509287 | | Windows, Rear CC, (2) 11.25" x 18", Velocity | 1 |
| 116 | 0553196 | | Trim, Cab Rear Windows, Velocity | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|--|-----|
| 117 | 0803524 | | Compt, Storage, 10.71 W x 19.25 H x 22 D, (1) Ea Side C/C, Dbl Pan, Imp/Vel Light, Aux Cab Compartments - On Scene Night Axe, Hinged Side Finish, Cab Compt/Component - Spatter Gray Door, Cab Exterior Cabinet - Double Pan, (2), Non-Locking Door, Exterior Stop - 2-Web Strap | 1 |
| 118 | 0653500 | SP | Roof, Aluminum Treadplate, Rear, 24.00" | 1 |
| 119 | 0821496 | SP | Box, Alum 4-Way to Mount Model 17 Lil' Giant Ladder w/Straps, Safe-Stride Location - On top of the cab, 24" from the rear wall | 1 |
| 120 | 0615196 | | Web Netting, Fasteners, Cab Interior Location - over the top of the three (2) trays in the crew cab, one (1) on top of each rear facing EMS cabinet and one (1) on top of the tray mounted on the rear of the engine tunnel Qty, - 03 Type of fastener - 1" Cobra Buckle Restraint Location - Front (towards front of truck) | 3 |
| 121 | 0606278 | | Tray, Equipment Mounting, Aluminum, Lip, Size Location - on top of both rear facing EMS cabinets and on the rear of engine tunnel Qty, - 03 Size - top of DS rear facing cabinet (1) 22.25" wide x 24.00" long (front to back), top of PS rear facing cabinet (1) 20.25" wide x 20.00" long (front to back) and on rear of engine tunnel (1) 41.50" wide x 34.00" long (front to back) See pictures Material Finish, Cab Interior - Painted Lip - 2.00" | 3 |
| 122 | 0748671 | | Cab Interior, Vinyl, Velocity FR, CARE Color, Cab Interior Vinyl/Fabric - Endure Vinyl - Silver/Gray | 1 |
| 123 | 0667943 | | Cab Interior, Paint Color, Impel/Velocity FR Color, Cab Interior Paint - a) gray | 1 |
| 124 | 0509532 | | Floor, Rubber Padded Cab & Crew Cab, Imp/Vel | 1 |
| 125 | 0741239 | | HVAC, Heavy-Duty, Impel/Velocity FR, CARE Paint Color, A/C Condenser - Painted to Match Cab Roof HVAC System, Filter Access - Removable Panel Auxiliary Cab Heater - Both | 1 |
| 126 | 0639675 | | Sun Visor, Smoked Lexan, AXT, Imp/Vel, SFR/Enf Sun Visor Retention - No Retention | 1 |
| 127 | 0548173 | | Grab Handles, Driver and Passenger Door Post, Imp/Vel | 1 |
| 128 | 0002526 | | Light, Engine Compt, All Custom Chassis | 1 |
| 129 | 0199603 | | Fluid Check Access, Imp/Vel, Restricted Access Latch, Door, Storage - Lift and Turn Latch, Flush, Pair | 1 |
| 130 | 0793516 | SP | Map box, 4 bin/30 Deg Slant, Mount Vertical, Cup Holder, Storage, Qty Qty, - 1 | 1 |
| 131 | 0583042 | | Side Roll and Frontal Impact Protection | 1 |
| 132 | 0622618 | | Seating Capacity, 5 Belted Seats | 1 |
| 133 | 0697005 | | Seat, Driver, Pierce PS6, Premium, Air Ride, High Back, Safety, PRIMARY | 1 |
| 134 | 0696994 | | Seat, Officer, Pierce PS6, Premium, Air Ride, SCBA, Safety, PRIMARY | 1 |
| 135 | 0002517 | | Not Required, Radio Compartment | 1 |
| 136 | 0827162 | SP | Cabinet, Rear Facing, LS, 22.25 W x 26 H x 30.50 D, Radius Web, Sp Sw Loc, Imp/Vel Location - on the outboard edge of the tray on top of the cabinet. Light, Short Cabinet - Pierce, Interior, Right Side and Pierce, Interior, Left Side Material Finish, Shelf - Painted - Cab Interior Shelf/Tray, Cabinet - (1) Shelf, Adjustable, 0.75" Up-Turned Lip Louvers, Cabinet - 0-No Louvers Fastener, Web, Cab Cabinet - 1" Cam Buckle, Top | 1 |
| 137 | 0102783 | | Not Required, Seat, Rr Facing C/C, Center | 1 |
| 138 | 0122186 | | Seat, Rr Fcng C/C, RS Otbrd, Pierce PS6, Premium, SCBA, Safety, PRIMARY | 1 |
| 139 | 0782296 | | Cabinet, Fwd Fcng, LS, 21 W x 64 H x 14 D, Roll, Imp/Vel Material Finish, Shelf - Painted - Cab Interior Shelf/Tray, Cabinet - (3) Shelves, Adjustable, 1.25" Up-Turned Lip Door, Cab Interior Cabinet - Rollup, Amdor, White, Non-Locking Light, Tall Cabinet - Amdor, Interior, White, Left Side and Amdor, Interior, White, Right Side Louvers, Cabinet - 0-No Louvers | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|---|-----|
| 140 | 0729083 | SP | Seat, Fwd Fcng C/C, Ctr, (2) Pierce PS6, Premium, Air, SCBA, Safety, SECONDARY | 1 |
| 141 | 0782130 | | Cabinet, Fwd Fcng, RS, 21 W x 64 H x 14 D, Roll, Imp/Vel Material Finish, Shelf - Painted - Cab Interior Shelf/Tray, Cabinet - (3) Shelves, Adjustable, 1.25" Up-Turned Lip Door, Cab Interior Cabinet - Rollup, Amdor, White, Non-Locking Light, Tall Cabinet - Amdor, Interior, White, Left Side and Amdor, Interior, White, Right Side Louvers, Cabinet - 0-No Louvers | 1 |
| 142 | 0827174 | SP | Cabinet, Rr Fcng, Top Eng Tnl, 41.5 W x 16 H x 30 D, Rad Web, Sp Mtg, Sp Sw Loc, Vel Location - In the center of the cabinet top rear facing edge. Light, Short Cabinet - Pierce, Interior, Right Side and Pierce, Interior, Left Side Material Finish, Shelf - Painted - Cab Interior Shelf/Tray, Cabinet - (1) Shelf, Adjustable, 0.75" Up-Turned Lip Louvers, Cabinet - 0-No Louvers Fastener, Web, Cab Cabinet - 1" Cam Buckle, Top | 1 |
| 143 | 0646614 | | Cabinet, (2) Rr Fcng, Overhead, 22 W x 10 H x 34 D, Imp/Vel FR Latch, Storage Compt - a) Non Locking Light, Overhead Compt - Pierce, Horizontal Mounted | 1 |
| 144 | 0566653 | | Upholstery, Seats In Cab, Turnout Tuff Color, Cab Interior Vinyl/Fabric - c) Black | 1 |
| 145 | 0543991 | | Bracket, Air Bottle, Hands-Free II, Cab Seats Qty, - 04 | 4 |
| 146 | 0603867 | | Seat Belt, ReadyReach Seat Belt Color - Red | 1 |
| 147 | 0604864 | | Seat Belt Height Adjustment, 5 Seats, Imp/Vel | 1 |
| 148 | 0817557 | | Helmet Storage, Provided by Fire Department, NFPA/ULC 2024 | 1 |
| 149 | 0647638 | | Lights, Dome, Weldon Dual LED 4 Lts Color, Dome Lt - Red & White Color, Dome Lt Bzl - Grey Control, Dome Lt White - Door Switches and Lens Switch Control, Dome Lt Color - Lens Switch | 1 |
| 150 | 0896451 | | Enhanced Software for Cab and Crew Cab Dome Lts | 1 |
| 151 | 0631779 | | Light, Map, Overhead, Round Halogen, AXT/Imp/Vel 12vdc power from - Battery switched | 1 |
| 152 | 0544441 | | Handlts, (4) Streamlight, LiteBox, 12v, Orange Location, Lights - ship loose | 1 |
| 153 | 0568369 | | Cab Instruments, Ivory Gauges, Chrome Bezels, Impel/Velocity 2010 | 1 |
| 154 | 0509511 | | Air Restriction Indicator, Imp/Vel, AXT, Enf MUX | 1 |
| 155 | 0543751 | | Light, Do Not Move Apparatus Alarm, Do Not Move Truck - Pulsing Alarm | 1 |
| 156 | 0743386 | | Messages, Open Dr/DNMT, Color Dsply, 100AAT | 1 |
| 157 | 0611681 | | Switching, Cab, Membrane, Impel/Velocity, AXT WiFi MUX Location, Emerg Sw Pnls - Driver's Side Overhead | 1 |
| 158 | 0555915 | | Wiper Control, 2-Speed with Intermittent, MUX, Impel/Velocity | 1 |
| 159 | 0731813 | | Hour Meter, Aerial, Included in Information Centers, ASL, AAT, ASP | 1 |
| 160 | 0002615 | | Switch, Aerial 12V Master | 1 |
| 161 | 0002617 | | PTO switch, w/light - aerial | 1 |
| 162 | 0834413 | | USB, Cab, 4, 12V DC, Dual USB Termination, Batt Dir. NFPA1900/ULC USB, Type - USB Combo A & C | 1 |
| 163 | 0821191 | | Wiring, Spare, 20 A 12V DC, Batt Dir, 1st NFPA1900/ULC Location, Wiring - one (1) in the electronics box over the engine behind panel #9 rearward 12vdc power from - Battery direct Wire termination - Stud | 1 |
| 164 | 0821194 | | Wiring, Spare, 20 A 12V DC, Batt Dir, 2nd NFPA1900/ULC Location, Wiring - an additional one (1) in the electronics box over the engine behind panel #9 rearward 12vdc power from - Battery direct Wire termination - Stud | 1 |
| 165 | 0834274 | | Wiring, Spare, (1) 20A 12V DC, Multi Loc, Cab, 1st, NFPA1900/ULC 12vdc power from - Battery direct | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|---|-----|
| 165 | | | Wire Termination 1 - Power Point Plug Wire Termination 2 - Power Point Plug Wire Termination 3 - Butt Splice Wire Termination 4 - Stud Wire Termination 5 - Not Required Termination Location 1 - panel #9 Termination Location 2 - panel #9 Termination Location 3 - (1) in the rear, tucked into the center seat riser Termination Location 4 - in the electronics box over the engine loc 9 Termination Location 5 - Not Required | |
| 166 | 0566101 | | Recess, Dash Panel, Officer Side, Vel/Imp | 1 |
| 167 | 0814201 | | Vehicle Information Center, 7" Color Display, Touchscreen, MUX, CL714 | 1 |
| 168 | 0816633 | | System Of Measurement - US Customary Collision Mitigation, HAAS Alert (R2V), HA7 | 1 |
| 169 | 0606247 | | Subscription, HAAS R2V - R2V - 5 Year Data Plan Subscription | 1 |
| 170 | 0834112 | SP | Vehicle Data Recorder w/CZ Display Seat Belt Monitor | 1 |
| 171 | 0834206 | SP | Intercom, Setcom 1350, 6-Pos, D,O,4C, Triple Radio,Denver | 1 |
| 172 | 0003757 | | Radios, Mobile, Harris, XL200 / XL185 , Denver, DIA Location 1 - lower center dash, left slot Location 2 - lower center dash, right slot Antenna, Std and Add'l Mts Only, 2-way Radio,Cust,Spl Cable Routing Location - routed to officer seat box Qty, - 03 Location 1 - on cab roof just to the rear of PS lightbar, one in each far corner of the crew cab roof | 3 |
| 173 | 0817058 | | Camera, Pierce, LS Mux, R Camera, SD, CL714 | 1 |
| 174 | 0814831 | | Camera System Audio - Speaker on Ceiling Behind Driver Not Required, Camera Switcher | 1 |
| 175 | 0896458 | | Pierce Command Zone, Advanced Electronics & Control System, Vel WiFi CZT Color, Antenna - White Antenna Module Housings - Black Housing with Power and Status Ind | 1 |
| 176 | 0896456 | | Prognostics, Electrical System | 1 |
| 177 | 0730603 | | Electrical System, Velocity ESP, Cummins, Paccar | 1 |
| 178 | 0079205 | | Batteries, (5) Stryten/Exide Grp 31, 950 CCA each, (1) Iso Bat, Threaded Stud | 1 |
| 179 | 0008621 | | Battery System, Single Start, All Custom Chassis | 1 |
| 180 | 0123174 | | Battery Compartment, Imp/Vel | 1 |
| 181 | 0812586 | | Charger, Sngl Sys, Kussmaul, Chief 091-266-12-60, 60 Amp | 1 |
| 182 | 0814869 | | Location, Cab, Charger, Behind Driver Seat | 1 |
| 183 | 0811943 | | Panel, Remote Control, Kussmaul, Chief 091-266-RCP | 1 |
| 184 | 0814872 | | Location, Cab, Ind/Remote, Display Through Window Behind Driver Seat | 1 |
| 185 | 0811952 | | Not Required, Indicator/Remote Status | 1 |
| 186 | 0824337 | | Not Required, Location Ind/Remote | 1 |
| 187 | 0016856 | | Shoreline, 15A 120V, Kussmaul Auto Eject, 091-55-15-120, Super Qty, - 01 Color, Kussmaul Cover - d) yellow Connection, Shoreline - the battery charger and six place receptacle strip in the cab. | 1 |
| 188 | 0067386 | | Shoreline Location, Fill-In-Blank Feature Location 1 - centered over the driver side cab wheel | 1 |
| 189 | 0647728 | | Alternator, 430 amp, Delco Remy 55SI | 1 |
| 190 | 0750852 | | Sealed Butt Splices and Sealed Ring Terminals, Chassis Frame & Rear Substructure | 1 |
| 191 | 0092582 | | Load Manager/Sequencer, MUX | 1 |
| 192 | 0783153 | | Enable/Disable Hi-Idle - e)High Idle enable Headlights, Rect LED, JW Spkr Evo 2, AXT/Enf/Imp/Sab/Vel Color, Headlight Bez - Chrome Bezel | 1 |
| 193 | 0648425 | | Light, Directional, WIn 600 Cmb, Cab Crn, Wrp Bzl Out HD Lts, Imp/Vel/AXT/Qtm Color, Lens, LED's - m)match LED's | 1 |
| 194 | 0620054 | | Light, Directional/Marker, Intermediate, Weldon 9186-8580-29 LED 2lts | 1 |
| 195 | 0648074 | | Lights, Clearance/Marker/ID, Front, P25 LED 7 Lts | 1 |
| 196 | 0670831 | | Lights, Clearance/Marker/ID, Rear, P25 LED 7Lts, 100AAT | 1 |
| 197 | 0602938 | | Light, Marker End Outline, Rubber Arm, LED Marker Lamp, Rear Body Qty, Lights, Pair - 1 | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|---|-----|
| 198 | 0804514 | | Lights, Tail, Wln M62BTT* Red Stop/Tail & M62T* Amber Dir Arw For Hsg Color, Lens, LED's - Match Flash Pattern, Directional Lts - Steady On (Arrow) | 1 |
| 199 | 0806466 | | Lights, Backup, Wln M62BU, LED, For Tail Lt Housing | 1 |
| 200 | 0889577 | | Bracket, License Plate & Light, P25 LED, Stainless Brkt Color, Trim - Chrome Housing | 1 |
| 201 | 0556842 | | Bezels, Wln, (2) M6 Chrome Pierce, For mtg (4) Wln M6 lights | 1 |
| 202 | 0589905 | | Alarm, Back-up Warning, PRECO 1040 | 1 |
| 203 | 0817254 | | Lights, Perimeter Cab, Amdor AY-LB-12HW0** LED 4Dr | 1 |
| 204 | 0769564 | | Lights, Perimeter Pump House, Amdor AY-LB-12HW020 LED 1lt | 1 |
| 205 | 0763190 | | Lights, Perimeter Body, Amdor AY-LB-12HW012 LED 3lts Control, Perimeter Lts - Parking Brake Applied | 1 |
| 206 | 0896454 | | Enhanced Software for Perimeter Lts | 1 |
| 207 | 0735865 | | Step Illumination, Pump Panel Light Shield, 100AAT, w/Pump | 1 |
| 208 | 0783158 | | Light, Visor, HiViz, FT-B-72-*-* , Cnt Feature Control, Scene Lts - Cab Sw Panel DS and Cab Sw Panel PS Color, Lt Housing HiViz - White Scene Light Optics - Flood/Spot | 1 |
| 209 | 0890017 | | Lights, HiViz FT-MB-24-*-*GWA0011, 31.11", Brkt Fet 2nd Location - Passenger side cab above rear cab door Qty, - 1 Control, Scene Lts - Cab Sw Panel DS and Cab Sw Panel PS Color, Lt Housing HiViz - White Scene Light Optics - combination | 1 |
| 210 | 0898142 | | Lights, HiViz FT-MB-24-*-*GWA0011, 31.11", Brkt Fet 1st Location - driver side cab above rear cab door Qty, - 1 Control, Scene Lts - Cab Sw Panel DS and Cab Sw Panel PS Color, Lt Housing HiViz - White Scene Light Optics - combination Brackets, Cab Side Scene Lts - Directly to Cab Roof | 1 |
| 211 | 0759180 | | Lights, HiViz FT-MB-33-*-* 42.44", 2nd Location - PS Above RS3 Qty, - 01 Control, Scene Lts - Side Scene Controls and Pump Panel Sw RS Color, Lt Housing HiViz - White Scene Light Optics - combination | 1 |
| 212 | 0762314 | | Lights, HiViz FT-MB-9-TR-*-* 13.87", 1st Location - DS body over the rear out rigger Qty, - 01 Control, Scene Lts - Side Scene Controls Color, Lt Housing HiViz - White Scene Light Optics - combination | 1 |
| 213 | 0759181 | | Lights, HiViz FT-MB-33-*-* 42.44", 1st Location - DS Above LS3 Qty, - 01 Control, Scene Lts - Pump Panel Sw LS and Side Scene Controls Color, Lt Housing HiViz - White Scene Light Optics - combination | 1 |
| 214 | 0766906 | | Lights, Wln, PCPSM1*, Pioneer, 12 VDC, 1st Location - each side of rear body Qty, - 02 Color, Wln Lt Housing - Chrome Cover Control, Scene Lts - Cab Sw Panel DS, Pump Panel Sw LS and Cab Sw Panel PS | 2 |
| 215 | 0762313 | | Lights, HiViz FT-MB-9-TR-*-* 13.87", 2nd Location - PS body over rear out rigger Qty, - 01 Control, Scene Lts - Side Scene Controls Color, Lt Housing HiViz - White Scene Light Optics - combination | 1 |
| 216 | 0729276 | | Lights, Hose Bed, Front/Rear, Light Strips, AAT Control, Hose Bed Lts - Cup Switch At Rear | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|---|-----|
| 217 | 0645677 | | Lights, Not Required, Rear Work, Alt. 12 Volt Lights At Rear Body | 1 |
| 218 | 0892706 | | Lights, Walk Surf, FRP Flood, P25 LED, 100AAT | 1 |
| | | | Color, Trim - Chrome Housing | |
| 219 | 0608771 | SP | Switch, Radio Master, w/40 Amp Breaker Radio Default To On Battery Switched | 1 |
| 220 | 0771870 | | Aerial, 100AAT, Alum Body | 1 |
| 221 | 0554271 | | Body Skirt Height, 20" | 1 |
| 222 | 0769002 | | Tank, Water, 300 Gallon, Poly, 100AAT | 1 |
| 223 | 0751917 | | Overflow, 3.00" Water Tank, Poly | 1 |
| 224 | 0028104 | | Foam Cell Required | 1 |
| 225 | 0553729 | | Not Required, Restraint, Water Tank, Heavy Duty | 1 |
| 226 | 0003429 | | Not Required, Direct Tank Fill | 1 |
| 227 | 0769016 | | Hose Bed, Alum, Right Side, 100AAT | 1 |
| 228 | 0723546 | | DA Finished Hose Bed/Cargo Area | 1 |
| 229 | 0003492 | | Hose Bed Capacity, Special Amount, Ascendant, 100AAT, PAP, PAL | 1 |
| | | | Capacity, Hose Bed - 500' of 5.00" | |
| 230 | 0748063 | | Hose Restraint, Front Vinyl/Treadplate, 1" Heavy Nylon Web Rear, RS, 100AAT | 1 |
| | | | Color, Vinyl Cover - a) red | |
| 231 | 0003512 | | Running Boards, Ascendant, PAL | 1 |
| 232 | 0735582 | | Turntable Steps, Swing-Down, Left Side, 100AAT | 1 |
| | | | Step, Flip - No Flip Step | |
| | | | Body Handrail Finish - knurled aluminum | |
| | | | Step Surface, Turntable - Punched Grip | |
| 233 | 0889980 | | Lights, Step (3), P25 LED, One Side | 1 |
| | | | Control, Scene Lts - Park Brake and Aerial master | |
| 234 | 0690023 | | Wall, Rear, Smooth Aluminum | 1 |
| 235 | 0074515 | | Tow Eyes (2), Painted Lower Job Color, 100AAT, Ascendant Single Axle, 75' HAL | 1 |
| 236 | 0769019 | | Construction, Compt, Alum, 100AAT | 1 |
| 237 | 0771504 | | Compt, Left Side, Roll, 100AAT | 1 |
| | | | Latch, Door, Access - lift and turn latch, flush, pair | |
| 238 | 0771505 | | Compt, Right Side, Roll, 100AAT | 1 |
| 239 | 0766482 | | Doors, Amdor Rollup, Side Compartments | 9 |
| | | | Qty, Door Accessory - 09 | |
| | | | Color, Roll-up Door - AMDOR Painted to Match Lower Body | |
| | | | Latch, Roll-up Door - Non-Locking Liftbar | |
| 240 | 0740006 | | Bumper, Rear, 3", Counterweight, Steel, Full 45 Degree Angled Corners, 100AAT | 1 |
| 241 | 0522565 | | Lights, Compt, OSS LED, Dual Light Strips, Each Side of Door | 9 |
| | | | Location - all body compartments | |
| | | | Qty, - 09 | |
| 242 | 0687145 | | Shelf Tracks, Recessed, PUC/3rd Generation | 1 |
| 243 | 0600289 | | Shelves, Adj, 500 lb Capacity, Full Width/Depth, Predefined Locations, Aerial | 6 |
| | | | Qty, Shelf - 06 | |
| | | | Material Finish, Shelf - Painted - Spatter Gray | |
| | | | Location, Shelves/Trays, Predefined - LS1-Transition Point, RS5-Transition Point, RS1-Centered, RS4-Centered, RS2-Transition Point and LS2-Centered | |
| 244 | 0709692 | | Tray, 215 lb, Tilt/Slide-Out, 30 Deg, Adj, Predefined Locations | 2 |
| | | | Qty, Tray (slide-out) - 02 | |
| | | | Location, Shelves/Trays, Predefined - RS3-Centered and LS3-Centered | |
| | | | Right of Partition | |
| | | | Material Finish, Tray - Painted - Spatter Gray | |
| 245 | 0616917 | | Tray, Floor Mounted, Slide-Out, 500lb, High/Special Side Height, 3G | 1 |
| | | | Qty, - 01 | |
| | | | location - LS4 | |
| | | | Material - paint to match compt interior | |
| | | | Tray, Side Height, Front - 2" | |
| | | | Tray, Side Height, Rear - 18" | |
| | | | Tray, Side Height, Right & Left - Tapered | |
| 246 | 0816543 | SP | Tray, 500 lb Slide-out, Hose, SM3 Slides, 120.00" One Way, w/ Divider, Torque Box | 1 |
| | | | Qty, - 01 | |
| | | | Fill in Blank - 280' of 3.00" double jacket hose on the left side and 180' of double jacket hose on the right side | |
| | | | location - lower left side of torque box | |
| | | | Width - 16.00" | |
| | | | Depth - 12.00" | |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|---|-----|
| 247 | 0647772 | | Tray, Floor Mounted, Slide-Out, 500lb, 2.00" Sides, 3G Qty, - 05 location - LS1, LS2, RS1, RS4 and RS2 - 15" wide and forward of 10" tray/toolboard provided in option 0791448. | 5 |
| 248 | 0544614 | | Material - Painted - Spatter Gray Toolboard, Swing-out, Alum, .188", Peg Board, 3G Qty - 1 Location, Pivot - Front Mounting, Toolboard - Stationary Hole Diameter, Pegboard/Toolboard - .203" diameter Finish, Pegboard/Toolboard - Painted - Spatter Gray Location, Toolboard - LS3 - Full Height/Width | 1 |
| 249 | 0673867 | | Toolboard, Swing-out, Alum, .188", Peg Board, 3G, Add'l Qty - 1 Location, Pivot - Back Mounting, Toolboard - Stationary Hole Diameter, Pegboard/Toolboard - .203" diameter Finish, Pegboard/Toolboard - Painted - Spatter Gray Location, Toolboard - LS3 - Full Height/Width | 1 |
| 250 | 0791448 | | Toolboard, Slide-out, Alum, .188", Peg Board, Hole FV, w/ 10" Wide Tray on Under location - RS2 immediately right (forward) of partition Qty - 1 Mounting, Toolboard - Stationary Hole Diameter, Pegboard/Toolboard - .281" diameter Finish, Pegboard/Toolboard - Painted - Spatter Gray | 1 |
| 251 | 0590939 | | Toolboard, Alum, .188", Peg Board, Added to Slide-Out Tray location - 15" wide floor tray in RS2 and 14.25" wide tray in RS1 Qty - 2 Hole Diameter, Pegboard/Toolboard - .281" diameter Finish, Pegboard/Toolboard - Painted - Spatter Gray | 2 |
| 252 | 0726426 | | Partition, Pegboard, Vertical Compt, Each, 3G Qty, Partition - 02 Location - LS3 24" from FORWARD clear door opening in RS2 (leave 10" clear from the rear door opening) Hole Diameter, Pegboard/Toolboard - .281" diameter Material Finish, Partition - Painted - Spatter Gray | 2 |
| 253 | 0752012 | | Compt, Crib, Treadplate w/ Brushed S/S Drawer Face, 44"W x 29"D x 8"H, 100AAT Qty, - 02 Location, Compartment, Predefined - LS2 and RS2 | 2 |
| 254 | 0061917 | | Rub Rail, Aluminum Extruded, 3.12", Side of Body | 1 |
| 255 | 0769018 | | Fender Crowns, Rear, S/S, w/Removable Fender Liner, Aerial, 3G, Two Pair | 1 |
| 256 | 0519849 | | Not Required, Hose, Hard Suction | 1 |
| 257 | 0893756 | | Handrails, Side Pump Panels, Per Print, Aerial Step, Runningboard - step | 1 |
| 258 | 0750559 | | Compt, Air Bottle, Double, Fender Panel, Tri Door, Alum, Common Fuel Door,100AAT Qty, Air Bottle Comp - 1 Door Finish, Fender Compt - Polished Location, Fender Compt - Single - LS Rear - Fuel Fill Combo - Triangular Dr Latch, Air Bottle Compt - Flush Lift & Turn Insert, Air Bottle Compt - Rubber Matting | 1 |
| 259 | 0657522 | | Compt, Air Bottle, Triple, Fender Panel Qty, Air Bottle Comp - 2 Door Finish, Fender Compt - Polished Location, Fender Compt - Triple - RS Fwd and Triple - RS Rear Latch, Air Bottle Compt - Flush Lift & Turn Insert, Air Bottle Compt - Rubber Matting | 2 |
| 260 | 0897837 | SP | Compt, Air Bottle, Dbl, Fender Panel, Alum, Common DEF Door, 23.50" Deep,100AAT Qty, Air Bottle Comp - 1 Door Finish, Fender Compt - Polished Location, Fender Compt - Single - LS Fwd - DEF Combo - Aerial Latch, Air Bottle Compt - Flush Lift & Turn Insert, Air Bottle Compt - Rubber Matting | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|---|-----|
| 261 | 0768635 | | Ladder, 35' Duo-Safety 1200A 2-Sect Qty, - 01 | 1 |
| 262 | 0010406 | | Ladder, 28' Duo-Safety 1200A 2-Section Qty, - 1 | 1 |
| 263 | 0024232 | | Location, Extension Ladder - torque box Ladder, 16' Duo-Safety 875A Roof Qty, - 02 | 2 |
| 264 | 0004233 | | Ladder, 14' Duo-Safety Fresno 701 Qty, - 1 | 1 |
| 265 | 0768634 | | Ladder, 10' Duo-Safety Folding, 585A Qty, - 01 | 1 |
| 266 | 0806199 | | Location, Folding Ladder Aerial - torque box Ladders in Torque Box, Gortite Roll, Retainer Latch, 100AAT Color, Roll-up Door, Gortite - Satin finish Latch, Roll-up Door, Gortite - Non-Locking, Rear Latch, Door Ladder Storage - Southco C2 Chrome Raised, Pair Latch, Anti-Migration Plate - Southco C2 chrome raised | 1 |
| 267 | 0766602 | | Lights, Torque Box Ladder Storage, Pierce LED Strip Lights, 2 Lts, 100AAT | 1 |
| 268 | 0812235 | | Ladder, Little Giant, Revolution 2.0 - Model 17, 13117 Location - cab roof | 1 |
| 269 | 0658170 | | Ladders, Nested, Right Side Ground Ladder Storage | 1 |
| 270 | 0733441 | SP | Trough, S/S, Jack/Strut Storage Location - right side of the torque box Qty, - 04 Size - TBD | 4 |
| 271 | 0515496 | | Pole, Pike 3' DUO Safety, Fiberglass w/D Handle Location - ship loose along with the two (2) 3' Fire Hooks Unlimited pike poles | 2 |
| 272 | 0775907 | | Qty, Pike Poles - 2 Pike Pole, 12' DUO Safety, Fiberglass | 2 |
| 273 | 0789564 | | Qty, - 02 Pike Pole, 8' DUO Safety, Fiberglass, Aerial | 2 |
| 274 | 0789566 | | Qty, - 02 Pike Pole, 6' DUO Safety, Fiberglass, Aerial | 2 |
| 275 | 0789586 | | Qty, - 02 Pike Pole, 3' DUO Safety, Fiberglass, w/D Handle | 2 |
| 276 | 0770572 | | Qty, - 02 Pike Pole Tubes, in Torque Box/Ladder Storage, Alum, Special Notch, NY Style | 2 |
| 277 | 0770464 | | Qty, - 01 Trough, S/S, Torque Box/Ladder Storage, D-Handled Pike Pole/Trash Hooks Pike Pole Make/Model Predefined - Fire Hooks Unlimited 12' Roof Hook D Handle | 1 |
| 278 | 0765390 | | Pump House, Side Control, 42", 100AAT, Control Zone | 1 |
| 279 | 0767048 | | Pump House Structure | 1 |
| 280 | 0828091 | | Pump, Waterous, ESU1, 2000 GPM, Single Stage, 100' AAT | 1 |
| 281 | 0504116 | | Seal, Mechanical, Waterous, w/S100/ESU Pump | 1 |
| 282 | 0816450 | | Trans, Pump, Waterous C22, S100/ESU Pump Only | 1 |
| 283 | 0635600 | | Pumping Mode, Stationary Only | 1 |
| 284 | 0605126 | | Pump Shift, Air Mnl Override, Split Shaft, Interlocked, Waterous | 1 |
| 285 | 0003148 | | Transmission Lock-up, EVS | 1 |
| 286 | 0004547 | | Auxiliary Cooling System | 1 |
| 287 | 0014486 | | Not Required, Transfer Valve, Single Stage Pump | 1 |
| 288 | 0737989 | | Valve, Relief Intake, Waterous Qty - 1 | 1 |
| 289 | 0826104 | | Pressure Setting - 150 psig Controller, Pressure, FRC, Pump Boss Max, PBA500 Pressure Governor Throttle Control - Clockwise Pressure Governor Default Mode - RPM Setting Pressure Governor Std/Metric - Standard psi readouts Pressure Governor Transducer - Single 600 PSI Pressure Governor Alarm - NOT BE an additional alarm provided | 1 |
| 290 | 0072153 | | Primer, Trident, Air Prime, Air Operated | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|--|-----|
| 291 | 0780364 | | Manuals, Pump, (2) Total, Electronic Copies | 1 |
| 292 | 0602492 | | Plumbing, Stainless Steel and Hose, Single Stage Pump, 100AAT | 1 |
| 293 | 0795135 | | Plumbing, Stainless Steel, w/Foam System | 1 |
| 294 | 0758412 | | Inlets, 6.00", (2) Right Side, 1500-2000 GPM Pump, 100AAT | 1 |
| 295 | 0836893 | | Valve, Ball Intake, TFT, AX Series, 100AAT | 1 |
| | | | Location, Main Inlet Valve - Both | |
| | | | Relief Valve, Ball Intake - Standard | |
| | | | BIV, TFT, Jumbo, AX Series - 5.0" STORZ RIGID X 6.0" NHF with side handwheel and Electric 5.0" STORZ RIGID X 6.0" NHF | |
| 296 | 0699096 | | Not Required, Cap, Main Pump Inlet, Included w/Storz Adapter | 1 |
| 297 | 0084610 | | Valves, Akron 8000 series- All | 1 |
| 298 | 0016158 | | Valve, Inlet(s) Recessed, Side Cntrl, "Control Zone" | 1 |
| | | | Qty, Inlets - 1 | |
| 299 | 0004700 | | Control, Inlet, at Valve | 1 |
| 300 | 0004660 | | Inlet (1), Left Side, 2.50" | 1 |
| 301 | 0004680 | | Inlet, Right Side, 2.50" | 1 |
| 302 | 0723049 | | Valve, .75" Bleeder, Aux. Side Inlet, "T" Swing Handle | 1 |
| 303 | 0767284 | | Tank to Pump, (1) 3.00" Valve, 3.00" Plumbing, 100AAT | 1 |
| 304 | 0004905 | | Outlet, Tank Fill, 1.50" | 1 |
| 305 | 0820189 | | Control, Outlets, Manual, Pierce HW if applicable | 1 |
| 306 | 0890913 | | Outlet, Left Side, 2.50", 100AAT | 2 |
| | | | Qty, Discharges - 02 | |
| 307 | 0005091 | | Elbow, Left Side Outlets, 45 Degree, 2.50" FNST x 2.50" MNST, VLH | 1 |
| 308 | 0004945 | | Outlet, Right Side, 2.50" | 3 |
| | | | Qty, Discharges - 03 | |
| 309 | 0025091 | | Elbow, Right Side Outlets, 45 Degree, 2.50" FNST x 2.50" MNST, VLH | 1 |
| 310 | 0821949 | | Outlet, Large Diameter, Right Side, Akron Valve, 100AAT | 1 |
| | | | Outlet, Large Diameter, Plumbing - 4.00" | |
| | | | Outlet, Large Diameter, NST Adapter - 5.00" MNST | |
| | | | Outlet, Large Diameter, Valve Actuation - Akron 9343 w/analog pressure gauge | |
| 311 | 0005099 | | Elbow, Large Dia Outlet, 30 Deg, 5.00" FNST x 5.00" Storz | 1 |
| 312 | 0738134 | | Outlet, Front, 1.50" w/2" Plumbing, 100AAT | 1 |
| | | | Fitting, Outlet - 1.50" NST with 90 degree swivel | |
| | | | Drain, Front Outlet - Automatic | |
| | | | Location, Front, Single - top right side of bumper | |
| 313 | 0752097 | | Caps/Plugs for 1.00" to 3.00" Discharges/Inlets, Chain | 1 |
| 314 | 0723042 | | Valve, 0.75" Bleeder, Discharges, "T" Swing Handle | 1 |
| 315 | 0085090 | | Adapter, 1.50" FNST X 1.50" M Special | 2 |
| | | | Qty, Adapter for Outlets - 02 | |
| | | | Special Threads - NPSH | |
| | | | Location, Adapter(s) - crosslay outlet and front discharge | |
| 316 | 0005085 | | Adapter, Thread - 2.50" FNST X 2.50" M Special | 1 |
| | | | Qty, Adapter for Outlets - 01 | |
| | | | Special Threads - NPSH | |
| | | | Location, Adapter(s) - 2.50" crosslay | |
| 317 | 0039313 | | Adapter, Thread - 5" Storz X 2.50" MNST & Cap | 1 |
| | | | Qty, Adapter for Outlets - 01 | |
| | | | Location, Adapter(s) - passenger side large diameter | |
| 318 | 0029106 | | Not Required, Deluge Outlet | 1 |
| 319 | 0826320 | | Waterway Outlet & Control, Akron Valve, 100AAT | 1 |
| | | | Outlet, Waterway (Aerial), Valve Actuation - Pierce small handwheel | |
| 320 | 0762299 | | Crosslays, (1+) 1.50" Std.Cap, w/Poly Tray, OvHd, 100AAT | 2 |
| | | | Qty, Crosslays - 2 | |
| 321 | 0029196 | | Not Required, 2.50" Crosslay | 1 |
| 322 | 0591145 | | Hose Restraint, Crosslay/Deadlay, Top/Ends, Elastic Netting | 2 |
| | | | Qty, - 02 | |
| 323 | 0767109 | | Foam Sys, Husky 12, Single Agent, Multi Select Feature, 100AAT | 1 |
| | | | Discharge, Foam Locations - Front Bumper Left Side, Crosslay Front and Crosslay Rear | |
| 324 | 0012126 | | Not Required, CAF Compressor | 1 |
| 325 | 0552482 | | Refill, Foam Tank, Single Tank, Husky 12, Class B Foam | 1 |
| 326 | 0042573 | | Not Required, Foam System Demonstration | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|--|-----|
| 327 | 0022539 | | Foam Cell, 20 Gallon, Reduce Water | 1 |
| | | | Type of Foam - Class "B" | |
| 328 | 0505016 | | Drain, 1.00", Foam Tank #1, Husky 12 Foam System | 1 |
| 329 | 0091112 | | Not Required, Foam Tank #2 Drain | 1 |
| 330 | 0738111 | | Approval Dwg, All Pump Panel(s), Includes Color And Label Tags, FLEET | 1 |
| | | | Num Of Truck(s) or Sim Unit, ALL Pump Pnl, Dwg - 33309 | |
| 331 | 0032479 | | Pump Panel Configuration, Control Zone | 1 |
| 332 | 0747651 | | Step, Slide-Out/Fold-Out, Pump Operator Platform, 100AAT | 1 |
| 333 | 0667186 | | Light, Slide-Out Pump Operator Step, OSS Access LED, Short Step | 1 |
| 334 | 0005530 | | Material, Pump Panels, Side Control Polished Stainless | 1 |
| 335 | 0723264 | | Panel, Pump Access - Right Side Only, 100AAT | 1 |
| | | | Latch, Pump Panel Access, Side Mount - Flush Lift and Turn, Chrome, | |
| | | | AAT | |
| 336 | 0583824 | | Light, Pump Compt, WIn 3SC0CDCR LED White | 1 |
| | | | Qty, - 01 | |
| 337 | 0586382 | | Gauges, Engine, Included With Pressure Controller | 1 |
| 338 | 0005601 | | Throttle, Engine, Incl'd w/Press Controller | 1 |
| 339 | 0739224 | | Indicator Light @ Pump Panel, Throttle Ready, Incl w/Pressure Gov/Throttle,Green | 1 |
| 340 | 0549333 | | Indicators, Engine, Included with Pressure Controller | 1 |
| 341 | 0745568 | | Indicator Light, Pump Panel, Ok To Pump, Green | 1 |
| 342 | 0511078 | | Gauges, 4.00" Master, Class 1, 30"-0-600psi | 1 |
| 343 | 0511105 | | Gauge, 3.00" Pressure, Class 1, Special | 1 |
| | | | Gauge Pressure Range - 30"-0-600 psi | |
| | | | Color Dial Face - white | |
| 344 | 0757359 | | Gauge, Water Level, Class 1, Pierce Std, Remote Module Driver | 1 |
| | | | Activation, Water Level G - Pump in gear or parking brake applied | |
| 345 | 0750438 | | Water Level Gauge, WIn PSTANK2, LED 1-Light, 4-Level | 2 |
| | | | Qty, - 02 | |
| | | | Activation, Water Level G - b) battery switched | |
| | | | Location, Water Level Gauge, Multi-Select - Each Side Custom Cab - | |
| | | | Most Rearward | |
| | | | Color, Trim - Chrome Trim | |
| 346 | 0062992 | | Gauge, Foam Level, (1) Tank, Class 1, GAAAR 5lt | 1 |
| 347 | 0735892 | | Light Shield, S/S LS & RS, 100AAT, Std LED | 1 |
| 348 | 0837190 | | Air Horns, (2) Grover Stuttertone, 6" Round, In Bumper, 100AAT | 1 |
| | | | Finish, Air Horns - Grover, Chrome | |
| 349 | 0606834 | | Location, Air Horns, Bumper, Each Side, Outside Frame, Inboard (Pos #2 & #6) | 1 |
| 350 | 0757092 | | Control, Air Horn, Multi Select | 1 |
| 351 | 0757080 | | Control, Air Horn, Ft Sw, RS | 1 |
| 352 | 0757081 | | Control, Air Horn, Ft Sw, LS | 1 |
| 353 | 0006100 | | No Electronic Siren | 1 |
| 354 | 0046133 | | No Siren Location | 1 |
| 355 | 0076155 | | No Siren Switch | 1 |
| 356 | 0006188 | | No Speaker | 1 |
| 357 | 0550461 | | Location, Not Required, No Speaker (Q2B) | 1 |
| 358 | 0895290 | | Siren, Federal Q2B, VEL, 100AAT | 1 |
| | | | Finish, Q2B Siren - Chrome | |
| 359 | 0578974 | | Siren, Mechanical, Recessed In Grille, Imp/Vel | 1 |
| 360 | 0748305 | | Control, Mech Siren, Multi Select | 1 |
| 361 | 0748281 | | Control Mech Siren, Ft Sw RS | 1 |
| 362 | 0748280 | | Control Mech Siren, Horn Ring | 1 |
| 363 | 0740391 | | Sw, Siren Brake, Momentary Chrome Push Button, RS | 1 |
| 364 | 0746353 | | Not Required, Warning Lights Intensity | 1 |
| 365 | 0748759 | SP | Lightbar, WIn, Freedom IV-Q, 92", RR_RR_RR_Opt_BB_BB_RR | 1 |
| | | | Opticom Priority - b) High | |
| | | | Opticom Activation - Cab Switch & E-Master | |
| | | | Momentary Opticom Activation - No Activation | |
| | | | Filter, Whl Freedom Ltbrs - No Filters | |
| 366 | 0838600 | SP | Lights, Side Basket, WIn, I2SM# DUO, 100AAT 1st | 2 |
| | | | Qty, - 02 | |
| | | | Color, Lights, Warning - Red and Blue | |
| | | | Control, Light - b) side warning | |
| | | | Color, Trim - Chrome Housing | |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|--|-----|
| 366 | | | Location, Lts 100AAT, Left Side - Left Side, Lower Center (LB8) | |
| | | | Location, Lts 100AAT Right Side - Right Side, Lower Center (RB8) | |
| 367 | 0838598 | SP | Lights, Front Basket, WIn I2SM# DUO, 100AAT 1st | 2 |
| | | | Qty, - 02 | |
| | | | Color, Lights, Warning - Red and Blue | |
| | | | Control, Light - a) rear upper warning | |
| | | | Color, Trim - Chrome Housing | |
| | | | Location, Lts 100'AAT Front - Front Lower Left Side (US9) and Front Lower Right Side (US7) | |
| 368 | 0833280 | | Light, GTT, 794* LED Opticom Emitter, Remote Mtd on Cab Roof | 1 |
| | | | Location - cab roof | |
| | | | Opticom Priority - b) High | |
| | | | Opticom Activation - Cab Switch & E-Master | |
| | | | Momentary Opticom Activation - no activation | |
| 369 | 0691531 | | Cover, Opticom Emitter, Aluminum Treadplate ** | 1 |
| 370 | 0898734 | | Light, Front Zone, WIn M6** M6** M6** M6** Q Bzl | 1 |
| | | | Color, Lens, LED's - Colored | |
| | | | Color, Lt DS Frnt Outside - Left Red | |
| | | | Color, Lt PS Frnt Outside - Right Red | |
| | | | Color, Lt DS Front Inside - Left White | |
| | | | Color, Lt PS Front Inside - Right White | |
| | | | Color, Q Bezel and Trim - Polished Chrome | |
| 371 | 0653937 | | Flasher, Headlight Alternating | 1 |
| | | | Headlt flash deactivation - b)w/any head lights | |
| 372 | 0540679 | | Lights, Side Zone Lower, WIn M6*C LED, Clear Lens 2pr | 1 |
| | | | Location, Lights Front Side - b)each side bumper | |
| | | | Color, Lt Side Front - Red | |
| | | | Color, Lt Side Rear - Red | |
| | | | Location, Lights Rear Side - Over Rear Wheels | |
| 373 | 0809198 | | Lights, Side, WIn M6**, 45 Deg Bzl, Cab Corner, 2lts | 1 |
| | | | Color, Lights, Warning - Red | |
| | | | Control, Light - b) side warning | |
| | | | Color, Lens, LED's - Match | |
| | | | Material, Bracket - Polished S/S | |
| | | | Color, Trim - Chrome Trim | |
| 374 | 0564655 | | Lights, Rear Zn Lwr, WIn M6*C LED, Clear Lens, For Tail Lt Housing | 1 |
| | | | Color, Lt DS Rear - r) DS Rear Lt Red | |
| | | | Color, Lt PS Rear - r) PS Rear Lt Red | |
| 375 | 0740407 | | Lights, Rear, WIn M6** LED, Features 1st | 2 |
| | | | Location - Above taillights | |
| | | | Qty, - 02 | |
| | | | Color, Lights, Warning - Blue Left, Red Right | |
| | | | Control, Light - a) rear upper warning | |
| | | | Color, Lens, LED's - Colored | |
| | | | Color, Trim - Chrome Trim | |
| 376 | 0088745 | | Light, Rear Zone Up, WIn L31H*F LED Beacon, Red LED | 1 |
| | | | Color, Dome, Rear Warning - j) both domes clear | |
| 377 | 0006551 | | Not Required, Lights, Rear Upper Zone Blocking | 1 |
| 378 | 0765223 | | Bracket, 5" Ledge, Over Rear Compt Door | 1 |
| | | | Material, Bracket - Aluminum Treadplate | |
| 379 | 0760474 | | Light, Traffic Directing, WIn TAM65 36" Long LED, Clr Lenses | 1 |
| | | | Activation, Traffic Dir L - Not Connected | |
| 380 | 0530074 | | Location, TDL, On Top of Body Below Turntable w/Treadplate Box | 1 |
| 381 | 0530282 | | Location, Traf Dir Lt Controller, Overhead Switch Panel DS Right End | 1 |
| 382 | 0780945 | SP | Light, Airport, WIn L41AP LED, Amber Beacon, Denver | 2 |
| | | | Location - forward raised roof each side | |
| | | | Qty, - 02 | |
| 383 | 0780350 | | Receptacle Strip, 15A 120V 6-Place, Interior Cab | 1 |
| | | | Qty, - 1 | |
| | | | Location 1 - 120 volt receptacle recessed in side wall to the rear of driver seat, power strip routed through seat riser to rear of engine tunnel coiled up loose just above 4way treadplate | |
| | | | AC Power Source - Shoreline | |
| 384 | 0779698 | | Receptacle Strip, 15A 120V 6-Place, Interior Body | 1 |
| | | | Qty, - 01 | |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|--|-----|
| 384 | | | Location 1 - LS2 (see photo) mounted high across the top rear corner and rear wall | |
| 385 | 0783678 | | AC Power Source - Shoreline Receptacle, 15/20A 120V 3-Pr 3-Wr, NEMA 5-20R SB Dup, 1st | 5 |
| | | | Location, Receptacles - one each side in front of cab doors, one each side at the forward portion of each body fender, and one at the rear of the body on passenger side | |
| | | | Qty, - 05 | |
| | | | AC Power Source - Shoreline | |
| 386 | 0519934 | | Cover, Receptacle - Exterior Flip Up Duplex Cover(s) | 1 |
| | | | Not Required, Brand, Hydraulic Tool System | |
| 387 | 0649753 | | Not Required, PTO Driven Hydraulic Tool System | 1 |
| 388 | 0771866 | | Aerial, Ascendant 100' Aerial Tower | 1 |
| 389 | 0680821 | | Boom Panel, Pair | 1 |
| | | | Paint Color, Predefined - gray metallic 509 | |
| 390 | 0526890 | | Not Required, Indicator, Extension | 1 |
| 391 | 0688232 | | Rung Covers, Aerial Device | 1 |
| | | | Rung Cover Color - Safety Yellow | |
| 392 | 0678641 | | Brackets Only, Pike Pole, Aerial Fly Section | 1 |
| | | | Qty, - 01 | |
| | | | Pike Pole Make/Model - Fire Hooks Unlimited 10' New York Roof Hook | |
| 393 | 0766887 | | Brackets, Stokes Storage, Base Section Above Boom Panel, 100AAT | 1 |
| | | | Qty, - 01 | |
| | | | Finish - Painted, Aerial Device Color | |
| | | | Location, Aerial Device - right side | |
| 394 | 0678539 | | Brackets Only, Roof/Wall Ladder, Aerial Fly Section | 1 |
| | | | Finish - Painted, Aerial Device Color | |
| | | | Roof Ladder, Make/Model - 16' Duo-Safety 875-A | |
| 395 | 0728167 | | Box, Lyfe Bracket Stg, w/Covr, RS Base Section Above Boom Pnl, w/Door Switch, 100AAT | 1 |
| | | | Finish - Painted, Aerial Device Color | |
| | | | Latch, Door, Storage - "D" Handle Latch | |
| | | | Louvers - no louvers | |
| 396 | 0728982 | | Box, Saw Storage, w/Cover, Base Section Above Boom Panel, 100AAT, Door Sw | 1 |
| | | | Qty, - 01 | |
| | | | Finish - Painted, Aerial Device Color | |
| | | | Latch, Door, Storage - "D" Handle Latch | |
| | | | Location, Aerial Device - left side | |
| | | | Louvers - no louvers | |
| 397 | 0623645 | | Aerial Stability Test, Maximum Tip Options | 1 |
| 398 | 0823011 | | Basket, 100AAT | 1 |
| 399 | 0677439 | | Box, Hose Storage, Platform | 1 |
| | | | Qty, - 01 | |
| | | | Latch, Door, Storage - Rubber Draw Latch | |
| | | | Location, Aerial Basket - right | |
| | | | Cover - cover | |
| | | | Hose Size, Hosebox - 100' of 1.75" | |
| 400 | 0803225 | | Lights, Turntable Walkway, P25, OSS, LED, 100AAT | 1 |
| | | | Color, Trim - Chrome Housing | |
| 401 | 0767535 | | Light, Turntable Console, TecNiq E-10, LED | 1 |
| 402 | 0732762 | | Basket Heat Shields, 100AAT | 1 |
| 403 | 0814210 | | Control Stations, 100AAT, CL714 | 1 |
| 404 | 0815152 | | Lights, Basket Interior, 100AAT | 1 |
| 405 | 0771862 | | Stabilizers, 100AAT, Three Sets | 1 |
| 406 | 0729051 | | Stabilizer Pan and Trim Material | 1 |
| | | | Stabilizer Panels - polished stainless steel | |
| | | | Stabilizer Trim - polished stainless steel | |
| 407 | 0746173 | | Door, Stabilizer Control Box, Aerial MUX, 100AAT | 1 |
| | | | Latch, Door, Storage - Southco C2 Chrome Raised | |
| | | | Hinge Location - Inboard | |
| | | | Door, Material & Finish, Stabilizer - Smooth aluminum | |
| 408 | 0771218 | | Hydraulic System, 100AAT | 1 |
| 409 | 0767932 | | Swivels, w/Encoder, 36, 100AAT | 1 |
| 410 | 0767931 | | Electrical System, 100AAT | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|--|-----|
| 411 | 0750002 | | Light, Tip, HiViz FT-MB-2.18-*-* 20.6" FT-MBKIT-PX, Frnt of Bskt 100AAT 1lt Color, Lt Housing HiViz - White Scene Light Optics - combination Control, Tip Lts - Turntable and Tip | 1 |
| 412 | 0740163 | | Lights, Tracking, Wln MPB* LED, 100AAT 2lts, Swt Feature Location, Sw, Arl DC Lts - w) 1 location Color, Wln Lt Housing - White Paint Scene Lt Optics LH Base - L Spot Scene Lt Optics RH Base - R Spot | 1 |
| 413 | 0743431 | | Basket Access, w/ Flip Down Step, Lift Bar Latch, 100AAT Finish, Step Well - aluminum treadplate | 1 |
| 414 | 0894586 | | Lights, Step (4), P25, Ladder Style Access Steps, Both Sides Control, Light - i) park brake and r) aerial master Color, Trim - Chrome Housing | 1 |
| 415 | 0540743 | | Lights, Stabilizer Warn (2) Sets, Wln M6*C LED, Clear Lens Color, Lt Rr Stabilzr Pan - r) Pan Light Red Color, Lt Fr Stabilzr Pan - r) Pan Light Red | 1 |
| 416 | 0068703 | | Lights, Grote Supernova LED, Stabilizer Beam, (1) Set | 1 |
| 417 | 0762387 | | Lights, Stabilizer Scene, (3) sets, Amdor AY-LB-12HW012, 100AAT | 1 |
| 418 | 0741714 | | DC Power To Tip, 20.48 Amp, 100AAT | 1 |
| 419 | 0737244 | | Light, HiViz, FT-MB-12-TR-*-* , 17.65" 12 Volt Under Corner Steps, 100AAT Qty, - 02 Location, Sw, Arl AC Lts - BB) 2 Pos Color, Lt Housing HiViz - White Scene Light Optics - combination Location, Lts Under 100'AAT Steps - LS Under Corner Step Center (US5) and RS Under Corner Step Center (US11) | 2 |
| 420 | 0727608 | | Light, Wln P*H1P1, 12 Volt, LED, Top Raise, RS Side Basket, 100AAT Location, Sw, Arl AC Lts - M)2 Pos Color, Wln Lt Housing - White Paint Scene Light Optics - flood | 1 |
| 421 | 0016924 | | Intercom, 2-Way Atkinson (PAP) | 1 |
| 422 | 0766912 | | Breathing Air to Tip, (1) 6000 PSI, 100AAT Refill Hose - 100' Breathing Air Fitting - CEJN Breathing Air Mask Box - mask box platform rubber draw latch | 1 |
| 423 | 0024742 | | Not Required, Mask, Breathing Air To Tip | 1 |
| 424 | 0767396 | | Aerial Pedestal, 100AAT | 1 |
| 425 | 0766834 | | Lyfe Brackets, 3-In-1, Used w/Duo-Safety 875 Ladders ONLY, 100AAT | 1 |
| 426 | 0803754 | SP | Hitch Receiver, 10,000 lb, LS/RS, Under Body Sides, Fwd of Tandems, 100AAT | 1 |
| 427 | 0767149 | | Turntable Access, ManSaver Bar, Yellow | 1 |
| 428 | 0804860 | | Waterway, 100AAT Aerial Waterway Drain 100AAT - Standard Location, Right Side | 1 |
| 429 | 0016952 | | (1) Preconnect At Platform, 2 Monitors | 1 |
| 430 | 0630799 | | Monitors, (2), Akron 3480 StreamMaster II Electric Nozzle, Monitor 1, PAP - Akron 5177 Electric 1250 gpm Nozzle, Monitor 2, PAP - Akron 3499 Tips/3485 Shaper | 1 |
| 431 | 0086971 | | Flowmeter, Waterway, MUX, PAP | 1 |
| 432 | 0009364 | | Inlet, 5.00", S/S, w/ Pump, Right Side, 100AAT | 1 |
| 433 | 0047897 | | Tools, Aerial | 1 |
| 434 | 0559491 | | Manuals and Training, 3 Consecutive Days, Platform, English | 1 |
| 435 | 0007150 | | Bag of Nuts and Bolts Qty, Bag Nuts and Bolts - 1 | 1 |
| 436 | 0816502 | | NFPA Required Loose Equipment, Quint, NFPA/ULC 2024, Provided by Fire Dept | 1 |
| 437 | 0816941 | | Soft Suction Hose, Provided by Fire Department, NFPA/ULC 2024 | 1 |
| 438 | 0027023 | | No Strainer Required | 1 |
| 439 | 0816939 | | Extinguisher, Dry Chemical, NFPA 2024, Provided by Fire Department | 1 |
| 440 | 0816937 | | Extinguisher, 2.5 Gal. Pressurized Water, NFPA/ULC 2024, Provided by Fire Dept | 1 |
| 441 | 0007482 | | Not Required, Crowbars | 1 |
| 442 | 0007484 | | Not Required, Claw Tools | 1 |
| 443 | 0816998 | | Axe, Flathead, Provided by Fire Department | 1 |
| 444 | 0817000 | | Axe, Pickhead, Provided by Fire Department | 1 |
| 445 | 0007494 | | Not Required, Sledgehammers | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|--|-----|
| 446 | 0741569 | | Paint Process / Environmental Requirements, Appleton | 1 |
| 447 | 0709763 | | Paint, Single Color, Velocity/Impel | 1 |
| | | | Paint Color, Cab - #40 Lime Yellow | |
| 448 | 0709845 | | Paint, Single Color, Body | 1 |
| | | | Paint, Body - Match Cab | |
| 449 | 0636524 | | Coating, Chassis Frame Assy, With Liner, Hot Dip Galvanized | 1 |
| | | | Paint Color, Frame Assembly, Predefined - Gloss Black | |
| 450 | 0693797 | | No Paint Required, Aluminum Front Wheels | 1 |
| 451 | 0693792 | | No Paint Required, Aluminum Rear Wheels | 1 |
| 452 | 0733739 | | Paint, Axle Hubs | 1 |
| | | | Paint, Axle Hub - Primary Job Color | |
| 453 | 0581434 | | Transit Coating, Carwell, Corrosion Protection, Including Underside | 1 |
| 454 | 0007230 | | Compartment, Painted, Spatter Gray | 1 |
| 455 | 0792638 | | Aerial Platform Paint | 1 |
| | | | Paint Color, Aerial Device - Gray metallic 509 | |
| | | | Paint Color, Turntable - Gray metallic 509 | |
| | | | Paint Color, Boom Support - black 101 | |
| | | | Paint Color, Cylinders - grey metallic 509 | |
| | | | Paint Color, Aerial Torque Box - black 101 paint | |
| | | | Paint Color, Aerial Stabilizers - black 101 | |
| | | | Paint Color, Aerial Basket - grey metallic 509 | |
| | | | Paint Color, Aerial Rotation Motor - Black | |
| | | | Paint Color, Aerial Control Console - gray metallic 509 | |
| 456 | 0544111 | | Reflective Band, 10" | 1 |
| | | | Color, Reflect Band - A - d) blue | |
| 457 | 0510041 | | Reflective across Cab Face, Imp/Vel | 1 |
| 458 | 0583454 | | Stripe, Chevron, Rear, Diamond Grade, Aerial | 1 |
| | | | Color, Rear Chevron DG - fluorescent yellow green | |
| 459 | 0598754 | | Stripe, Reflective/Diamond Grade, 4.00" on Stabilizers | 1 |
| | | | Color, Reflect Band - A - p) fluorescent yellow green diamond grade | |
| 460 | 0665144 | | Stripe, Reflective, Chevron, Cab and Crew Cab Door Edge, Diamond Grade | 1 |
| | | | Color, Reflect Band - A - p) fluorescent yellow green diamond grade | |
| | | | Color, Reflect Chev - A - r) red diamond grade | |
| 461 | 0027341 | | Jog, In Reflective Stripe, Single or Multiple | 1 |
| | | | Qty, - 1 | |
| 462 | 0651064 | | Stripe, Vinyl, Rear Surface Aerial Platform Basket, Lower, Prior To Basket Mount | 1 |
| | | | Color, Vinyl Stripe - 4) Black | |
| 463 | 0671573 | | Stripe, Diamond Grade Chevron, Swing Down Turntable Access Steps, Rear Only | 1 |
| | | | Color, Reflect Band - A - p) fluorescent yellow green diamond grade | |
| | | | Qty, - 1 | |
| | | | Color, Reflect Chev - B - a) red diamond grade | |
| 464 | 0545179 | | Stripe, Diamond Grade, Chevron, Front Bumper | 1 |
| | | | Size, Chevron Striping - 06 | |
| | | | Color, Chevron DG - Red 983-72 | |
| | | | Color, Chevron DG - B - Fluorescent Yellow-Green 983-23 | |
| 465 | 0593225 | | Stripe, Reflective, Cab Doors Interior, Diamond Grade | 1 |
| | | | Color, Reflect Band - A - p) fluorescent yellow green diamond grade | |
| 466 | 0027372 | | Lettering Specifications, (GOLD STAR Process) | 1 |
| 467 | 0686428 | | Lettering, Gold Leaf, 3.00", (41-60) | 1 |
| | | | Outline, Lettering - Outline and Shade | |
| 468 | 0685978 | | Lettering, Reflective, 18.00", Each | 2 |
| | | | Qty, Lettering - 02 | |
| | | | Outline, Lettering - No Outline or Shade | |
| 469 | 0685990 | | Lettering, Reflective, 10.00", (41-60) | 1 |
| | | | Outline, Lettering - No Outline or Shade | |
| 470 | 0685981 | | Lettering, Reflective, 14.00", Each | 4 |
| | | | Qty, Lettering - 04 | |
| | | | Outline, Lettering - No Outline or Shade | |
| 471 | 0685977 | | Lettering, Reflective, 20.00", Each | 6 |
| | | | Qty, Lettering - 06 | |
| | | | Outline, Lettering - No Outline or Shade | |
| 472 | 0041534 | | Emblem, (3) Letter Monogram Style with Lettering, Reflective, Denver, Each | 2 |
| | | | Qty, - 02 | |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|---|-----|
| 472 | | | Location, Emblem - one on each side on the cab doors. Color, Reflective - k) light blue | |
| 473 | 0530793 | | Emblem, American Flag, Flat (Not Moving), Pair, Mirror Images Qty, - 02 | 2 |
| 474 | 0695610 | | Location, Emblem - rear upper corners of crew cab each side Height, Emblem - e) 8" Emblem, Reflective, Per Dept. Submittal, Each Qty, - 02 | 2 |
| 475 | 0769753 | | Location, Emblem - D1 & P1 Size, Dept Seal, Reflect - 12" - 14" Emblem, American Flag Painted on Cab Grille, All Custom Chassis | 1 |
| 475 | 0000000 | STF | 16" Supervac Battery Powered PPV Fan Dewalt with Shore Power Qty, - 01 | 1 |
| 475 | 0000000 | STF | Service - Oil Change and Lube, Denver | 1 |
| 475 | 0000000 | STF | Oval Strapping Heron Rib - roll - RED Qty, - 02 | 2 |
| 475 | 0000000 | STF | Rescue Tools, Holmatro, DIA, 12-24-2025 | 1 |
| 475 | 0000000 | STF | Training, Fleet Technicians, DEN | 1 |
| 476 | 0031972 | | Manuals, Two (2), Fire Apparatus Parts, Custom Chassis | 1 |
| 477 | 0002905 | | Manuals, (2) Chassis Service, Custom | 1 |
| 478 | 0032433 | | Manuals, Two (2) Chassis Operation, Custom, English | 1 |
| 479 | 0823418 | | Manuals, Service, Cummins X15 Engine Qty, - 01 | 1 |
| 480 | 0047893 | | Manual/s, Maint/Service, Allison EVS 4500 Series Transmission, Add'l Qty, - 1 | 1 |
| 481 | 0030008 | | Warranty, Basic, 1 Year, Apparatus, WA0008 | 1 |
| 482 | 0611136 | | Warranty, Chassis, 3 Year, Velocity/Impel, WA0284 | 1 |
| 483 | 0696698 | | Warranty, Engine, Cummins, 5 Year, WA0181 | 1 |
| 484 | 0684953 | | Warranty, Steering Gear, Sheppard M110, 3 Year WA0201 | 1 |
| 485 | 0595767 | | Warranty, Frame, 50 Year, Velocity/Impel, WA0038 | 1 |
| 486 | 0595698 | | Warranty, Axle, 3 Year, TAK-4, WA0050 | 1 |
| 487 | 0733305 | | Warranty, Tandem Axle, 5 Year, Meritor, General Service, WA0384 | 1 |
| 488 | 0652758 | | Warranty, ABS Brake System, 3 Year, Meritor Wabco, WA0232 | 1 |
| 489 | 0019914 | | Warranty, Structure, 10 Year, Custom Cab, WA0012 | 1 |
| 490 | 0744240 | | Warranty, Paint, 10 Year, Cab, Pro-Rate, WA0055 | 1 |
| 491 | 0524627 | | Warranty, Electronics, 5 Year, MUX, WA0014 | 1 |
| 492 | 0695416 | | Warranty, Pierce Camera System, WA0188 | 1 |
| 493 | 0708760 | | Warranty, Not Applicable, LED Strip Lights | 1 |
| 494 | 0046369 | | Warranty, 5-year EVS Transmission, Standard Custom, WA0187 | 1 |
| 495 | 0685945 | | Warranty, Transmission Cooler, WA0216 | 1 |
| 496 | 0688798 | | Warranty, Water Tank, Lifetime, UPF, Poly Tank, WA0195 | 1 |
| 497 | 0596025 | | Warranty, Structure, 10 Year, Body, WA0009 | 1 |
| 498 | 0831317 | | Warranty, Gortite, Roll-up Door, 6 Year and AMDOR, Roll-up Door, 10 Year/5 Paint | 1 |
| 499 | 0734463 | | Warranty, Pump, Waterous, 7 Year Parts, WA0382 | 1 |
| 500 | 0648675 | | Warranty, 10 Year S/S Pumbing, WA0035 | 1 |
| 501 | 0657846 | | Warranty, Foam System, Husky 12, WA0231 | 1 |
| 502 | 0006999 | | Warranty, Structure, 20 Year, Aerial Device, WA0052 | 1 |
| 503 | 0687388 | | Warranty, Swivels, 5 Year, Aerial Device, WA0197 | 1 |
| 504 | 0685727 | | Warranty, Hydraulic System and Components, 3 Year/5 Year, WA0200 | 1 |
| 505 | 0687327 | | Warranty, Waterway, 10 Year, Aerial Device, WA0198 | 1 |
| 506 | 0595860 | | Warranty, Paint, 4 Year, Aerial Device, Pro-Rated, WA0047 | 1 |
| 507 | 0553455 | | Warranty, Electronics, 5 Year, MUX, WA0014 | 1 |
| 508 | 0595820 | | Warranty, Paint, 10 Year, Body, Pro-Rate, WA0057 | 1 |
| 509 | 0595421 | | Warranty, Goldstar, 3 Year, Apparatus, WA0018 | 1 |
| 510 | 0819254 | | Certification, Vehicle Stability, CD0196 | 1 |
| 511 | 0808577 | | Certification, Engine Installation, Velocity, Cummins X15, 2027 | 1 |
| 512 | 0686786 | | Certification, Power Steering, CD0098 | 1 |
| 513 | 0892701 | | Certification, Cab Integrity, Impel/Velociry FR, CD0190 | 1 |
| 514 | 0548950 | | Certification, Cab Door Durability, Velocity/Impel, CD0001 | 1 |
| 515 | 0548967 | | Certification, Windshield Wiper Durability, Impel/Velociry, CD0005 | 1 |
| 516 | 0667411 | | Certification, Electric Window Durability, Velocity/Impel FR, CD0004 | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|--|-----|
| 517 | 0549273 | | Certification, Seat Belt Anchors and Mounting, Imp/Vel/Vel SLT, CD0018 | 1 |
| 518 | 0735950 | | Certification, Cab HVAC System Perf, Vel/Imp FR, CD0166/CD0168/CD0176/CD0177 | 1 |
| 519 | 0545073 | | Amp Draw Report, NFPA Current Edition | 1 |
| 520 | 0002758 | | Amp Draw, NFPA/ULC Radio Allowance | 1 |
| 521 | 0799248 | | Appleton/Florida BTO | 1 |
| 522 | 0000053 | | Ascendant Tower | 1 |
| 523 | 0000012 | | PIERCE CHASSIS | 1 |
| 524 | 0004713 | | ENGINE, OTHER | 1 |
| 525 | 0046396 | | EVS 4000 Series TRANSMISSION | 1 |
| 526 | 0830902 | | WATEROUS PUMP ESU1 AAT | 1 |
| 527 | 0020009 | | POLY TANK | 1 |
| 528 | 0028048 | | FOAM SYSTEM | 1 |
| 529 | 0020006 | | SIDE CONTROL | 1 |
| 530 | 0020007 | | AKRON VALVES | 1 |
| 531 | 0020015 | | ABS SYSTEM | 1 |
| 532 | 0755454 | | AERIAL MEDIUM | 1 |



Turning Performance Analysis

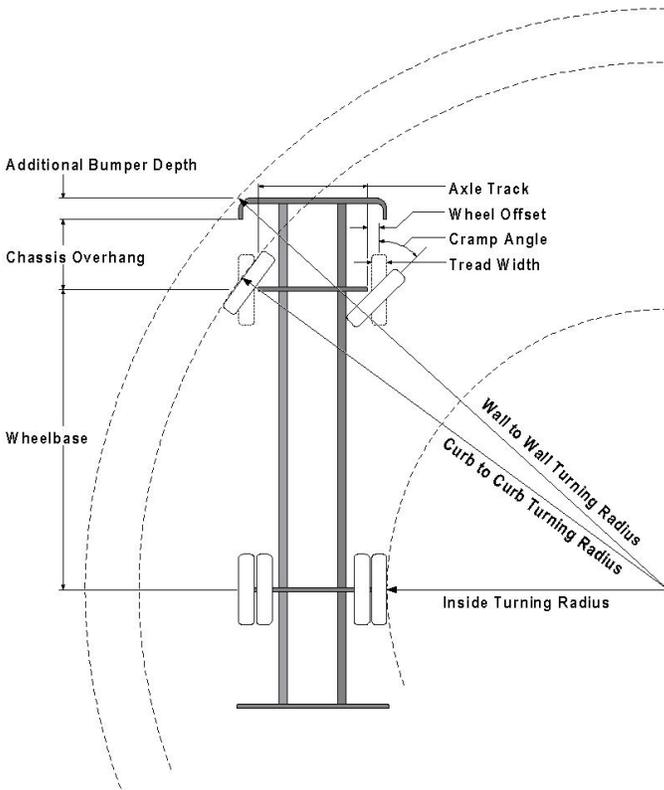
01/05/2026

Bid Number: 1384

Department: Denver, City and County-DIA

Chassis: Velocity Chassis, 100AAT

Body: Aerial, 100AAT, Alum Body



Parameters:

| | |
|--------------------------|-----------|
| *Inside Cramp Angle: | 40° |
| Axle Track: | 82.92 in. |
| Wheel Offset: | 4.68 in. |
| Tread Width: | 16.6 in. |
| Chassis Overhang: | 78 in. |
| Additional Bumper Depth: | 27 in. |
| Front Overhang: | 105 in. |
| Wheelbase: | 271 in. |

Calculated Turning Radii:

| | |
|---------------|---------------|
| Inside Turn: | 25 ft. 10 in. |
| Curb to curb: | 41 ft. 9 in. |
| Wall to wall: | 46 ft. 11 in. |

| Category | Option | Description |
|---------------------|---------|--|
| Tires, Front | 0679621 | Tires, Front, Michelin, XZY3 (wb), 425/65R22.50, 20 ply, Fire Service Load Rtnng |
| Bumpers | 0805702 | Bumper, 27" Total (16" Extension), Polished S/S, Integrated, 100AAT, VEL |
| Axle, Front, Custom | 0508846 | Axle, Front, Oshkosh TAK-4, Non Drive, 24,000 lb, Velocity |
| Wheels, Front | 0019611 | Wheels, Front, Alcoa, 22.50" x 12.25", Aluminum, Hub Pilot |
| Aerial Devices | 0771866 | Aerial, Ascendant 100' Aerial Tower |

Notes:

*Actual Inside cramp angle may be less than shown.

Curb to Curb turning radius calculated for 9.00 inch curb.

Definitions:

| | |
|-----------------------------|--|
| Inside CrampAngle | Maximum turning angle of the front inside fire. |
| Axle Track | King-pin to King-pin distance of front axle. |
| Wheel Offset | Offset from the center line of the wheel to the King-pin. |
| Tread Width | Width of the tire tread. |
| Chassis Overhang | Distance of the center line of the front axle to the front edge of the cab. This does not include the bumper depth. |
| Additional Bumper Wheel | Depth that the bumper assembly adds to the front overhang. |
| Wheelbase | Distance between the center lines of the vehicles front and rear axles. |
| Inside Turning Radius | Radius of the smallest circle around which the vehicle can turn. |
| Curb to Curb Turning Radius | Radius of the smallest circle around which the vehicle's tires can turn. This measures assumes a curb height of 9 inches. |
| Wall to Wall Turning Radius | Radius of the smallest circle around which the vehicle's tires can turn. This measures takes into account any front overhang due to chassis , bumper extensions and or aerial devices. |



Electrical Analysis

1/5/2026

| | |
|---|--|
| Bid #: 1384 | Job #: |
| Desc: Mid Mount, Velocity - 2018 | Sales Rep: Doucette, Duane |
| Customer: Denver, City and County-DIA | Organization: Front Range Fire Apparatus, Ltd |
| Option: Pierce Command Zone, Advanced Electronics & Control System, Vel WiFi CZT | Type: Multiplexed |

| Option | Description | Type* | Minimum Load | Intermittent Load | Total Connected |
|---------|---|--------------|--------------|-------------------|-----------------|
| 0001244 | High Idle w/Electronic Engine, Custom | | 0.00 | 1.20 | 0.00 |
| 0002526 | Light, Engine Compt, All Custom Chassis | | 0.00 | 1.60 | 0.00 |
| 0002617 | PTO switch, w/light - aerial | | 0.00 | 0.00 | 0.08 |
| 0062992 | Gauge, Foam Level, (1) Tank, Class 1, GAAAR 5lt | | 0.00 | 0.00 | 1.00 |
| 0072153 | Primer, Trident, Air Prime, Air Operated | | 0.00 | 0.00 | 0.00 |
| 0079205 | Batteries, (5) Stryten/Exide Grp 31, 950 CCA each, (1) Iso Bat, | | 0.00 | 3.00 | 0.00 |
| 0543751 | Light, Do Not Move Apparatus | | 0.00 | 0.80 | 0.00 |
| 0544441 | Handlts, (4) Streamlight, LiteBox, 12v, Orange | | 0.00 | 0.00 | 2.80 |
| 0549333 | Indicators, Engine, Included with Pressure Controller | | 0.00 | 0.35 | 0.00 |
| 0583824 | Light, Pump Compt, WIn 3SC0CDCR LED White | | 0.00 | 0.36 | 0.00 |
| 0589905 | Alarm, Back-up Warning, PRECO 1040 | | 0.00 | 0.50 | 0.00 |
| 0593759 | ESC/ABS/ATC Wabco Brake System, Tandem Rear Axle | | 0.00 | 6.00 | 0.00 |
| 0631779 | Light, Map, Overhead, Round Halogen, AXT/Imp/Vel | | 0.00 | 0.74 | 0.00 |
| 0667902 | Controls, Electric Windows, All Cab Doors, Impel/Velocity FR | | 0.00 | 26.00 | 0.00 |
| 0678027 | Engine Brake, Jacobs Compression Brake, Cummins Engine, with | | 0.00 | 0.42 | 0.00 |
| 0727608 | Light, WIn P*H1P1, 12 Volt, LED, Top Raise, RS Side Basket, | | 0.00 | 0.00 | 6.50 |
| 0737244 | Light, HiViz, FT-MB-12-TR-**-*, 17.65" 12 Volt Under Corner | | 0.00 | 0.00 | 9.38 |
| 0740407 | Lights, Rear, WIn M6** LED, Features 1st | | 0.00 | 2.70 | 1.80 |
| 0748063 | Hose Restraint, Front Vinyl/Treadplate, 1" Heavy Nylon Web | | 0.00 | 0.00 | 0.00 |
| 0759180 | Lights, HiViz FT-MB-33-**-* 42.44", 2nd | | 0.00 | 0.00 | 13.75 |
| 0759181 | Lights, HiViz FT-MB-33-**-* 42.44", 1st | | 0.00 | 0.00 | 13.75 |
| 0762313 | Lights, HiViz FT-MB-9-TR-**-* 13.87", 2nd | | 0.00 | 0.00 | 3.51 |
| 0762314 | Lights, HiViz FT-MB-9-TR-**-* 13.87", 1st | | 0.00 | 0.00 | 3.51 |
| 0764124 | Cab Lift, Elec/Hyd, Manual Override, Stabilizer Interlock, Vel | | 0.00 | 180.00 | 0.00 |
| 0765272 | Lights, Fog, JW Speaker, 6048, Recess In Bumper, Hdt Sw & | | 0.00 | 2.40 | 0.00 |
| 0766906 | Lights, WIn, PCPSM1*, Pioneer, 12 VDC, 1st | | 0.00 | 0.00 | 12.00 |
| 0767109 | Foam Sys, Husky 12, Single Agent, Multi Select Feature, 100AAT | | 0.00 | 5.00 | 0.00 |
| 0771862 | Stabilizers, 100AAT, Three Sets | | 0.00 | 6.00 | 0.00 |
| 0783158 | Light, Visor, HiViz, FT-B-72-**-*, Cnt Feature | | 0.00 | 0.00 | 23.84 |
| 0803225 | Lights, Turntable Walkway, P25, OSS, LED, 100AAT | | 0.00 | 0.00 | 0.00 |
| 0806466 | Lights, Backup, WIn M62BU, LED, For Tail Lt Housing | | 0.00 | 3.20 | 0.00 |
| 0809198 | Lights, Side, WIn M6**, 45 Deg Bzl, Cab Corner, 2lts | | 0.00 | 2.70 | 1.80 |
| 0817058 | Camera, Pierce, LS Mux, R Camera, SD, CL714 | | 0.00 | 1.20 | 0.00 |
| 0821191 | Wiring, Spare, 20 A 12V DC, Batt Dir, 1st NFPA1900/ULC | | 0.00 | 0.00 | 20.00 |
| 0821194 | Wiring, Spare, 20 A 12V DC, Batt Dir, 2nd NFPA1900/ULC | | 0.00 | 0.00 | 20.00 |
| 0833280 | Light, GTT, 794* LED Opticom Emitter, Remote Mtd on Cab Roof | | 0.00 | 0.03 | 0.00 |
| 0834112 | Intercom, Setcom 1350, 6-Pos, D,O,4C, Triple Radio,Denver | | 0.00 | 0.00 | 0.20 |
| 0834206 | Radios, Mobile, Harris, XL200 / XL185 , Denver, DIA | | 0.00 | 0.00 | 0.00 |
| 0834274 | Wiring, Spare, (1) 20A 12V DC, Multi Loc, Cab, 1st, | | 0.00 | 0.00 | 20.00 |
| 0834413 | USB, Cab, 4, 12V DC, Dual USB Termination, Batt Dir. | | 0.00 | 0.00 | 10.00 |
| 0838598 | Lights, Front Basket, WIn, I2SM# DUO, 100AAT 1st | | 0.00 | 1.20 | 0.80 |
| 0838600 | Lights, Side Basket, WIn, I2SM# DUO, 100AAT 1st | | 0.00 | 1.20 | 0.80 |
| 0890017 | Lights, HiViz FT-MB-24-**-*GWA0011, 31.11", Brkt Fet 2nd | | 0.00 | 0.00 | 9.37 |
| 0895290 | Siren, Federal Q2B, VEL, 100AAT | | 0.00 | 100.00 | 0.00 |
| 0898142 | Lights, HiViz FT-MB-24-**-*GWA0011, 31.11", Brkt Fet 1st | | 0.00 | 0.00 | 9.37 |
| 0741239 | HVAC, Heavy-Duty, Impel/Velocit FR, CARE | Load Managed | 0.00 | 0.00 | 136.00 |
| 0002615 | Switch, Aerial 12V Master | NFPA | 0.08 | 0.00 | 0.00 |

* UDMC = User Defined Mission Critical, LM = User Defined Load Managed, S = Electrical Amperage Supply



Electrical Analysis

1/5/2026

Bid #: 1384 **Job #:**
Desc: Mid Mount, Velocity - 2018 **Sales Rep:** Doucette, Duane
Customer: Denver, City and County-DIA **Organization:** Front Range Fire Apparatus, Ltd
Option: Pierce Command Zone, Advanced Electronics & Control System, Vel WiFi CZT **Type:** Multiplexed

| Option | Description | Type* | Minimum Load | Intermittent Load | Total Connected |
|---------|--|-------|--------------|-------------------|-----------------|
| 0002758 | Amp Draw, NFPA/ULC Radio Allowance | NFPA | 5.00 | 0.00 | 0.00 |
| 0016924 | Intercom, 2-Way Atkinson (PAP) | NFPA | 3.00 | 0.00 | 0.00 |
| 0068703 | Lights, Grote Supernova LED, Stabilizer Beam, (1) Set | NFPA | 1.60 | 0.00 | 0.00 |
| 0086971 | Flowmeter, Waterway, MUX, PAP | NFPA | 0.50 | 0.00 | 0.00 |
| 0088745 | Light, Rear Zone Up, WIn L31H*F LED Beacon, Red LED | NFPA | 3.20 | 4.80 | 0.00 |
| 0092582 | Load Manager/Sequencer, MUX | NFPA | 0.56 | 0.56 | 0.00 |
| 0540679 | Lights, Side Zone Lower, WIn M6*C LED, Clear Lens 2pr | NFPA | 3.60 | 5.40 | 0.00 |
| 0540743 | Lights, Stabilizer Warn (2) Sets, WIn M6*C LED, Clear Lens | NFPA | 3.60 | 5.40 | 0.00 |
| 0555915 | Wiper Control, 2-Speed with Intermittent, MUX, Impel/Velocit | NFPA | 2.10 | 8.40 | 0.00 |
| 0564655 | Lights, Rear Zn Lwr, WIn M6*C LED, Clear Lens, For Tail Lt | NFPA | 1.80 | 2.70 | 0.00 |
| 0568369 | Cab Instruments, Ivory Gauges, Chrome Bezels, Impel/Velocit | NFPA | 1.26 | 0.00 | 0.00 |
| 0586382 | Gauges, Engine, Included With Pressure Controller | NFPA | 0.30 | 0.00 | 0.00 |
| 0587033 | Air Dryer, Brake, AD-9 w/heat, 2010 | NFPA | 4.70 | 0.00 | 0.00 |
| 0595087 | DEF Tank, 4.5 Gallon, LS Fill, Forward of Rear Axle | NFPA | 0.60 | 11.40 | 0.00 |
| 0605126 | Pump Shift, Air Mnl Override, Split Shaft, Interlocked, Waterous | NFPA | 1.00 | 0.00 | 0.00 |
| 0620054 | Light, Directional/Marker, Intermediate, Weldon 9186-8580-29 | NFPA | 0.10 | 0.90 | 0.00 |
| 0646614 | Cabinet, (2) Rr Fcng, Overhead, 22 W x 10 H x 34 D, Imp/Vel FR | NFPA | 0.22 | 0.22 | 0.00 |
| 0647638 | Lights, Dome, Weldon Dual LED 4 Lts | NFPA | 0.80 | 0.80 | 0.00 |
| 0648074 | Lights, Clearance/Marker/ID, Front, P25 LED 7 Lts | NFPA | 0.49 | 0.00 | 0.00 |
| 0648425 | Light, Directional, WIn 600 Cmb, Cab Crn, Wrp Bzl Out HD Lts, | NFPA | 0.70 | 0.70 | 0.00 |
| 0653937 | Flasher, Headlight Alternating | NFPA | 0.08 | 0.00 | 0.00 |
| 0667186 | Light, Slide-Out Pump Operator Step, OSS Access LED, Short | NFPA | 0.65 | 0.00 | 0.00 |
| 0668315 | Cab, Velocity FR, 7010 Raised Roof | NFPA | 6.80 | 10.20 | 0.00 |
| 0670831 | Lights, Clearance/Marker/ID, Rear, P25 LED 7Lts, 100AAT | NFPA | 0.25 | 0.25 | 0.50 |
| 0729276 | Lights, Hose Bed, Front/Rear, Light Strips, AAT | NFPA | 1.36 | 0.00 | 0.00 |
| 0731813 | Hour Meter, Aerial, Included in Information Centers, ASL, AAT, | NFPA | 0.10 | 0.00 | 0.00 |
| 0735865 | Step Illumination, Pump Panel Light Shield, 100AAT, w/Pump | NFPA | 1.75 | 0.00 | 0.00 |
| 0735892 | Light Shield, S/S LS & RS, 100AAT, Std LED | NFPA | 2.10 | 0.00 | 0.00 |
| 0739224 | Indicator Light @ Pump Panel, Throttle Ready, Incl w/Pressure | NFPA | 0.10 | 0.00 | 0.00 |
| 0740163 | Lights, Tracking, WIn MPB* LED, 100AAT 2lts, Swt Feature | NFPA | 7.00 | 0.00 | 0.00 |
| 0745568 | Indicator Light, Pump Panel, Ok To Pump, Green | NFPA | 0.10 | 0.00 | 0.00 |
| 0748759 | Lightbar, WIn, Freedom IV-Q, 92", RR_RR_RR_Opt_BB_BB_RR | NFPA | 4.48 | 0.20 | 11.92 |
| 0750002 | Light, Tip, HiViz FT-MB-2.18-*-* 20.6" FT-MBKIT-PX, Frnt of Bskt | NFPA | 14.06 | 0.00 | 0.00 |
| 0750438 | Water Level Gauge, WIn PSTANK2, LED 1-Light, 4-Level | NFPA | 1.60 | 0.00 | 0.00 |
| 0757359 | Gauge, Water Level, Class 1, Pierce Std, Remote Module Driver | NFPA | 1.23 | 0.00 | 0.00 |
| 0760474 | Light, Traffic Directing, WIn TAM65 36" Long LED, Clr Lenses | NFPA | 1.26 | 2.52 | 0.00 |
| 0762387 | Lights, Stabilizer Scene, (3) sets, Amdor AY-LB-12HW012, | NFPA | 1.08 | 0.00 | 0.00 |
| 0763190 | Lights, Perimeter Body, Amdor AY-LB-12HW012 LED 3lts | NFPA | 0.54 | 0.00 | 0.00 |
| 0766602 | Lights, Torque Box Ladder Storage, Pierce LED Strip Lights, 2 | NFPA | 1.00 | 0.00 | 0.00 |
| 0767535 | Light, Turntable Console, TecNiq E-10, LED | NFPA | 0.36 | 0.00 | 0.00 |
| 0769564 | Lights, Perimeter Pump House, Amdor AY-LB-12HW020 LED 1lt | NFPA | 0.30 | 0.00 | 0.00 |
| 0771866 | Aerial, Ascendant 100' Aerial Tower | NFPA | 5.00 | 0.00 | 0.00 |
| 0780945 | Light, Airport, WIn L41AP LED, Amber Beacon, Denver | NFPA | 3.00 | 0.00 | 0.00 |
| 0782130 | Cabinet, Fwd Fcng, RS, 21 W x 64 H x 14 D, Roll, Imp/Vel | NFPA | 0.64 | 0.64 | 0.00 |
| 0782296 | Cabinet, Fwd Fcng, LS, 21 W x 64 H x 14 D, Roll, Imp/Vel | NFPA | 0.64 | 0.64 | 0.00 |
| 0783153 | Headlights, Rect LED, JW Spkr Evo 2, AXT/Enf/Imp/Sab/Vel | NFPA | 4.20 | 4.20 | 0.00 |
| 0801894 | Trans, Allison 6th Gen, 4500 EVS PR, w/Prognostics, | NFPA | 2.00 | 2.00 | 0.00 |
| 0804514 | Lights, Tail, WIn M62BTT* Red Stop/Tail & M62T* Amber Dir Arw | NFPA | 0.83 | 2.49 | 0.00 |

* UDMC = User Defined Mission Critical, LM = User Defined Load Managed, S = Electrical Amperage Supply



Electrical Analysis

1/5/2026

Bid #: 1384 **Job #:**
Desc: Mid Mount, Velocity - 2018 **Sales Rep:** Doucette, Duane
Customer: Denver, City and County-DIA **Organization:** Front Range Fire Apparatus, Ltd
Option: Pierce Command Zone, Advanced Electronics & Control System, Vel WiFi CZT **Type:** Multiplexed

| Option | Description | Type* | Minimum Load | Intermittent Load | Total Connected |
|---------------------|---|-------|---------------|-------------------|-----------------|
| 0808504 | Engine, Cummins X15, 605 hp, 1850 lb-ft, W/OBD, EPA 2027, | NFPA | 6.00 | 0.00 | 0.00 |
| 0814201 | Vehicle Information Center, 7" Color Display, Touchscreen, MUX, | NFPA | 1.20 | 0.00 | 0.00 |
| 0814210 | Control Stations, 100AAT, CL714 | NFPA | 4.26 | 0.00 | 0.00 |
| 0815152 | Lights, Basket Interior, 100AAT | NFPA | 0.81 | 0.00 | 0.00 |
| 0817254 | Lights, Perimeter Cab, Amdor AY-LB-12HW0** LED 4Dr | NFPA | 1.20 | 0.00 | 0.00 |
| 0826104 | Controller, Pressure, FRC, Pump Boss Max, PBA500 | NFPA | 1.80 | 0.00 | 0.00 |
| 0827162 | Cabinet, Rear Facing, LS, 22.25 W x 26 H x 30.50 D, Radius | NFPA | 0.26 | 0.26 | 0.00 |
| 0827174 | Cabinet, Rr Fcng, Top Eng Tnl, 41.5 W x 16 H x 30 D,Rad | NFPA | 0.21 | 0.21 | 0.00 |
| 0889577 | Bracket, License Plate & Light, P25 LED, Stainless Brkt | NFPA | 0.07 | 0.00 | 0.00 |
| 0889980 | Lights, Step (3), P25 LED, One Side | NFPA | 0.15 | 0.00 | 0.00 |
| 0892637 | Lights, Cab & Crw Cab Acs Stps, P25, LED w/Bezel, 1Lt Per Step | NFPA | 1.00 | 0.00 | 0.00 |
| 0892706 | Lights, Walk Surf, FRP Flood, P25 LED, 100AAT | NFPA | 0.50 | 0.00 | 0.00 |
| 0894586 | Lights, Step (4), P25, Ladder Style Access Steps, Both Sides | NFPA | 0.35 | 0.00 | 0.00 |
| 0898734 | Light, Front Zone, Wln M6** M6** M6** M6** Q Bzl | NFPA | 1.80 | 5.40 | 1.80 |
| 0647728 | Alternator, 430 amp, Delco Remy 55SI | S | 0.00 | 0.00 | 0.00 |
| Load Totals: | | | 117.33 | 416.89 | 334.48 |

Note: Minimum Continuous Load is in "Blocking Right of Way" mode.(Reference current edition of NFPA 1901)
 Note: Intermittent Load items are not factored in on any alternator load comparisons. These items are included on the report for reference only and should be looked at as amp draw exclusion items. (Reference current edition of NFPA 1901)
 Note: Total Connected Load "Demand" represents Total Connected Load minus any Load Managed items

Alternator Output at Idle: 259.00

| Minimum Continuous Load | |
|-------------------------|--------|
| Supply: | 259.00 |
| Demand: | 117.33 |
| Variance: | 141.67 |

Alternator Output at Governed Speed: 371.00

| Total Connected Load | |
|----------------------|--------|
| Supply: | 371.00 |
| Demand: | 315.81 |
| Variance: | 55.19 |

* UDMC = User Defined Mission Critical, LM = User Defined Load Managed, S = Electrical Amperage Supply



DENVER INTERNATIONAL AIRPORT PIERCE 100' HEAVY DUTY AERIAL TOWER



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DENVER INTERNATIONAL AIRPORT PIERCE 100' HEAVY DUTY AERIAL TOWER

Front Range Fire Apparatus is pleased to submit to Denver Fire Department for a **Pierce® 100' Heavy Duty Aerial Tower** per your request for quotation. The following paragraphs will describe in detail the apparatus, construction methods, and equipment. This document will indicate size, type, model and make of components parts and equipment, providing proof of compliance with each and every item (except where noted) in the departments advertised specifications.

PIERCE MANUFACTURING was founded in 1913. Since then, we have been building bodies with one philosophy, "BUILD THE FINEST". Our skilled craftsmen take pride in their work which is reflected in the final product. We have been building fire apparatus since the early "forties" giving Pierce Manufacturing over 75 years of experience in the fire apparatus market. Pierce Manufacturing has built and put into service more than 62,500 apparatus, including more than 33,900 on Pierce custom chassis designed and built specifically for fire and emergency applications. Our Appleton, Wisconsin facility has over 870,000 total square feet of floor space situated on approximately 105 acres of land. Our Bradenton, Florida facility has 300,000 square feet of floor space situated on approximately 38 acres of land.

Our beliefs in high ethical standards are carried through in all of our commitments and to everyone with whom we do business. Honesty, Integrity, Accountability and Citizenship are global tenets by which we all live and work. Consequently, we neither engage in, nor have we ever been convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market.

Pierce has only one brand of fire apparatus "Pierce", ensuring you are receiving top of the line product that meets your specification.

In accordance with the current edition of applicable NFPA standards, this document will specify whether the fire department, manufacturer, or apparatus dealership will provide required loose equipment.

Images and illustrative material in this document are as accurate as known at the time of publication but are subject to change without notice. Images and illustrative material are for reference only, and may include optional equipment and accessories and may not include all standard equipment.

GENERAL DESIGN AND CONSTRUCTION

To control quality, ensure compatibility, and provide a single source for service and warranty, the custom cab, chassis, pump module and body will be entirely designed, assembled/welded and painted in Pierce owned manufacturing facilities. This includes, but not limited to the cab weldment, the pumphouse module assembly, the chassis assembly, the body and the electrical system.

QUALITY AND WORKMANSHIP

Pierce has set the pace for quality and workmanship in the fire apparatus field. Our tradition of building the highest quality units with craftsmen second to none has been the rule right from the beginning and we demonstrate that ongoing commitment by: Ensuring all steel welding follows American Welding Society D1.1-2004 recommendations for structural steel welding. All aluminum welding follows American Welding society and ANSI D1.2-2003 requirements for structural welding of aluminum. All sheet metal welding follows American welding Society B2.1-2000 requirements for structural welding of sheet metal. Our flux core arc welding uses alloy rods, type 7000 and is performed to American Welding



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Society standards A5.20-E70T1. Furthermore, all employees classified as welders are tested and certified to meet the American welding Society codes upon hire and every three (3) years thereafter. Pierce also employs an American Welding Society certified welding inspector in plant during working hours to monitor weld quality.

Pierce Manufacturing operates a Quality Management System under the requirements of ISO 9001. These standards sponsored by the International Organization for Standardization (ISO) specify the quality systems that are established by the manufacturer for design, manufacture, installation and service. A copy of the certificate of compliance is included with this document.

In addition to the Quality Management system, we also employ a Quality Achievement Supplier program to ensure the vendors and suppliers that we utilize meet the high standards we demand. That is just part of our overall "Quality at the Source" program at Pierce.

To demonstrate the quality of our products and services, a list of at least ten (10) fire departments/municipalities that have purchased vehicles for a second time is provided.

DELIVERY

The apparatus will be delivered under its own power to ensure proper break-in of all components while the apparatus is still under warranty. A qualified delivery representative shall deliver the apparatus and remain for a sufficient length of time to instruct personnel in proper operation, care and maintenance of the equipment delivered.

MANUAL AND SERVICE INFORMATION

At time of delivery, complete operation and maintenance manuals covering the apparatus will be provided. A permanent plate will be mounted in the driver's compartment specifying the quantity and type of fluids required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.

SAFETY VIDEO

At the time of delivery Pierce will also provide one (1) 39-minute, professionally produced apparatus safety video, in DVD format. A link to the video is also available on the Pierce Training website. This video will address key safety considerations for personnel to follow when they are driving, operating, and maintaining the apparatus, including the following: vehicle pre-trip inspection, chassis operation, pump operation, aerial operation, and safety during maintenance.

PERFORMANCE TESTS

A road test will be conducted with the apparatus fully loaded and a continuous run of no less than ten (10) miles. During that time the apparatus will show no loss of power, nor will it overheat. The transmission drive shaft or shafts and the axles will run quietly and be free of abnormal vibration or noise. The apparatus when fully loaded will not have less than 25 percent nor more than 50 percent on the front axle, and not less than 50 percent nor more than 75 percent on the rear axle. The apparatus will meet the current edition of applicable NFPA standards acceleration and braking requirements.



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SERVICE AND WARRANTY SUPPORT

Pierce dealership support will be provided by Front Range Fire Apparatus by operating a Pierce authorized service center. The service center will have factory-trained mechanics on staff versed in Pierce fire apparatus. The service facility will be located within fifty (50) miles of the fire department.

In addition to the dealership, Pierce has service facilities located in both, Weyauwega, Wisconsin and Bradenton, Florida. Pierce also maintains a dedicated parts facility of over 100,000 square feet in Appleton, Wisconsin. The parts facility stocks in excess of \$5,000,000 in parts dedicated to service and replacement parts. The parts facility employs a staff dedicated solely for the distribution and shipment of service and replacement parts.

Service parts for the apparatus being can be found via Pierceparts.com which, is an interactive online tool that delivers information regarding your specific apparatus as well as the opportunity to register for training classes.

As a Pierce customer you have the ability to view the complete bill of materials for your specific apparatus, including assembly drawings, piece part drawings, and beneficial parts notations. You will also have the ability to search the complete Pierce item master through a parts search function which offers all Pierce SKU's and descriptions offered on all Pierce apparatus. Published component catalogs, which include proprietary systems along with an extensive operator's manual library is available for easy reference.

Pierce Manufacturing maintains a dedicated service and warranty staff of over 35 personnel, dedicated to customer support, which also maintains a 24 hour 7 day a week toll free hot line, four (4) on staff EVT's, and offers hands-on repair and maintenance training classes multiple times a year.

LIABILITY

The successful bidder will defend any and all suits and assume all liability for the use of any patented process including any device or article forming a part of the apparatus or any appliance furnished under the contract.

INSURANCE PROVIDED BY BIDDER

Commercial General Liability Insurance

The successful bidder will, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of commercial general liability insurance:

| | |
|--|-------------|
| Each Occurrence: | \$1,000,000 |
| Products/Completed Operations Aggregate: | \$1,000,000 |
| Personal and Advertising Injury: | \$1,000,000 |
| General Aggregate: | \$2,000,000 |



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Coverage will be written on a Commercial General Liability form. The policy will be written on an occurrence form and will include Contractual Liability coverage for bodily injury and property damage subject to the terms and conditions of the policy. The policy will include Owner as an additional insured when required by written contract.

Commercial Automobile Liability Insurance

The successful bidder will, during the performance of the contract, keep in force at least the following minimum limits of commercial automobile liability insurance and coverage will be written on a Commercial Automobile liability form:

| | |
|--------------------------------------|-------------|
| Each Accident Combined Single Limit: | \$1,000,000 |
|--------------------------------------|-------------|

Umbrella/Excess Liability Insurance

The successful bidder will, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of umbrella liability insurance:

| | |
|------------------|-------------|
| Aggregate: | \$3,000,000 |
| Each Occurrence: | \$3,000,000 |

The umbrella policy will be written on an occurrence basis and at a minimum provide excess to the bidder's General Liability and Automobile Liability policies.

The required limits can be provided by one (1) or more policies provided all other insurance requirements are met.

Coverage will be provided by a carrier(s) rated A- or better by A.M. Best.

All policies will provide a 30-day notice of cancellation to the named insured. The Certificate of Insurance will provide the following cancellation clause: Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

Bidder agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with the bid. The certificate will show the purchaser as certificate holder.

INSURANCE PROVIDED BY MANUFACTURER

Product Liability Insurance

The manufacturer will, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of Product Liability insurance:

| | |
|------------------|-------------|
| Each Occurrence: | \$1,000,000 |
|------------------|-------------|



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| | |
|--|-------------|
| Products/Completed Operations Aggregate: | \$1,000,000 |
|--|-------------|

Coverage will be written on a Commercial General Liability form. The policy will be written on an occurrence form. The manufacturer's policy will include the owner as additional insured when required by written contract between the Owner and a Pierce authorized dealer.

Umbrella/Excess Liability Insurance

The manufacturer will, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of umbrella liability insurance:

| | |
|------------------|--------------|
| Each Occurrence: | \$25,000,000 |
| Aggregate: | \$25,000,000 |

The umbrella policy will be written on an occurrence basis and provide excess to the manufacturer's General Liability/Products policies.

The required limits can be provided by one (1) or more policies provided all other insurance requirements are met.

Coverage will be provided by a carrier(s) rated A- or better by A.M. Best.

All policies will provide a 30-day notice of cancellation to the named insured. The Certificate of Insurance will provide the following cancellation clause: Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

Manufacturer agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with the bid. The certificate will show the purchaser as the certificate holder.

SINGLE SOURCE MANUFACTURER

Pierce Manufacturing, Inc. provides an integrated approach to the design and manufacture of our products that delivers superior apparatus and a dedicated support team. From our facilities, the chassis, cab weldment, cab, pump house (including the sheet metal enclosure, valve controls, piping and operators panel) body and aerial device will be entirely designed, tested, and hand assembled to the customer's exact specifications. The electrical system either hardwired or multiplexed, will be both designed and integrated by Pierce Manufacturing. The warranties relative to these major components (excluding component warranties such as engine, transmission, axles, pump, etc.) will be provided by Pierce as a single source manufacturer. Pierce's single source solution adds value by providing a fully engineered product that offers durability, reliability, maintainability, performance, and a high level of quality.

Your apparatus will be manufactured in Appleton, Wisconsin.



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SPECIAL INSTRUCTIONS

The apparatus being will be designed and built to match the Velocity 100' Platform job #30830 in some aspects, pictures provided. However, some variation may be necessary due to changes in our manufacturing processes or our product offering. Revisions in NFPA guidelines and/or other regulations may also affect our ability to match the previous unit.

NFPA 2024 STANDARDS

This unit will comply with the NFPA standards effective January 1, 2024, except for fire department directed exceptions. These exceptions will be set forth in the Statement of Exceptions.

Certification of slip resistance of all stepping, standing and walking surfaces will be supplied with delivery of the apparatus.

All horizontal surfaces designated as a standing or walking surface that are greater than 48.00" above the ground must be defined by a 1.00" wide line along its outside perimeter. Perimeter markings and designated access paths to destination points will be identified on the customer approval print and are shown as approximate. Actual location(s) will be determined based on materials used and actual conditions at final build. Access paths may pass through hose storage areas and opening or removal of covers or restraints may be required. Access paths may require the operation of devices and equipment such as the aerial device or ladder rack.

A plate that is highly visible to the driver while seated will be provided. This plate will show the overall height, length, and gross vehicle weight rating.

The manufacturer will have programs in place for training, proficiency testing and performance for any staff involved with certifications.

An official of the company will designate, in writing, who is qualified to witness and certify test results.

NFPA COMPLIANCY

Apparatus by the bidder will meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in current edition at time of contract execution. Fire department's specifications that differ from NFPA specifications will be indicated in the document as "non-NFPA".

INSPECTION CERTIFICATE

A third party inspection certificate for the aerial device will be furnished upon delivery of the aerial device. The certificate will be Underwriters Laboratories Inc. Type 1 and will indicate that the aerial device has been inspected on the production line and after final assembly.

Visual structural inspections will be performed on all welds on both aluminum and steel ladders.

On critical weld areas, or on any suspected defective area, the following tests will be conducted:

- Magnetic particle inspection will be conducted on steel aerials to assure the integrity of the weldments and to detect any flaws or weaknesses. Magnets will be placed on each side of the



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weld while iron powder is placed on the weld itself. The powder will detect any crack that may exist. This test will conform to ASTM E709 and be performed prior to assembly of the aerial device.

- A liquid penetrant test will be conducted on aluminum aerials to assure the integrity of the weldments and to detect any flaws or weaknesses. This test will conform to ASTM E165 and be performed prior to assembly of the aerial device.
- Ultrasonic inspection will be conducted on all aerials to detect any flaws in pins, bolts and other critical mounting components.

In addition to the tests above, functional tests, load tests, and stability tests will be performed on all aerials. These tests will determine any unusual deflection, noise, vibration, or instability characteristics of the unit.

PUMP TEST

The pump will be tested, approved and certified by Underwriter's Laboratory at the manufacturer's expense. The test results and the pump manufacturer's certification of hydrostatic test; the engine manufacturer's certified brake horsepower curve; and the manufacturer's record of pump construction details will be forwarded to the Fire Department.

GENERATOR TEST

If the unit has a generator, the generator will be tested, approved, and certified by Underwriters Laboratories at the manufacturer's expense. The test results will be provided to the Fire Department at the time of delivery.

BREATHING AIR TEST

If the unit has breathing air, Pierce Manufacturing will draw an air sample from the air system and certify that the air quality meets the requirements of NFPA 1989, *Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection*.

VEHICLE INSPECTION PROGRAM CERTIFICATION

To assure the vehicle is built to current NFPA 1900 standards, the apparatus, in its entirety, will be third-party, independent, audit-certified through Underwriters Laboratory (UL) that it is built and complies to all applicable standards in the current edition. The certification includes: all design, production, operational, and performance testing of not only the apparatus, but those components that are installed on the apparatus.

A placard will be affixed in the driver's side area stating the third party agency, the date, the standard and the certificate number of the whole vehicle audit.

INSPECTION TRIP #1

An inspection trip will be provided for two (2) people. Trip will take place at customer location for a preconstruction conference. .



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INSPECTION TRIP #2

An inspection trip will be provided for two (2) people. Trip will take place at the factory for a post paint inspection. .

INSPECTION TRIP #3

An inspection trip will be provided for two (2) people. Trip will take place at the factory for a delivery inspection. .

PRODUCT CHANGES AND IMPROVEMENTS

Our components and processes, as described in this document document, are as accurate as known at the time of bid submission, but are subject to change for the purpose of product or process improvements, or changes in industry standards providing the change does not affect the meaning or definition of the bid specifications.

BID BOND NOT REQUESTED

A bid bond will not be included. If requested, the following will apply:

All bidders will provide a bid bond as security for the bid in the form of a 5 percent bid bond to accompany their bid. This bid bond will be issued by a Surety Company who is listed on the U.S. Treasury Departments list of acceptable sureties as published in Department Circular 570. The bid bond will be issued by an authorized representative of the Surety Company and will be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond will include language, which assures that the bidder/principal will give a bond or bonds as may be specified in the bidding or contract documents, with good and sufficient surety for the faithful performance of the contract, including the Basic One (1) Year Limited Warranty, and for the prompt payment of labor and material furnished in the prosecution of the contract.

Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle will apply only to the Basic One (1) Year Limited Warranty for such vehicle. Any surety bond related to the sale of a vehicle will not apply to any other warranties that are included within this bid (OEM or otherwise) or to the warranties (if any) of any third party of any part, component, attachment or accessory that is incorporated into or attached to the vehicle. In the event of any contradiction or inconsistency between this provision and any other document or assertion, this provision will prevail.

PERFORMANCE BOND NOT REQUESTED

A performance bond will not be included. If requested at a later date, one will be provided to you for an additional cost and the following will apply:

The successful bidder will furnish a Performance and Payment bond (Bond) equal to 100 percent of the total contract amount within 30 days of the notice of award. Such Bond will be in a form acceptable to the Owner and issued by a surety company included within the Department of Treasury's Listing of Approved Sureties (Department Circular 570) with a minimum A.M. Best Financial Strength Rating of A and Size Category of XV. In the event of a bond issued by a surety of a lesser Size Category, a minimum Financial Strength rating of A+ is required.



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Bidder and Bidder's surety agree that the Bond issued hereunder, whether expressly stated or not, also includes the surety's guarantee of the vehicle manufacturer's Bumper to Bumper warranty period included within this document. Owner agrees that the penal amount of this bond will be simultaneously amended to 25 percent of the total contract amount upon satisfactory acceptance and delivery of the vehicle(s) included herein. Notwithstanding anything contained within this contract to the contrary, the surety's liability for any warranties of any type will not exceed three (3) years from the date of such satisfactory acceptance and delivery, or the actual Bumper to Bumper warranty period, whichever is shorter.

Due to global supply chain constraints, any delivery date contained herein is a good faith estimate as of the date of this order/contract, and merely an approximation based on current information. Delivery updates will be made available, and a final firm delivery date will be provided as soon as possible.

If the Producer Price Index of Components for Manufacturing [www.bls.gov Series ID: WPUID6112] ("PPI") has increased at a compounded annual growth rate of 5.0% or more between the month Pierce accepts the order ("Order Month") and a month 14 months prior to the then predicted Ready For Pickup date ("Evaluation Month"), then pricing may be updated in an amount equal to the increase in PPI over 5.0% for each year or fractional year between the Order Month and the Evaluation Month. The seller will document any such updated price for the customer's approval before proceeding and provide an option to cancel the order.

APPROVAL DRAWING

A drawing of the apparatus will be prepared and provided to the purchaser for approval before construction begins. The Pierce sales representative will also be provided with a copy of the same drawing. The finalized and approved drawing will become part of the contract documents. This drawing will indicate the chassis make and model, location of the lights, siren, horns, compartments, major components, etc.

A "revised" approval drawing of the apparatus will be prepared and submitted by Pierce to the purchaser showing any changes made to the approval drawing.

FINAL DRAWING

There will be a revised drawing of the truck with all the changes made during production provided at pickup.

ELECTRICAL WIRING DIAGRAMS

Two (2) electrical wiring diagrams, prepared for the model of chassis and body, will be provided.

VELOCITY CHASSIS

The Pierce Velocity® is the custom chassis developed exclusively for the fire service. Chassis provided will be a new, tilt-type custom fire apparatus. The chassis will be manufactured in the apparatus body builder's facility eliminating any split responsibility. The chassis will be designed and manufactured for heavy-duty service, with adequate strength and capacity for the intended load to be sustained and the type of service required. The chassis will be the manufacturer's first line tilt cab.



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MAXIMUM OVERALL HEIGHT

The maximum overall height of the apparatus will be 11'11".

WHEELBASE

The wheelbase of the vehicle will be 250.50".

GVW RATING

The gross vehicle weight rating will be 84,000 pounds.

FRAME

The chassis frame will be built with two (2) steel channels bolted to five (5) cross members or more, depending on other options of the apparatus. The side rails will have a 13.38" tall web over the front and mid sections of the chassis, with a continuous smooth taper to 10.75" over the rear axle. Each rail will have a section modulus of 25.992 cubic inches and a resisting bending moment (rbm) of 3,119,040 in-lb over the critical regions of the frame assembly, with a section modulus of 18.96 cubic inches with an rbm of 2,275,200 in-lb over the rear axle. The frame rails will be constructed of 120,000 psi yield strength heat-treated 0.38" thick steel with 3.50" wide flanges.

FRAME REINFORCEMENT

In addition, a mainframe internal liner will be provided. The liner will be an internal "C" design that steps to an internal "L" design over the rear axle. It will be heat-treated steel measuring 12.50" x 3.00" x 0.25" through the front portion of the liner, stepping to 9.38" x 3.00" x 0.25" through the rear portion of the liner. Each liner will have a section modulus of 13.58 cubic inches, yield strength of 110,000 psi, and rbm of 1,494,042 in-lb. Total rbm at wheelbase center will be 4,391,869 in-lb.

The frame liner will be mounted inside of the chassis frame rail and extend the full length of the frame.

FRONT NON DRIVE AXLE

The Oshkosh TAK-4® front axle will be of the independent suspension design with a ground rating of 24,000 lb.

Upper and lower control arms will be used on each side of the axle. Upper control arm castings will be made of 100,000-psi yield strength 8630 steel and the lower control arm casting will be made of 55,000-psi yield ductile iron.

The center cross members and side plates will be constructed out of 80,000-psi yield strength steel.

Each control arm will be mounted to the center section using elastomer bushings. These rubber bushings will rotate on low friction plain bearings and be lubricated for life. Each bushing will also have a flange end to absorb longitudinal impact loads, reducing noise and vibrations.

There will be nine (9) grease fittings supplied, one (1) on each control arm pivot and one (1) on the steering gear extension.



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The upper control arm will be shorter than the lower arm so that wheel end geometry provides positive camber when deflected below rated load and negative camber above rated load.

Camber at load will be 0 degrees for optimum tire life.

The ball joint bearing will be of low friction design and be maintenance free.

Toe links that are adjustable for alignment of the wheel to the center of the chassis will be provided.

The wheel ends must have little to no bump steer when the chassis encounters a hole or obstacle.

The steering linkage will provide proper steering angles for the inside and outside wheel, based on the vehicle wheelbase.

The axle will have a turning angle of up to 45 degrees.

FRONT SUSPENSION

Front Oshkosh TAK-4™ independent suspension will be provided with a minimum ground rating of 24,000 lb.

The independent suspension system has been designed to provide maximum ride comfort. The design will allow the vehicle to travel at highway speeds over improved road surfaces and at moderate speeds over rough terrain with minimal transfer of road shock and vibration to the vehicle's crew compartment.

Each wheel will have a torsion bar type spring. In addition, each front wheel end will also have energy absorbing jounce bumpers to prevent bottoming of the suspension.

The suspension design will be such that there is at least 10.00" of total wheel travel and a minimum of 3.75" before suspension bottoms.

The torsion bar anchor lock system allows for simple lean adjustments, without the use of shims. One can adjust for a lean within 15 minutes per side. Anchor adjustment design is such that it allows for ride height adjustment on each side.

The independent suspension was put through a durability test that simulated 140,000 miles of inner city driving.

FRONT SHOCK ABSORBERS

KONI heavy-duty telescoping shock absorbers will be provided on the front suspension.

FRONT OIL SEALS

Oil seals with viewing window will be provided on the front axle.

FRONT TIRES

Front tires will be Michelin 425/65R22.50 radials, 20 ply all-position XZY3 wide base tread, rated for 24,400 lb maximum axle load and 65 mph maximum speed.



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The tires will be mounted on Alcoa 22.50" x 12.25" polished aluminum disc type wheels with a ten (10) stud, 11.25" bolt circle.

REAR AXLE

The rear axle will be a Meritor™, Model RT58-185, tandem axle assembly with a capacity of 58,000 lb.

An inter-axle differential, which divides torque evenly between axles, will be provided on the rear axle with an indicator light mounted on the cab instrument panel.

TOP SPEED OF VEHICLE

A rear axle ratio will be furnished to allow the vehicle to reach a top speed of 60 mph/96KPH.

REAR SUSPENSION

Rear suspension will be a Hendrickson Model FMX 622 EX, air ride with a ground rating of 62,000 lb. The suspension will have the following features:

- Outboard vertical mounted heavy-duty shock absorbers
- Utilizes track bars and torque rods to restrict lateral axle movement and maintain constant pinion angles
- Super heavy-duty transverse beam to help reduce axle stress while increasing roll stability or resistance to lean
- Low spring rate air springs for excellent ride quality
- Dual height control valves to maintain level vehicle from side to side

REAR OIL SEALS

Oil seals will be provided on the rear axle(s).

REAR TIRES

The rear tires will be eight (8) Michelin 315/80R22.50 radials, 20 ply "on/off road" XDN2 GRIP tread, rated for 66,160 lb maximum axle load and 75 mph maximum speed.

The tires will be mounted on Alcoa® 22.50" x 9.00" polished aluminum disc wheels with a ten (10) stud 11.25" bolt circle.

TIRE BALANCE

All tires will be balanced with Counteract balancing beads. The beads will be inserted into the tire and eliminate the need for wheel weights.

TIRE PRESSURE MANAGEMENT

There will be a RealWheels LED AirSecure™ tire alert pressure management system provided, that will monitor each tire's pressure. A sensor will be provided on the valve stem of each tire for a total of 10 tires.



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The sensor will calibrate to the tire pressure when installed on the valve stem for pressures between 10 and 200 psi. The sensor will activate an integral battery operated LED when the pressure of that tire drops 5 to 8 psi.

Removing the cap from the sensor will indicate the functionality of the sensor and battery. If the sensor and battery are in working condition, the LED will immediately start to flash.

MUD FLAPS

Mud flaps with a Pierce logo will be installed behind the front and rear wheels.

TIRE, AIR PRESSURE EQUALIZATION

A Crossfire air pressure equalization system will be provided on the rear dual wheels. This system will equalize the tire air pressure in the rear duals.

AUTOMATIC TIRE CHAINS

One (1) pair of Onspot automatic tire chains will be provided at the rear. System will be electric over air operated with a locking switch on cab instrument panel. System may be engaged at speeds up to 25 mph and operated at speeds up to 35 mph.

WHEEL CHOCKS

There will be one (1) pair of folding Ziamatic, Model SAC-44-E, aluminum alloy, Quick-Choc wheel blocks, with easy-grip handle provided.

Wheel Chock Brackets

There will be one (1) pair of Zico, Model SQCH-44-H, horizontal mounting wheel chock brackets provided for the Ziamatic, Model SAC-44-E, folding wheel chocks. The brackets will be made of aluminum and consist of a quick release spring loaded rod to hold the wheel chocks in place. The brackets will be mounted rearward of the left side rear tire.

ELECTRONIC STABILITY CONTROL

A vehicle control system will be provided as an integral part of the ABS brake system from Meritor Wabco.

The system will monitor and update the lateral acceleration of the vehicle and compare it to a critical threshold where a side roll event may occur. If the critical threshold is met, the vehicle control system will automatically reduce engine RPM, engage the engine retarder (if equipped), and selectively apply brakes to the individual wheel ends of the front and rear axles to reduce the possibility of a side roll event.

The system will monitor directional stability through a lateral accelerometer, steer angle sensor and yaw rate sensor. If spinout or drift out is detected, the vehicle control system will selectively apply brakes to the individual wheel ends of the front and rear axles to bring the vehicle back to its intended direction.



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ANTI-LOCK BRAKE SYSTEM

The vehicle will be equipped with a Wabco 6S6M, anti-lock braking system. The ABS will provide a six (6) channel anti-lock braking control on both the front and rear wheels. A digitally controlled system that utilizes microprocessor technology will control the anti-lock braking system. Each wheel will be monitored by the system. When any wheel begins to lockup, a signal will be sent to the control unit. This control unit will then reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system will eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.

AUTOMATIC TRACTION CONTROL

An anti-slip feature will be included with the ABS. The Automatic Traction Control will be used for traction in poor road and weather conditions. The Automatic Traction Control will act as an electronic differential lock that will not allow a driving wheel to spin, thereby supplying traction at all times. The ABS electronic control unit (ECU) will work with the engine ECU, sharing information concerning wheel slip. Engine ECU will use information to control engine speed, allowing only as much throttle application as required for the available traction, regardless of how much the driver is asking for. An "off road traction" switch will be provided on the instrument panel. Activation of the switch will allow additional tire slip to let the truck climb out and get on top of deep snow or mud.

BRAKES

The service brake system will be full air type.

The front brakes will be Knorr/Bendix disc type with a 17.00" ventilated rotor for improved stopping distance.

The brake system will be certified, third party inspected, for improved stopping distance.

The rear brakes will be Meritor™ 16.50" x 7.00" cam operated with automatic slack adjusters. Dust shields will be provided.

BRAKE SYSTEM AIR COMPRESSOR

The air compressor will be a Cummins/WABCO with 18.7 cubic feet per minute output.

BRAKE SYSTEM

The brake system will include:

- Bendix dual brake treadle valve
- Heated automatic moisture ejector on air dryer
- Total air system capacity of 8,108 cubic inches
- Two (2) air pressure gauges with a red warning light and an audible alarm, that activates when air pressure falls below 60 psi
- Spring set parking brake system
- Parking brake operated by a push-pull style control valve
- A parking "brake on" indicator light on instrument panel



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- Park brake relay/inversion and anti-compounding valve, in conjunction with a double check valve system, will be provided with an automatic spring brake application at 40 psi
- A pressure protection valve will be provided to prevent all air operated accessories from drawing air from the air system when the system pressure drops below 80 psi (550 kPa)
- 1/4 turn drain valve on each air tank

The air tank will be primed and painted to meet a minimum 750 hour salt spray test.

The air tanks will be painted black #98.

To reduce the effects of corrosion, the air tank will be mounted with stainless steel brackets.

BRAKE SYSTEM AIR DRYER

The air dryer will be a Bendix AD-9, with heater and coalescing filter.

BRAKE LINES

Color-coded nylon brake lines will be provided. The lines will be wrapped in a heat protective loom in the chassis areas that are subject to excessive heat.

AIR INLET

One (1) air inlet with 3D series male coupling will be provided. It will allow station air to be supplied to the apparatus brake system through a shoreline hose. The inlet will be located rearward in the driver side lower step well of cab. A check valve will be provided to prevent reverse flow of air. The inlet will discharge into the "wet" tank of the brake system. A mating female fitting will also be provided with the loose equipment.

AIR OUTLET

One (1) air outlet will be installed with a female coupling and shut off valve, located in the front body compartment on driver side. This system will tie into the "wet" tank of the brake system and include an 85-psi pressure protection valve in the outlet line to prevent the brake system from losing all air.

Female coupling and male fitting will be .25" thread.

A mating male fitting will be provided with the loose equipment.

AIR HOSE

There will be two (2) 25' length(s) of air hose furnished with fittings.

An air chuck will be provided with the air hose. The air chuck will fit the valve stems that are provided on the tires.

ALL WHEEL LOCK-UP

An additional all wheel lock-up system will be installed which applies air to the front brakes only. The standard spring brake control valve system will be used for the rear.



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ADDITIONAL AIR TANK FOR AIR HORN

An additional air tank with 1,454 cubic inch displacement will be provided to increase the capacity of the air system. This tank will be dedicated for air horn use.

The air tank will be primed and painted to meet a minimum 750 hour salt spray test. To reduce the effects of corrosion, the air tank will be mounted with stainless steel brackets.

The air tank(s) will be painted black #98.

The output flow of the engine air compressor varies with engine rpm. Full compressor output is only achieved at governed engine speed. Engine speed may be limited by generators, pumps and other PTO driven options.

ENGINE

The chassis will be powered by an electronically controlled engine as described below:

| | |
|------------------|---|
| Make: | Cummins® |
| Model: | X15 |
| Power: | 605 hp at 1800 rpm |
| Torque: | 1850 lb-ft at 1000 rpm |
| Governed Speed: | 2100 rpm |
| Emissions Level: | EPA 2027 |
| Fuel: | Diesel |
| Cylinders: | Six (6) |
| Displacement: | 912 cubic inches (14.9L) |
| Starter: | Delco 39MT+™ |
| Fuel Filters: | Frame mounted spin-on style filter from Cummins®. |

The engine will include On-board diagnostics (OBD), which provides self diagnostic and reporting. The system will give the owner or repair technician access to state of health information for various vehicle sub systems. The system will monitor vehicle systems, engine and after treatment. The system will illuminate a malfunction indicator light on the dash console if a problem is detected.

The engine will be filled with FA-4 10W30 oil as required by Cummins.

REMOTE MOUNTED ENGINE FILTERS

The engine fuel and oil filters will be remote mounted for ease of maintenance.

HIGH IDLE

A high idle switch will be provided, inside the cab, on the instrument panel, that will automatically maintain a preset engine rpm. A switch will be installed, at the cab instrument panel, for activation/deactivation.



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The high idle will be operational only when the parking brake is on and the truck transmission is in neutral. A green indicator light will be provided, adjacent to the switch. The light will illuminate when the above conditions are met. The light will be labeled "OK to Engage High Idle."

ENGINE BRAKE

A Jacobs engine brake is to be installed with the controls located on the instrument panel within easy reach of the driver.

The driver will be able to turn the engine brake system on/off and have high, medium and low setting.

The high setting of the brake application will activate and work simultaneously with the variable geometry turbo (VGT) provided on the engine.

The engine brake will be installed in such a manner that when the engine brake is slowing the vehicle the brake lights are activated.

The ABS system will automatically disengage the auxiliary braking device, when required.

CLUTCH FAN

A Horton® fan clutch will be provided. The fan clutch will be automatic when the pump transmission is in "Road" position, and fully engaged in "Pump" position.

ENGINE AIR INTAKE

An air intake with an ember separator (to prevent road dirt, burning embers, and recirculating hot air from entering the engine) will be mounted at the front of the apparatus, on the passenger side of the engine. The ember separator will be mounted in the air intake with flame retardant, roto-molded polyethylene housing. It will be easily accessible by the hinged access panel at the front of the vehicle.

EXHAUST SYSTEM

The exhaust system will be stainless steel from the turbo to the engine's aftertreatment device. The exhaust system will include an aftertreatment device to meet current EPA standards. An insulation wrap will be provided on all exhaust pipe between the turbo and the aftertreatment device to minimize the transfer of heat to the cab.

The exhaust will terminate horizontally ahead of the right side rear wheels and will extend 2.00" past the body rub rail. The exhaust pipes will be aluminized steel.

There will be an aluminized steel exhaust diffuser with a standard straight tip on the end provided to reduce the temperature of the exhaust as it exits. Heat deflector shields will be provided to isolate chassis and body components from the heat of the tailpipe diffuser.

Ward No Smoke System

A Ward No Smoke 2 System is to be installed on the apparatus at the successful bidders location.



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The filter is constructed of a flow thru substrate with platinum, palladium and other compounds that allow the system to regenerate when the manufacturers' ATD regenerates. Virtually alleviating the need to change the filter. The system provides protection when it is needed most, during periods of low temperature exhaust & cold starts, low idle and on-scene use. It is at these times the manufacturers' ATD is not actively oxidizing emissions. It takes 40 to 60 minutes for the vehicle to come to temperature before allowing the ATD to begin oxidization. The NO SMOKE 2 is always on and protecting.

The purchaser understands and accepts liability for any and all changes to the engine manufactures warranty that may be created by the installation of the Ward No Smoke 2 system.

RADIATOR

The radiator and the complete cooling system will meet or exceed the current edition of applicable NFPA and engine manufacturer cooling system standards.

For maximum corrosion resistance and cooling performance, the entire radiator core will be constructed using long life aluminum alloy. The core will be made of aluminum fins, having a serpentine design, brazed to aluminum tubes. The tubes will be brazed to aluminum headers. The radiator core will have a minimum frontal area of 1434 square inches. Supply tank made of glass-reinforced nylon and a return tank of cast aluminum alloy will be crimped on to the core assembly using header tabs and a compression gasket to complete the radiator core assembly. The radiator will be compatible with commercial antifreeze solutions.

There will be a full steel frame around the entire radiator core assembly. The radiator core assembly will be isolated within the steel frame by rubber inserts to enhance cooling system durability and reliability. The radiator will be mounted in such a manner as to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven ground. The radiator assembly will be isolated from the chassis frame rails with rubber isolators.

The radiator assembly will include an integral de-aeration tank permanently mounted to the top of the radiator framework, with a readily accessible remote-mounted overflow tank. For visual coolant level inspection, the radiator will have a built-in sight glass. The radiator will be equipped with a 15 psi pressure relief cap.

A drain port will be located at the lowest point of the cooling system and/or the bottom of the radiator to permit complete flushing of the coolant from the system.

A heavy-duty fan will draw in fresh, cool air through the radiator. Shields or baffles will be provided to prevent recirculation of hot air to the inlet side of the radiator.

COOLANT LINES

Gates® silicone or a combination of silicone and rubber hoses will be used for the radiator and cab heater hoses installed by the chassis manufacturer.



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The chassis manufacturer will also use Gates® brand hose on other heater and auxiliary coolant circuits. There will be some areas in which an appropriate Gates product is not available. In those instances a comparable silicone hose from another manufacturer will be used.

Rubber hoses will be used for the overhead defrost/heater system only in the drain tubes of the cab.

Hose clamps will be stainless steel constant torque type to prevent coolant leakage. They will react to temperature changes in the cooling system and expand or contract accordingly while maintaining a constant clamping pressure on the hose.

RADIATOR SKID PLATE

A lower radiator skid plate will be supplied for protection. The skid plate will be constructed of 0.25" steel plate.

VINYL WINTER FRONT

A custom one-piece light blue vinyl winter front will be provided for use in extreme cold weather. The vinyl will cover the front cab grille and will be held in place with quarter turn fasteners. There will be an 5.50" x 16.00" opening in the center for proper ventilation.

FUEL TANK

A 65 gallon fuel tank will be provided and mounted at the rear of the chassis. The tank will be constructed of 12-gauge, hot rolled steel. It will be equipped with swash partitions and a vent. To reduce the effects of corrosion, the fuel tank will be mounted with stainless steel straps.

A 0.75" drain plug will be provided in a low point of the tank for drainage.

A fill inlet will be located on the left hand side of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Ultra Low Sulfur - Diesel Fuel Only".

A 0.50" diameter vent will be provided running from top of tank to just below fuel fill inlet.

The tank will meet all FHWA 393.67 requirements, including a fill capacity of 95 percent of tank volume.

All fuel lines will be provided as recommended by the engine manufacturer.

DIESEL EXHAUST FLUID TANK

A 4.5 gallon diesel exhaust fluid (DEF) tank will be provided and mounted in the left side body forward of the rear axle.

A 0.50" drain plug will be provided in a low point of the tank for drainage.

A fill inlet will be located on the left side of the body and be covered with a hinged, spring loaded, polished stainless steel door that is marked "Diesel Exhaust Fluid Only".

The tank will meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing.



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The tank will include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.

FUEL PRIMING PUMP

A Cummins automatic electronic fuel priming pump will be integrated as part of the engine.

FUEL COOLER

An air to fuel cooler will be installed in the engine fuel return line.

TRANSMISSION

An Allison 6th generation, Model EVS 4500PR, electronic, torque converting, automatic transmission with retarder will be provided.

The transmission will be equipped with prognostics to monitor oil life, filter life, and transmission health. A wrench icon on the shift selector's digital display will indicate when service is due.

Two (2) PTO openings will be located on left side and top of converter housing (positions eight (8) o'clock and one (1) o'clock).

A transmission temperature gauge, with amber light and audible alarm, will be installed on the cab instrument panel.

The transmission retarder control will be activated 33 percent by release of the accelerator pedal or 66 percent by slight application of the brake pedal, or 100 percent by heavy application of brake pedal. A second on/off switch is provided to activate and deactivate the auto apply portion.

The transmission will have the 1600 ft. lb. torque (medium) spring setting for retardation force.

The transmission retarder will have a master "on/off" switch on the instrument panel. A red indicator light will be provided to warn that the transmission is being overworked.

The retarder will be wired to the brake lights so they are energized when the retarder is slowing the vehicle down.

The ABS system will automatically disengage the auxiliary braking device when required.

TRANSMISSION SHIFTER

A six (6)-speed push button shift module will be mounted to right of driver on console. Shift position indicator will be indirectly lit for after dark operation.

The transmission ratio will be: 1st - 4.70 to 1.00, 2nd - 2.21 to 1.00, 3rd - 1.53 to 1.00, 4th - 1.00 to 1.00, 5th - 0.76 to 1.00, 6th - 0.67 to 1.00, R - 5.55 to 1.00.

TRANSMISSION COOLER

An externally mounted Modine bar plate transmission oil cooler will be provided using engine coolant to control the transmission oil temperature. The internal bar plates will be constructed of stainless steel.



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The cooler's housing will be constructed of 1020 steel, coated to protect from corrosion. The cooler will be tagged with information including OEM part number, vendor serial number and date / lot code.

An externally mounted Modine bar plate transmission oil cooler will be provided using engine coolant to control the transmission retarder oil temperature. The internal bar plates will be constructed of stainless steel. The cooler's housing will be constructed of 1020 steel, coated to protect from corrosion. The cooler will be tagged with information including OEM part number, vendor serial number and date / lot code.

DRIVELINE

Drivelines will be a heavy-duty metal tube and be equipped with Spicer® 1810 universal joints.

The shafts will be dynamically balanced before installation.

A splined slip joint will be provided in each driveshaft where the driveline design requires it. The slip joint will be coated with Glidecoat® or equivalent.

STEERING

Dual Sheppard, Model M110, steering gears, with integral heavy-duty power steering, will be provided. For reduced system temperatures, the power steering will incorporate an air to oil cooler and an Eaton, Model VN20, hydraulic pump with integral pressure and flow control. All power steering lines will have wire braded lines with crimped fittings.

A tilt and telescopic steering column will be provided to improve fit for a broader range of driver configurations.

STEERING WHEEL

The steering wheel will be 18.00" in diameter, have tilting and telescoping capabilities, and a 4-spoke design.

LOGO AND CUSTOMER DESIGNATION ON DASH

The dash panel will have an emblem containing the Pierce logo and customer name. The emblem will have three (3) rows of text for the customer's department name. There will be a maximum of eight (8) characters in the first row, 11 characters in the second row and 11 characters in the third row.

The first row of text will be: Denver

The second row of text will be: Fire

The third row of text will be: Department

AUTOMATIC CHASSIS LUBRICATION

A Vogel automatic lubrication system will be provided. The system will supply grease while the parking brake is off and will be paused while the parking brake is on. The system will include an electronic control unit that allows for adjustable timing intervals and monitors the system for faults and low-level indications.



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The lubrication system reservoir will be mounted on the right side near the battery box on the apparatus unless otherwise necessitated by the vehicle configuration.

All serviceable grease points on the front and rear axles of the chassis will be connected to the lubrication system:

- King pins, tie rods, and drag links on vehicles equipped with a straight front axle
- S-cams and slack adjusters on vehicles equipped with cam brakes
- Spring pins and spring shackles on vehicles equipped with leaf springs that have serviceable grease points

BUMPER

The bumper will be manufactured from 8 gauge formed stainless steel with a 3/8" bend radius. The bumper will be 10.00" high with a 1.50" top and bottom flange. The bumper will be extended a total of 27.00" from the front face of the cab. The first 11.00" of extension will be provided for the aerial stabilizers. The remaining 10.00" extension will be provided forward of the front stabilizers.

The bumper will be one (1) piece with a front face and 45 degree corners. The bumper will be metal finished and have bright polished finish.

It will have fully covered stabilizer cylinders that tip within a pocket inside the covers allowing the bumper to be a single wrap around piece.

Gravel Pan

A gravel pan, constructed of bright aluminum treadplate, will be furnished between the bumper and cab face. The gravel pan will be properly supported from the underside to prevent flexing and vibration of the aluminum treadplate.

CENTER HOSE TRAY

A hose tray, constructed of aluminum, will be placed in the center of the bumper extension.

It will be 15.00" Deep. The top of the tray will be flush with the gravel pan.

The tray will have a capacity of 150' of 1.75" double jacket cotton-polyester hose.

Black rubber grating will be provided at the bottom of the tray. Drain holes are also provided.

Center Hose Tray Restraint

There will be one (1) pair of hose tray restraint straps located over the center mounted tray.

The restraints will be a pair of 2.00" wide black nylon straps with Velcro® fasteners provided. The strap(s) will be used to secure the hose in the tray.

LIFT AND TOW MOUNTS

Mounted to the frame extension will be lift and tow mounts. The lift and tow mounts will be designed and positioned to adapt to certain tow truck lift systems.



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The lift and tow mounts with eyes will be painted the same color as the frame.

TOW HOOKS

No tow hooks are to be provided. This truck will be equipped with a lift and tow package with integral tow eyes.

BUMPER COVER NOTCH

There will be one (1) hose tray notch(es) provided for the bumper tray cover(s) located center tray passenger side . Each notch will allow hose to be pre-connected to front outlets.

FOG LIGHTS

There will be two (2) JW Speaker, Model 6048, 800 lumen, 12v DC rectangular white LED fog lamps with clear lenses provided one (1) on each side recessed into the front bumper.

The fog lamps will be switched on with the headlight switch and a separate switch that will include an internal indicator. This switch will be properly identified and installed on the switch panel with in reach of the driver. The parking, tail, side marker and license plate lamps will be activated by the headlamp switch prior to the activation of these fog lights. The fog lights will be able to switch on or off independently of the low beam headlights. The front fog lights will be reset to an off position whenever the headlight switch or the vehicle ignition switch are set to the off position. The fog lights will be deactivated when the high beam headlights are activated, when the headlight switch is turned off or when the ignition switch is turned off.

CAB

The Velocity cab will be designed specifically for the fire service and will be manufactured by Pierce Manufacturing.

To provide quality at the source and single source customer support, the cab will be built by the apparatus manufacturer in a facility located on the manufacturer's premises.

For reasons of structural integrity and enhanced occupant protection, the cab will be of heavy duty design, constructed to the following minimal standards.

The cab will have 12 main vertical structural members located in the A-pillar (front cab corner posts), B-pillar (side center posts), C-pillar (rear corner posts) and rear wall areas. The A-pillar will be constructed of 0.25" heavy wall extrusions joined by a solid A356-T6 aluminum joint casting. The B-pillar and C-pillar will also be constructed from 0.25" heavy wall extrusions. The rear wall will be constructed of two (2) 4.00" x 2.00" outer aluminum extrusions and two (2) 3.00" x 2.00" inner aluminum extrusions. All main vertical structural members will run from the floor to 7.50" x 3.50" x 0.125" thick roof extrusions to provide a cage-like structure with the A-pillar and roof extrusions being welded into a 0.75" thick corner casting at each of the front corners of the roof assembly.

The front of the cab will be constructed of a 0.25" thick firewall, covered with a 0.125" front skin (for a total thickness of 0.38"), and reinforced with 24.50" wide x 10.00" deep x 0.50" thick supports on each



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side of the engine tunnel. The cross-cab support will be welded to the A-pillar, 0.25" firewall, and engine tunnel, on the left and right sides.

The cab floors will be constructed of 0.1875" thick aluminum plate and reinforced at the firewall with an additional 0.25" thick cross-floor support providing a total thickness of 0.44" of structural material at the front floor area. The front floor area will also be supported with three (3) 0.50" plates bolted together that also provides the mounting point for the cab lift. This tubing will run from the front of the cab to the 0.1875" thick engine tunnel, creating the structure to support the forces created when lifting the cab.

The cab will be a full-tilt style. A 3-point cab mount system with rubber isolators will improve ride quality by isolating chassis vibrations from the cab.

The crew cab will be a totally enclosed design with the interior area completely open to improve visibility and verbal communication between the occupants.

The centerline of front axle to the rear of the cab will be 70.00" long.

The forward cab section will have an overall height (from the cab roof to the ground) of approximately 102.00". The crew cab section will have a 10.00" raised roof, with an overall cab height of approximately 112.00". The raised portion will start at the most forward point of the B-pillar and continue rearward to the back of the cab. The overall height listed will be calculated based on a truck configuration with the lowest suspension weight ratings, the smallest diameter tires for the suspension, no water weight, no loose equipment weight, and no personnel weight. Larger tires, wheels, and suspension will increase the overall height listed.

The cab will have an interior width of not less than 93.50". The driver and passenger seating positions will have a minimum 24.00" clear width at knee level.

To reduce injuries to occupants in the seated positions, proper head clearance will be provided. The floor-to-ceiling height inside the forward cab will be no less than 60.25". The floor-to-ceiling height inside the crew cab will be no less than 62.95" in the center position and 68.75" in the outboard positions.

The crew cab will measure a minimum of 57.50" from the rear wall to the backside of the engine tunnel (knee level) for optimal occupant legroom.

FENDER LINERS

Full-circular, aluminum, inner fender liners in the wheel wells will be provided.

PANORAMIC WINDSHIELD

A one (1)-piece, safety glass windshield with more than 2,802 square inches of clear viewing area will be provided. The windshield will be full width and will provide the occupants with a panoramic view. The windshield will consist of three (3) layers: the outer light, the middle safety laminate, and the inner light. The 0.114" thick outer light layer will provide superior chip resistance. The middle safety laminate



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layer will prevent the windshield glass pieces from detaching in the event of breakage. The inner light will provide yet another chip resistant layer. The cab windshield will be bonded to the aluminum windshield frame using a urethane adhesive. A custom frit pattern will be applied on the outside perimeter of the windshield for a finished automotive appearance.

WINDSHIELD WIPERS

Three (3) electric windshield wipers with a washer, in conformance with FMVSS and SAE requirements, will be provided. The wiper blades will be 21.65" long and together will clear a minimum of 1,783 square inches of the windshield for maximum visibility in inclement weather.

The windshield washer fluid reservoir will be located at the front of the vehicle and be accessible through the access hood for simple maintenance.

FAST SERVICE ACCESS FRONT TILT HOOD

A full-width access hood will be provided for convenient access to engine coolant, steering fluid, wiper fluid, cab lift controls, headlight power modules, and ember separator. The hood will also provide complete access to the windshield wiper motor and components. The hood will be contoured to provide a sleek, automotive appearance. The hood will be constructed of two (2) fiberglass panels bonded together and will include reinforcing ribs for structural integrity. The hood will include air cylinders to hold the hood in open and closed positions, and a heavy duty latch system that will meet FMVSS 113 (Hood Latch System). The spring-loaded hood latch will be located at the center of the hood with a double-action release lever located behind the Pierce logo. The two (2)-step release requires the lever first be pulled to the driver side until the hood releases from the first latch (primary latch) then to the passenger side to fully release the hood (secondary latch).

ENGINE TUNNEL

To provide structural strength, the engine tunnel sidewalls will be constructed of 0.50" aluminum plate that is welded to both the 0.25" firewall and 0.38" heavy wall extrusion under the crew cab floor. To maximize occupant space, the top edges will be tapered.

The engine tunnel will be insulated for protection from heat and sound. Perforated foil faced insulation will be over a 1.00" thick closed cell foam affixed with pressure sensitive adhesive and further secured with mechanical fasteners. Thermal rating for this insulation will be -40 degrees Fahrenheit to 300 degrees Fahrenheit. The noise insulation keeps the dBA level within the limits stated in the current edition of applicable NFPA standards.

INTERIOR CAB INSULATION

The cab will include 1.50" insulation in the ceiling, 3.00" insulation in the side walls, and 2.00" insulation in the rear wall to maximize acoustic absorption and thermal insulation.

CAB REAR WALL EXTERIOR COVERING

The exterior surface of the rear wall of the cab will be overlaid with bright aluminum treadplate except for areas that are not typically visible when the cab is lowered.



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CAB LIFT

A hydraulic cab lift system will be provided, consisting of an electric-powered hydraulic pump, fluid reservoir, dual lift cylinders, remote cab lift controls and all necessary hoses and valves. The hydraulic pump will have a backup manual override, for use in the event of an electrical failure.

The cab lift controls will be located at the driver side front of the cab, easily accessible under the full width front access hood. The controls will include a permanently mounted raise/lower switch. For enhanced visibility during cab tilt operations, a remote control tether with on/off switch will be supplied on a coiled cord that will extend from 2.00' (coiled) to 6.00' (extended).

The cab will be capable of tilting 42 degrees and 80 degrees with crane assist to accommodate engine maintenance and removal. The cab pivots will be located 46.00" apart to provide stability while tilting the cab.

The rear of the cab will be locked down by a two (2)-point, automatic, hydraulic, double hook mechanism that fully engages after the cab has been lowered (self-locking). The dual 2.25" diameter hydraulic cylinders will be equipped with a velocity fuse that protects the cab from accidentally descending when the cab is in the tilt position.

For increased safety, a redundant mechanical stay arm will be provided that must be manually put in place on the driver side between the chassis and cab frame when cab is in the raised position. This device will be manually stowed to its original position before the cab can be lowered.

Cab Lift Interlock

The cab lift safety system will be interlocked to the parking brake. The cab tilt mechanism will be active only when the parking brake is set and the ignition switch is in the on position. If the parking brake is released, the cab tilt mechanism will be disabled.

The cab lift safety system will also be interlocked to the front stabilizers in the bumper. The cab tilt mechanism will be active only when the front stabilizers are fully stowed, and fully tilted outboard. The cab tilt mechanism will not allow the front stabilizers to be tilted inboard until the cab has been fully lowered and locked into position.

GRILLE

A bright finished aluminum mesh grille screen, inserted behind a formed bright finished grille surround, will be provided on the front center of the cab, and will serve as an air intake to the radiator.

DOOR JAMB SCUFFPLATES

All cab door jambs will be furnished with a 1.00" polished stainless steel scuffplate, mounted on the striker side of the jamb.

FRONT CAB TRIM

A band of 22 gauge brushed stainless steel trim will be installed across the front of the cab, from door hinge to door hinge. The trim band will be centered on the head lights and applied with two (2)-sided tape. A 0.625" self adhesive trim strip will be applied around the perimeter of the trim band.



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There will be no covers provided over the painted cab corner where the cab turn signals are located.

SIDE OF CAB MOLDING

Chrome molding will be provided on both sides of cab.

MIRRORS

A Retrac, Model 613423, dual vision, motorized, west coast style mirror, with chrome finish, will be mounted on each side of the front cab door with spring loaded retractable arms. The flat glass and convex glass will be heated and adjustable with remote control within reach of the driver.

CAB DOORS

To enhance entry and egress to the cab, the forward cab doors will be a minimum of 43.59" wide x 76.46" high. The crew cab doors will be located on the sides of the cab and will be constructed in the same manner as the forward cab doors. The crew cab doors will measure a minimum of 37.87" wide x 85.50" high.

The forward cab and crew cab doors will be constructed of extruded aluminum with a nominal material thickness of 0.125". The exterior door skins will be constructed from 0.090" aluminum.

The forward cab door windows will include a 7.50" high x 10.00" wide drop area at the front to enhance visibility.

A customized, vertical, pull-down type door handle will be provided on the exterior of each cab door. The finish of the door handle will be chrome/black. The exterior handle will be designed specifically for the fire service to prevent accidental activation, and will provide 4.00" wide x 2.00" deep hand clearance for ease of use with heavy gloved hands.

Each door will also be provided with an interior flush, open style paddle handle that will be readily operable from fore and aft positions, and be designed to prevent accidental activation. The interior handles will provide 4.00" wide x 1.25" deep hand clearance for ease of use with heavy gloved hands.

The cab doors will be provided with both interior (rotary knob) and exterior (keyed) locks exceeding FMVSS standards. The keys will be Model 1041. The locks will be capable of activating when the doors are open or closed. The doors will remain locked if locks are activated when the doors are opened, then closed.

A heavy duty, stainless steel, piano-type hinge with a 0.38" pin and 11 gauge leaf will be provided on all cab doors. There will be double automotive-type rubber seals around the perimeter of the door framing and door edges to ensure a weather-tight fit.

A chrome grab handle will be provided on the inside of each cab and crew cab door.

A red webbed grab handle will be installed on the crew cab door stop strap. The grab handles will be securely mounted.



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The cab steps at each cab door location will be located inside the cab doors to protect the steps from weather elements.

Door Panels

The inner cab door panels will be constructed out of polished stainless steel. The cab door panels will be removable.

RECESSED POCKET WITH ELASTIC COVER

To provide organized storage (clutter control) in the cab for miscellaneous equipment, the cab interior will be provided with recessed storage pockets. The pockets will be 5.63" wide x 2.00" high x 4.00" deep. The pockets will be provided with a perforated elastic material cover to secure the equipment in the pocket. The pockets will be installed in all available mounting locations of the overhead console.

ELECTRIC WINDOW CONTROLS

Each cab entry door will be equipped with an electrically operated tempered glass window. A window control panel will be located on the door panel within easy reach of the respective occupant. Each switch will allow intermittent or auto down operation for ease of use. Auto down operation will be actuated by holding the window down switch for approximately 1 second. The driver control panel will contain a control switch for each cab door's window. All other door control panels will contain a single switch to operate the window within that door.

The window switches will be connected directly to the battery power. This allows the windows to be raised and lowered when the battery switch is in the off position.

CAB STEPS

The forward cab and crew cab access steps will be a full size two (2) step design to provide largest possible stepping surfaces for safe ingress and egress. The bottom steps will be designed with a grip pattern punched into bright aluminum treadplate material to provide support, slip resistance, and drainage. The bottom steps will be a bolt-in design to minimize repair costs should they need to be replaced. The forward cab steps will be a minimum 31.00" wide, and the crew cab steps will be 24.25" wide with an 8.00" minimum depth. The inside cab steps will not exceed 18.00" in height and be limited to two (2) steps.

CAB EXTERIOR HANDRAILS

A 1.25" diameter slip-resistant, knurled aluminum handrail will be provided adjacent to each cab and crew cab door opening to assist during cab ingress and egress.

STIRRUP STEPS

A stirrup step will be provided below each cab and crew cab door. The steps will be designed with a grip pattern punched into bright aluminum treadplate material, providing support, slip resistance and drainage. The steps will be a bolt-on design and provide a 26.50" wide x 4.75" deep stepping surface for the cab door steps and an 18.50" wide x 4.75" deep stepping surface for the crew cab steps. Each step will provide a step height of 8.25" from the top of the stirrup step to the first step of the cab.



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The stirrup step will be lit by a white 12 volt DC LED light provided on the step.

The step light will be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body step lights.

STEP LIGHTS

There will be four (4) white P25 LED step lights provided. The lights will be installed at each cab and crew cab door, one (1) per step. The lights will be located in the driver side front doorstep, driver side crew cab doorstep, passenger side front doorstep and passenger side crew cab doorstep.

In order to ensure exceptional illumination, each light will provide a minimum of 25 foot-candles (fc) covering an entire 15.00" x 15.00" square placed 10.00" below the light and a minimum of 1.5 fc covering an entire 30.00" x 30.00" square at the same 10.00" distance below the light.

The light(s) will have a chrome housing.

The lights will be activated when the adjacent door is opened.

FENDER CROWNS

Stainless steel fender crowns will be installed at the cab wheel openings.

CREW CAB WINDOWS

One (1) fixed window with tinted glass will be provided on each side of the cab, to the rear of the front cab door. The windows will be sized to enhance light penetration into the cab interior. The windows will measure 20.00" wide x 20.50" high with chrome window trim.

WINDOWS INTERIOR TRIM

For improved aesthetics, the cab side windows will include a vacuum formed ABS interior trim panel.

REAR WINDOWS

The rear wall of the crew cab will have two (2) windows, each being 11.25" wide x 18.00" high, with chrome window trim.

WINDOW INTERIOR TRIM

For improved aesthetics, the cab rear wall windows will include a vacuum formed ABS interior trim panel.

STORAGE COMPARTMENT

Provided on each side of the cab, below the cab floor and to the rear of the crew cab access doors, will be a storage compartment.

The compartments will be approximately 10.71" wide x 19.25" high x 22.00" deep at the top and 18.75" at the bottom. The bottom front of the compartment will be blistered for side wall support. The clear door opening will be 8.25" wide x 16.50" high.



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There will be two (2) double pan doors painted to match the cab exterior with a non-locking D-Ring latch, one (1) on each side of the cab. A web strap for each exterior door will be used as a door stop.

The compartment interior will be painted spatter gray.

Compartment Light

There will be two (2) On Scene Solutions Night Axe, LED strip lights provided, one (1) each hinged side of compartment door openings.

CAB ROOF COVERING

The rear 24.00" of the horizontal cab roof surfaces will be covered with bright aluminum treadplate. Edges and fastening screws will be properly caulked to prevent water from leaking under aluminum. The treadplate will extend from the rear edge of the roof forward 24.00".

STORAGE FOR LADDER

An aluminum treadplate box for a Little Giant 17', type 10102 ladder, will be mounted On top of the cab, 24" from the rear wall. A Velcro® strap with footman loops will secure the ladder.

The box will be coated with black Safe-Stride® slip resistant material.

EQUIPMENT MOUNTING TRAY(S)

There will be three (3) tray(s) for mounting of equipment located on top of both rear facing EMS cabinets and on the rear of engine tunnel.

Each tray will have a 2.00" lip on four (4) sides. The size of the tray(s) will be top of DS rear facing cabinet (1) 22.25" wide x 24.00" long (front to back), top of PS rear facing cabinet (1) 20.25" wide x 20.00" long (front to back) and on rear of engine tunnel (1) 41.50" wide x 34.00" long (front to back) See pictures.

Each tray will be fabricated from aluminum and will be painted to match the cab interior.

Tray not intended for storage of loose equipment. Items stored on tray will be permanently attached to meet current edition of applicable NFPA standards.

WEB NETTING

There will be three (3) web netting covers provided over the top of the three (2) trays in the crew cab, one (1) on top of each rear facing EMS cabinet and one (1) on top of the tray mounted on the rear of the engine tunnel. The netting will be made with 1.00" wide nylon material with 2.00" openings. The nylon webbing will be permanently fastened at the front and have 1.00" Cobra buckle fasteners on the opposite side to secure it.

CAB INTERIOR

With safety as the primary objective, the wrap-around style cab instrument panel will be designed with unobstructed visibility to instrumentation. The dash layout will provide the driver with a quick reference to gauges that allows more time to focus on the road.



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The center console will be a high impact ABS polymer and will be easily removable.

The passenger side dashboard will be constructed of painted aluminum for durability and low maintenance. For enhanced versatility, the passenger side dash will include a flat working surface.

To provide optional (service friendly) control panels, switches and storage modules, a painted aluminum overhead console will also be provided.

To complete the cab front interior design, painted aluminum modesty panels will be provided under the dash on both sides of the cab. The driver side modesty panel will provide mounting for the battery switch and diagnostic connectors, while the passenger side modesty panel provides a glove box, and ground access to the main electrical distribution panel via quick quarter turn fasteners.

To provide a deluxe automotive interior, the engine tunnel, side walls and rear wall will be covered by a leather grain vinyl that is resistant to oil, grease, and mildew.

The headliner will be installed in both forward and rear cab sections. The headliner panel will be a composition of an aluminum panel covered with a sound barrier and upholstery.

The cab structure will include designated raceways for electrical harness routing from the front of the cab to the rear upper portion of the cab. Raceways will be extruded in the forward door frame, floor, walls and overhead in the area where the walls meet the ceiling. The raceways located in the floor will be covered by aluminum extrusion, while the vertical and overhead raceways will be covered by painted aluminum covers. The raceways will improve harness integrity by providing a continuous harness path that eliminates wire chafing and abrasion associated with exposed wiring or routing through drilled metal holes. Harnesses will be laid in place.

CAB INTERIOR UPHOLSTERY

The cab interior upholstery will be 36 oz dark silver gray vinyl. All cab interior materials will meet FMVSS 302 (flammability of interior materials).

CAB INTERIOR PAINT

The following metal surfaces will be painted black, vinyl textured paint:

- Modesty panel in front of driver
- Vertical surface of dash in front of the officer (not applicable for recessed dash)
- Glove box in front of the officer (if applicable)
- Power distribution in front of the officer
- Rear heater vent panels

The remaining cab interior metal surfaces will be painted gray, vinyl texture paint.

CAB FLOOR

The cab and crew cab floor areas will be covered with Polydamp™ acoustical floor mat consisting of a black pyramid rubber facing and closed cell foam decoupler.



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The top surface of the material has a series of raised pyramid shapes evenly spaced, which offer a superior grip surface. Additionally, the material has a 0.25" thick closed cell foam (no water absorption) which offers a sound dampening material for reducing sound levels.

DEFROST/AIR CONDITIONING SYSTEM

A ceiling mounted combination heater, defroster and air conditioning system will be installed in the cab above the engine tunnel area.

Cab Defroster

A 54,000 BTU heater-defroster unit with 690 SCFM of air flow will be provided inside the cab. The heater-defrost will be installed in the forward portion of the cab ceiling. Air outlets will be strategically located in the cab header extrusion per the following:

- One (1) adjustable will be directed towards the left side cab window
- One (1) adjustable will be directed towards the right side cab window
- Six (6) fixed outlets will be directed at the windshield

The defroster will be capable of clearing 98 percent of the windshield and side glass when tested under conditions where the cab has been cold soaked at 0 degrees Fahrenheit for 10 hours, and a 2 ounce per square inch layer of frost/ice has been able to build up on the exterior windshield. The defroster system will meet or exceed SAE J382 requirements.

Cab/Crew Auxiliary Heater

There will be one (1) 31,000 BTU auxiliary heater with 560 SCFM of air flow provided in each outboard rear facing seat riser with a dual scroll blower. An aluminum plenum incorporated into the cab structure to be used to transfer heat to the forward positions.

Air Conditioning

A 19.10 cubic inch compressor will be installed on the engine.

A roof-mounted condenser with a 78,000 BTU output at 2,400 SCFM that meets and exceeds the performance specification will be installed on the cab roof. The condenser cover to be painted to match the cab roof.

The air conditioning system will be capable of cooling the average cab temperature from 100 degrees Fahrenheit to 75 degrees Fahrenheit at 50 percent relative humidity within 30 minutes. The cooling performance test will be run only after the cab has been heat soaked at 100 degrees Fahrenheit for a minimum of 4 hours.

The evaporator unit will be installed in the rear portion of the cab ceiling over the engine tunnel. The evaporator will include one (1) high performance heating core, one (1) high performance cooling core with (1) plenum directed to the front and one (1) plenum directed to the rear of the cab.

The evaporator unit will have a 52,000 BTU at 690 SCFM rating that meets and exceeds the performance specifications.

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Adjustable air outlets will be strategically located on the forward plenum cover per the following:

- Four (4) will be directed towards the seating position on the left side of the cab
- Four (4) will be directed towards the seating position on the right side of the cab

Adjustable air outlets will be strategically located on the evaporator cover per the following:

- Five (5) will be directed towards crew cab area

A high efficiency particulate air (HEPA) filter will be included for the system. Access to the filter cover will be secured with four (4) screws.

The air conditioner refrigerant will be R-134A and will be installed by a certified technician.

Climate Control

An automotive style controller will be provided to control the heat and air conditioning system within the cab. The controller will have three (3) functional knobs for fan speed, temperature, and air flow distribution (front to rear) control.



The system will control the temperature of the cab and crew cab automatically by pushing the center of the fan speed control knob. Rotate the center temperature control knob to set the cab and crew cab temperature.

The AC system will be manually activated by pushing the center of the temperature control knob. Pushing the center of the air flow distribution knob will engage the AC for max defrost, setting the fan speeds to 100 percent and directing all air flow to the overhead forward position.

Gravity Drain Tubes

Two (2) condensate drain tubes will be provided for the air conditioning evaporator. The drip pan will have two (2) drain tubes plumbed separately to allow for the condensate to exit the drip pan. No pumps will be provided.

The drain tubes will terminate under the cab, on the inboard side of the front wheelwells.



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SUN VISORS

Two (2) smoked Lexan™ sun visors will be provided. The sun visors will be located above the windshield with one (1) mounted on each side of the cab.

There will be no retention bracket provided to help secure each sun visor in the stowed position.

GRAB HANDLE

A black rubber covered grab handle will be mounted on the door post of the driver side and passenger side cab door to assist in entering the cab. The grab handle will be securely mounted to the post area between the door and windshield.

ENGINE COMPARTMENT LIGHT

An engine compartment light will be installed under the engine tunnel, of which the switch is an integral part. Light will have a 0.125" diameter hole in its lens to prevent moisture retention.

ACCESS TO ENGINE DIPSTICKS

For access to the engine oil and transmission fluid dipsticks, there will be an access panel on the engine tunnel, inside the crew cab. The access panel will be on the rear wall of the engine tunnel, on the vertical surface. The panel will be 20.00" wide x 8.25" high and be flush with the wall of the engine tunnel. The panel will have a rubber seal for thermal and acoustic insulation. One (1) pair of flush lift and turn latches will be provided on the access panel.

Service access will be impeded when seats or EMS cabinets are mounted in the center rear facing position of the crew cab, and may require the cab be tilted to access the dipstick and fill tubes.

The engine oil dipstick will allow for checking only. The transmission dipstick will allow for both checking and filling.

MAP BOX

A map box with four (4) bins, open from top, will be installed vertically on the EMS compartments facing the engine tunnel. The map box will be divided into four (4) bins, each being 12.50" wide x 2.25" high x 12.00" deep. Each bin will slant 30 degrees from horizontal. The sides of the top bin will have rounded corners.

The map box top will be finished and include a small storage area and cup holder hole. The cup holder hole will be toward the crew cab.

The map box will be constructed of 0.125" aluminum and will be painted to match the cab interior.

There will be one (1) map boxes provided.

CAB SAFETY SYSTEM

The cab will be provided with a safety system designed to protect occupants in the event of a side roll or frontal impact, and will include the following:



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- A supplemental restraint system (SRS) sensor will be installed on a structural cab member behind the instrument panel. The SRS sensor will perform real time diagnostics of all critical subsystems and will record sensory inputs immediately before and during a side roll or frontal impact event.
- A slave SRS sensor will be installed in the cab to provide capacity for eight (8) crew cab seating positions.
- A fault-indicating light will be provided on the vehicle's instrument panel allowing the driver to monitor the operational status of the SRS system.
- A driver side front air bag will be mounted in the steering wheel and will be designed to protect the head and upper torso of the occupant, when used in combination with the 3-point seat belt.
- A passenger side knee bolster air bag will be mounted in the modesty panel below the dash panel and will be designed to protect the legs of the occupant, when used in combination with the 3-point seat belt.
- Air curtains will be provided in the outboard bolster of outboard seat backs to provide a cushion between occupant and the cab wall.
- Suspension seats will be provided with devices to retract them to the lowest travel position during a side roll or frontal impact event.
- Seat belts will be provided with pre-tensioners to remove slack from the seat belt during a side roll or frontal impact event.

Frontal Impact Protection

The SRS system will provide protection during a frontal or oblique impact event. The system will activate when the vehicle decelerates at a predetermined G force known to cause injury to the occupants. The cab and chassis will have been subjected, via third party test facility, to a crash impact during frontal and oblique impact testing. Testing included all major chassis and cab components such as mounting straps for fuel and air tanks, suspension mounts, front suspension components, rear suspensions components, frame rail cross members, engine and transmission and their mounts, pump house and mounts, frame extensions and body mounts. The testing provided configuration specific information used to optimize the timing for firing the safety restraint system. The sensor will activate the pyrotechnic devices when the correct crash algorithm, wave form, is detected.

The SRS system will deploy the following components in the event of a frontal or oblique impact event:

- Driver side front air bag
- Passenger side knee bolster air bag
- Air curtains mounted in the outboard bolster of outboard seat backs
- Suspension seats will be retracted to the lowest travel position
- Seat belts will be pre-tensioned to firmly hold the occupant in place

Side Roll Protection

The SRS system will provide protection during a fast or slow 90 degree roll to the side, in which the vehicle comes to rest on its side. The system will analyze the vehicle's angle and rate of roll to determine the optimal activation of the advanced occupant restraints.



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The SRS system will deploy the following components in the event of a side roll:

- Air curtains mounted in the outboard bolster of outboard seat backs
- Suspension seats will be retracted to the lowest travel position
- Seat belts will be pre-tensioned to firmly hold the occupant in place

SEATING CAPACITY

The seating capacity of the vehicle (including tiller cab and belted seat positions in the rescue body) will be five (5).

DRIVER SEAT

A Pierce PS6® seat will be provided in the cab for the driver. The seat design will be a cam action type with air suspension. For increased convenience, the seat will include electric controls to adjust the rake (15 degrees), height (1.75" travel) and horizontal (7.00" travel) position. Electric controls will be located below the forward part of the seat cushion. To provide flexibility for multiple driver configurations, the seat will have a reclining back, adjustable from 20 degrees back to 45 degrees forward. Providing for maximum comfort, the seat back will be a high back style with manual lumbar adjustment lever, for lower back support, and will include minimum 7.50" deep side bolster pads for maximum support. The lumbar adjustment lever will be easily located at the lower outboard position of the seat cushion. For optimal comfort, the seat will be provided with 17.00" deep dual density foam cushions designed with EVC (elastomeric vibration control).

The seat will include the following features incorporated into the side roll protection system:

- Side air curtain will be mounted integral to the outboard bolster of the seat back. The air curtain will be covered by a decorative panel when in the stowed position.
- A suspension seat safety system will be included. When activated in the event of a side roll, this system will pretension the seat belt and retract the seat to its lowest travel position.

The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.

OFFICER SEAT

A Pierce PS6® seat will be provided in the cab for the passenger. The seat will be a cam action type with air suspension. For increased convenience, the seat will include a manual control to adjust the horizontal position (6.00" travel). The manual horizontal control will be a towel-bar style located below the forward part of the seat cushion. For optimal comfort, the seat will be provided with 17.00" deep dual density foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat will be equipped with seat belt sensors in the seat cushion and belt receptacle that will activate an alarm indicating a seat is occupied but not belted.

The seat back will be an SCBA back style with 7.5 degree fixed recline angle, and will include minimum 4.50" wide x 7.50" deep side bolster pads for maximum support. The SCBA cavity will be adjustable



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from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity will be accomplished by unbolting, relocating, and re-bolting it in the desired location.

The seat will include the following features incorporated into the side roll protection system:

- Side air curtain will be mounted integral to the outboard bolster of the seat back. The air curtain will be covered by a decorative panel when in the stowed position.
- A suspension seat safety system will be included. When activated, this system will pretension the seat belt and then retract the seat to its lowest travel position.

The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.

REAR FACING LEFT SIDE CABINET

A rear facing cabinet will be provided in the crew cab at the left side outboard position.

The cabinet will be 22.25" wide x 26.00" high x 30.50" deep. The interior door will be web netting. Front top corners of cabinet will be radiused. This will allow access through the front and top section of the cabinet. The netting is to be made with 1.00" wide nylon material with 2.00" openings permanently fastened on the bottom with 1.00" cam buckle fasteners on the top to secure it.

The cabinet will include one (1) infinitely adjustable shelf with a 0.75" up-turned lip painted to match the cab interior.

The cabinet will include no louvers.

The cabinet will be constructed of smooth aluminum and painted to match the cab interior.

Cabinet Light

There will be one (1) white LED strip light installed on the right side of the interior cabinet door opening and one (1) white LED strip light installed on the left side of the interior cabinet door opening. The lighting will be controlled by a rocker switch located on the outboard edge of the tray on top of the cabinet. .

REAR FACING PASSENGER SIDE OUTBOARD SEAT

There will be one (1) rear facing, Pierce PS6® seat provided at the passenger side outboard position in the crew cab. For optimal comfort, the seat will be provided with 17.00" deep dual density foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat will be equipped with seat belt sensors in the seat cushion and belt receptacle that will activate an alarm indicating a seat is occupied but not buckled. The seat back will be an SCBA back style with 7.5 degree fixed recline angle, and will include minimum 4.50" wide x 7.50" deep side bolster pads for maximum support. The SCBA cavity will be adjustable from front to rear in 1.00" increments to accommodate different sized SCBA cylinders. Moving the SCBA cavity will be accomplished by unbolting, relocating, and re-bolting it in the desired location.



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The seat will include the following features incorporated into the side roll protection system:

- Side air curtain will be mounted integral to the outboard bolster of the seat back. The air curtain will be covered by a decorative panel when in the stowed position.
- A seat safety system will be included. When activated, this system will pretension the seat belt and firmly hold the occupant in the event of a side roll.

The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.

FORWARD FACING LEFT SIDE CABINET

A forward facing cabinet will be provided in the crew cab located at the left side outboard position.

The cabinet will be 21.00" wide x 64.00" high x 14.00" deep with one (1) Amdor rollup door with white finish, non-locking. The frame to frame opening of the cabinet will be 18.50" wide x 58.75" high. The minimum clear door opening will be 15.75" wide x 52.87" high.

| CLEAR DOOR OPENINGS (F-F = Frame to Frame) | | | | | |
|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| AMDOR | | GORTITE | | ROM | |
| HORIZONTAL | VERTICAL | HORIZONTAL | VERTICAL | HORIZONTAL | VERTICAL |
| Subtract 2.00" from F-F | Subtract 5.88" from F-F | Subtract 2.75" from F-F | Subtract 4.75" from F-F | Subtract 2.56" from F-F | Subtract 4.50" from F-F |

The cabinet will include three (3) infinitely adjustable shelves with a 1.25" up-turned lipped to match the cab interior.

The cabinet will include no louvers.

The cabinet will be constructed of smooth aluminum and painted to match the cab interior.

Cabinet Light

There will be one (1) white Amdor LED strip light installed on the left side of the interior cabinet door opening and one (1) white Amdor LED strip light installed on the right side of the interior cabinet door opening. The lighting will be controlled by an automatic door switch.

FORWARD FACING CENTER SEATS

There will be two (2) forward facing seats provided at the center position in the crew cab. The seats will be cam action type with air suspension. For increased convenience, the seat will include manual controls to adjust the height (1.12" travel) and horizontal (6.00" travel) position. The manual horizontal control will be a towel-bar style located below the forward part of the seat cushion. The seat backs will be a high back style with manual lumbar adjustment lever, and will include minimum 7.50" deep side bolster pads for maximum support. For optimal comfort, the seats will be provided with 17.00" deep dual density foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seats will be equipped with seat belt sensors in the seat cushion and belt receptacle that will activate an alarm indicating a seat is occupied but not buckled.



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The seat back will be an SCBA back style with 7.5 degree fixed recline angle, and will include minimum 4.50" wide x 7.50" deep side bolster pads for maximum support. The SCBA cavity will be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity will be accomplished by unbolting, relocating, and re-bolting it in the desired location.

The seats will include the following feature incorporated into the side roll protection system:

- A suspension seat safety system will be included. When activated, this system will pretension the seat belts around the occupants to firmly hold them in place, and retract the seats to their lowest travel position.

The seats will be furnished with 3-point, shoulder type seat belts. The seat belts will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.

FORWARD FACING RIGHT SIDE CABINET

A forward facing cabinet will be provided in the crew cab located at the right side outboard position.

The cabinet will be 21.00" wide x 64.00" high x 14.00" deep with one (1) Amdor rollup door with white finish, non-locking. The frame to frame opening of the cabinet will be 18.50" wide x 58.75" high. The minimum clear door opening of the cabinet will be 15.75" wide x 52.87" high.

| CLEAR DOOR OPENINGS (F-F = Frame to Frame) | | | | | |
|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| AMDOR | | GORTITE | | ROM | |
| HORIZONTAL | VERTICAL | HORIZONTAL | VERTICAL | HORIZONTAL | VERTICAL |
| Subtract 2.00" from F-F | Subtract 5.88" from F-F | Subtract 2.75" from F-F | Subtract 4.75" from F-F | Subtract 2.56" from F-F | Subtract 4.50" from F-F |

The cabinet will include three (3) infinitely adjustable shelves with a 1.25" up-turned lipped to match the cab interior.

The cabinet will include no louvers.

The cabinet will be constructed of smooth aluminum, and painted to match the cab interior.

Cabinet Light

There will be one (1) white Amdor LED strip light installed on the left side of the interior cabinet door opening and one (1) white Amdor LED strip light installed on the right side of the interior cabinet door opening. The lighting will be controlled by an automatic door switch.

REAR FACING CENTER CABINET

A rear facing cabinet will be provided on the top rear of the engine tunnel. The cabinet will extend past the rear of the engine tunnel to be flush with the rear facing seat riser.

The cabinet will be 41.50" wide x 16.00" high x 30.00" deep. The interior door will be web netting. Front top corners of cabinet will be radiused. This will allow access through the front and top section of



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the cabinet. The netting is to be made with 1.00" wide nylon material with 2.00" openings permanently fastened on the bottom with 1.00" cam buckle fasteners on the top to secure it.

The cabinet will include one (1) infinitely adjustable shelf with a 0.75" up-turned lip painted to match the cab interior.

The cabinet will include no louvers.

The cabinet will be constructed of smooth aluminum, and painted to match the cab interior.

Cabinet Light

There will be one (1) white LED strip light installed on the right side of the interior cabinet door opening and one (1) white LED strip light installed on the left side of the interior cabinet door opening. The lighting will be controlled by a rocker switch located in the center of the cabinet top rear facing edge.

REAR FACING OVERHEAD STORAGE COMPARTMENT

There will be two (2) overhead rear facing storage compartments installed at the raised roof within the crew cab, on each side of the air conditioner. The compartments will be approximately 22.00" wide x 10.00" high x 34.00" deep at the bottom.

Each compartment will include one (1) lift up compartment door. Non-locking latch, paddle handle, and gas operated stay arms will be provided.

The compartment will be constructed of smooth aluminum and painted to match the cab interior.

COMPARTMENT LIGHT

The storage compartment lighting will consist of one (1) white LED strip light installed horizontally above each compartment door opening.

SEAT UPHOLSTERY

All seat upholstery will be black Turnout Tuff material.

AIR BOTTLE HOLDERS

All SCBA type seats in the cab will have a "Hands-Free" auto clamp style bracket in its backrest. For efficiency and convenience, the bracket will include an automatic spring clamp that allows the occupant to store the SCBA bottle by simply pushing it into the seat back. For protection of all occupants in the cab, in the event of an accident, the inertial components within the clamp will constrain the SCBA bottle in the seat and will exceed the NFPA standard of 9G.

There will be a quantity of four (4) SCBA brackets.

SEAT BELTS

All seating positions in the cab, crew cab and tiller cab (if applicable) will have red seat belts.

To provide quick, easy use for occupants wearing bunker gear, the female buckle and seat belt webbing length will meet or exceed the current edition of applicable NFPA and CAN/ULC - S515 standards.



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The 3-point shoulder type seat belts will also include the ReadyReach® D-loop assembly to the shoulder belt system. The ReadyReach feature adds an extender arm to the D-loop location placing the D-loop in a closer, easier to reach location.

Any flip up seats will include a 3-point shoulder type belts only.

SHOULDER HARNESS HEIGHT ADJUSTMENT

All seating positions furnished with 3-point shoulder type seat belts will include a height adjustment. This adjustment will optimize the belts effectiveness and comfort for the seated firefighter.

A total of five (5) seating positions will have the adjustable shoulder harness.

HELMET STORAGE PROVIDED BY FIRE DEPARTMENT

NFPA 1900, 2024 edition, section 11.1.8.4.1 and CAN/ULC 515:2024 edition, section 5.2, requires a location for helmet storage be provided.

There is no helmet storage on the apparatus as manufactured. The fire department will provide a location for storage of helmets.

CAB DOME LIGHTS

There will be four (4) Weldon, 808* series, dual LED dome lights with grey bezels provided. Two (2) lights will be mounted above the inside shoulder of the driver and officer and two (2) lights will be installed and located, one (1) on each side of the crew cab.

The color of the LED's will be red and white.

The white LED's will be controlled by the door switches and the lens switch.

The color LED's will be controlled by the lens switch.

ENHANCED SOFTWARE FOR CAB AND CREW CAB DOME LIGHTS

The cab and crew cab dome lights will remain on for 10 seconds for improved visibility after the doors are closed.

The dome lights will dim after 10 seconds or immediately if the vehicle's transmission is put into gear.

OVERHEAD MAP LIGHTS

There will be two (2) white halogen, round adjustable map lights installed in the cab:

- One (1) overhead in front of the driving position.
- One (1) overhead in front of the passenger's position.

Each light will include a switch on the light housing.

The light switches will be connected directly to the battery switched power.



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HAND HELD LIGHT

There will be four (4) Streamlight LiteBox lights with an orange thermoplastic body provided. The location will be ship loose.

CAB INSTRUMENTATION

The cab instrument panel will consist of gauges, an LCD display, telltale indicator lights, alarms, control switches, and a diagnostic panel. The function of instrument panel controls and switches will be identified by a label adjacent to each item. Actuation of the headlight switch will illuminate the labels in low light conditions. Telltale indicator lamps will not be illuminated unless necessary. The cab instruments and controls will be conveniently located within the forward cab section directly forward of the driver. Gauge and switch panels will be designed to be removable for ease of service and low cost of ownership.

Gauges

The gauge panel will include the following ten (10) ivory gauges with chrome bezels to monitor vehicle performance:

- Voltmeter gauge (Volts)
 - Low volts (11.8 VDC)
 - Amber indicator on gauge assembly with alarm
 - High volts (15 VDC)
 - Amber indicator on gauge assembly with alarm
 - Very low volts (11.3 VDC)
 - Amber indicator on gauge assembly with alarm
 - Very high volts (16 VDC)
 - Amber indicator on gauge assembly with alarm
- Tachometer (RPM)
- Speedometer (Primary (outside) MPH, Secondary (inside) Km/H)
- Fuel level gauge (Empty - Full in fractions)
 - Low fuel (1/8 full)
 - Amber indicator on gauge assembly with alarm
 - Very low fuel (1/32) fuel
 - Amber indicator on gauge assembly with alarm
- Engine oil pressure gauge (PSI)
 - Low oil pressure to activate engine warning lights and alarms
 - Red indicator on gauge assembly with alarm
- Front air pressure gauge (PSI)
 - Low air pressure to activate warning lights and alarm
 - Red indicator on gauge assembly with alarm
- Rear air pressure gauge (PSI)
 - Low air pressure to activate warning lights and alarm
 - Red indicator on gauge assembly with alarm



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- Transmission oil temperature gauge (Fahrenheit)
 - High transmission oil temperature activates warning lights and alarm
 - Amber indicator on gauge assembly with alarm
- Engine coolant temperature gauge (Fahrenheit)
 - High engine temperature activates an engine warning light and alarm
 - Red indicator on gauge assembly with alarm
- Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions)
 - Low fluid (1/8 full)
 - Amber indicator on gauge assembly with alarm

All gauges and gauge indicators will perform prove out at initial power-up to ensure proper performance.

Indicator Lamps

To promote safety, the following telltale indicator lamps will be integral to the gauge assembly and are located above and below the center gauges. The indicator lamps will be "dead-front" design that is only visible when active. The colored indicator lights will have descriptive text or symbols.

The following amber telltale lamps will be present:

- Low coolant
- Trac cntl (traction control) (where applicable)
- Check engine
- Check trans (check transmission)
- Aux brake overheat (Auxiliary brake overheat)
- Air rest (air restriction)
- Caution (triangle symbol)
- Water in fuel
- DPF (engine diesel particulate filter regeneration)
- Trailer ABS (where applicable)
- Wait to start (where applicable)
- HET (engine high exhaust temperature) (where applicable)
- ABS (antilock brake system)
- MIL (engine emissions system malfunction indicator lamp) (where applicable)
- SRS (supplemental restraint system) fault (where applicable)
- DEF (low diesel exhaust fluid level)

The following red telltale lamps will be present:

- Warning (stop sign symbol)
- Seat belt
- Parking brake
- Stop engine



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- Rack down

The following green telltale lamps will be provided:

- Left turn
- Right turn
- Battery on

The following blue telltale lamp will be provided:

- High beam

Alarms

Audible steady tone warning alarm: A steady audible tone alarm will be provided whenever a warning message is present.

Audible pulsing tone caution alarm: A pulsing audible tone alarm (chime/chirp) will be provided whenever a caution message is present without a warning message being present.

Alarm silence: Any active audible alarm will be able to be silenced by holding the ignition switch at the top position for 3 to 5 seconds. For improved safety, silenced audible alarms will intermittently chirp every 30 seconds until the alarm condition no longer exists. The intermittent chirp will act as a reminder to the operator that a caution or warning condition still exists. Any new warning or caution condition will enable the steady or pulsing tones respectively.

Indicator Lamp and Alarm Prove-Out

Telltale indicators and alarms will perform prove-out at initial power-up to ensure proper performance.

Control Switches

For ease of use, the following controls will be provided immediately adjacent to the cab instrument panel within easy reach of the driver.

Emergency master switch: A molded plastic push button switch with integral indicator lamp will be provided. Pressing the switch will activate emergency response lights and siren control. A green lamp on the switch provides indication that the emergency master mode is active. Pressing the switch again disables the emergency master mode.

Headlight / Parking light switch: A three (3)-position maintained rocker switch will be provided. The first switch position will deactivate all parking lights and the headlights. The second switch position will activate the parking lights. The third switch position will activate the headlights.

Panel backlighting intensity control switch: A three (3)-position momentary rocker switch will be provided. The first switch position decreases the panel backlighting intensity to a minimum level as the switch is held. The second switch position is the default position that does not affect the backlighting intensity. The third switch position increases the panel backlighting intensity to a maximum level as the switch is held.



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The following standard controls will be integral to the gauge assembly and are located below the right hand gauges. All switches have backlit labels for low light applications.

High idle engagement switch: A two (2)-position momentary rocker switch with integral indicator lamp will be provided. The first switch position is the default switch position. The second switch position will activate and deactivate the high idle function when pressed and released. The "Ok To Engage High Idle" indicator lamp must be active for the high idle function to engage. A green indicator lamp integral to the high idle engagement switch will indicate when the high idle function is engaged.

"Ok To Engage High Idle" indicator lamp: A green indicator light will be provided next to the high idle activation switch to indicate that the interlocks have been met to allow high idle engagement.

The following standard controls will be provided adjacent to the cab gauge assembly within easy reach of the driver. All switches will have backlit labels for low light applications.

Ignition switch: A three (3)-position maintained/momentary rocker switch will be provided. The first switch position will deactivate vehicle ignition. The second switch position will activate vehicle ignition. The third momentary position will disable the Command Zone audible alarm if held for 3 to 5 seconds. A green indicator lamp will be activated with vehicle ignition.

Engine start switch: A two (2)-position momentary rocker switch will be provided. The first switch position is the default switch position. The second switch position will activate the vehicle's engine. The switch actuator is designed to prevent accidental activation.

4-way hazard switch: A two (2)-position maintained rocker switch will be provided. The first switch position will deactivate the 4-way hazard switch function. The second switch position will activate the 4-way hazard function. The switch actuator will be red and includes the international 4-way hazard symbol.

Heater, defroster, and air conditioning control panel.

Turn signal arm: A self-canceling turn signal with high beam headlight and windshield wiper/washer controls will be provided. The windshield wiper control will have high, low, and intermittent modes.

Parking brake control: An air actuated push/pull park brake control valve will be provided.

Chassis horn control: Activation of the chassis horn control will be provided through the center of the steering wheel.

Custom Switch Panels

The design of cab instrumentation will allow for emergency lighting and other switches to be placed within easy reach of the operator thus improving safety. There will be positions for up to four (4) switch panels in the overhead console on the driver's side, up to four (4) switch panels in the engine tunnel console facing the driver, up to four (4) switch panels in the overhead console on the officer's side and



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up to two (2) switch panels in the engine tunnel console facing the officer. All switches will have backlit labels for low light applications.

Diagnostic Panel

A diagnostic panel will be accessible while standing on the ground and located inside the driver's side door left of the steering column. The diagnostic panel will allow diagnostic tools such as computers to connect to various vehicle systems for improved troubleshooting providing a lower cost of ownership. Diagnostic switches will allow ABS systems to provide blink codes should a problem exist.

The diagnostic panel will include the following:

- Engine diagnostic port
- Transmission diagnostic port
- ABS diagnostic port
- SRS diagnostic port (where applicable)
- Command Zone USB diagnostic port
- ABS diagnostic switch (blink codes flashed on ABS telltale indicator)
- Diesel particulate filter regeneration switch (where applicable)
- Diesel particulate filter regeneration inhibit switch (where applicable)

Cab LCD Display

A digital four (4)-row by 20-character dot matrix display will be integral to the gauge panel. The display will be capable of showing simple graphical images as well as text. The display will be split into three (3) sections. Each section will have a dedicated function. The upper left section will display the outside ambient temperature.

The upper right section will display, along with other configuration specific information:

- Odometer
- Trip mileage
- PTO hours
- Fuel consumption
- Engine hours

The bottom section will display INFO, CAUTION, and WARNING messages. Text messages will automatically activate to describe the cause of an audible caution or warning alarm. The LCD will be capable of displaying multiple text messages should more than one caution or warning condition exist.

AIR RESTRICTION INDICATOR

A high air restriction warning indicator light LCD message with amber warning indicator and audible alarm will be provided.



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"DO NOT MOVE APPARATUS" INDICATOR

A flashing red indicator light, located in the driving compartment, will be illuminated automatically per the current NFPA requirements. The light will be labeled "Do Not Move Apparatus If Light Is On."

The same circuit that activates the Do Not Move Apparatus indicator will activate a pulsing alarm when the parking brake is released.

DO NOT MOVE TRUCK MESSAGES

Messages will be displayed on the Command Zone™, color display located within sight of the driver whenever the Do Not Move Truck light is active. The messages will designate the item or items not in the stowed for vehicle travel position (parking brake released).

The following messages will be displayed (where applicable):

- Do Not Move Truck
- LS CAB DOOR, the left side cab door is open
- LS CAB COMPT DOOR, the left side cab compartment door is open
- LS CREWCAB DOOR, the left side crew cab door is open
- STEP NOT STOWED, pump house step not stowed
- LS TURNTABLE STEP, left side turntable step not stowed
- AERIAL CONTROL DR, aerial override control compartment door is open
- LS6 COMPT DR, the left side LS6 compartment door is open
- LS5 COMPT DR, the left side LS5 compartment door is open
- LS4 COMPT DR, the left side LS4 compartment door is open
- LS3 COMPT DR, the left side LS3 compartment door is open
- LS2 COMPT DR, the left side LS2 compartment door is open
- LS1 COMPT DR, the left side LS1 compartment door is open
- LS AIR BTL COMPT DR, the left side air bottle compartment door is open
- LS BASKET STEP, the left side basket steps not stowed
- STABILIZER CTRL DR, the rear stabilizer control compartment door is open
- STABILIZER DEPLOYED, the stabilizers are not stowed.
- LS CORD REEL DR, the left side cord reel compartment door is open
- RS CORD REEL DR, the right side cord reel compartment door is open
- B1 REAR COMPT DR, the rear B1 compartment door is open
- TURNTBL CTRL CNSL, the turntable control console not stowed.
- RS BASKET STEP, the right side basket steps not stowed
- RS AIR BTL COMPT DR, the right side air bottle compartment door is open.
- RS1 COMPT DR, the right side RS1 compartment door is open
- RS2 COMPT DR, the right side RS2 compartment door is open
- RS3 COMPT DR, the right side RS3 compartment door is open
- RS4 COMPT DR, the right side RS4 compartment door is open
- RS5 COMPT DR, the right side RS5 compartment door is open



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- RS6 COMPT DR, the right side RS6 compartment door is open
- RS7 COMPT DR, the right side RS7 compartment door is open
- RS CREWCAB DR, the right side crew cab door is open
- RS CAB COMPT DR, the right side cab compartment door is open
- RS CAB DR, the right side cab door is open
- LT TOWER NOT STOWED, the light tower is not stowed

Any other device that is opened, extended, or deployed that creates a hazard or is likely to cause major damage to the apparatus if the apparatus is moved will be displayed as a caution message after the parking brake is released.

SWITCH PANELS

The emergency light switch panel will have a master switch for ease of use plus individual switches for selective control. Each switch panel will contain eight (8) membrane-type switches each rated for one million (1,000,000) cycles. Panels containing less than eight (8) switch assignments will include non-functioning black appliqué. Documentation will be provided by the manufacturer indicating the rated cycle life of the switches. The switch panel(s) will be located in the overhead position above the windshield on the driver side overhead to allow for easy access.

Additional switch panel(s) will be located in the overhead position(s) above the windshield or in designated locations on the lower instrument panel layout.

The switches will be membrane-type and also act as an integral indicator light. For quick, visual indication the entire surface of the switch will be illuminated white whenever back lighting is activated and illuminated green whenever the switch is active. An active illuminated switch will flash when interlock requirements are not met or device is actively being load managed. For ease of use, a two (2)-ply, scratch resistant laser engraved Gravoply label indicating the use of each switch will be placed in the center of the switch. The label will allow light to pass through the letters for ease of use in low light conditions.

WIPER CONTROL

For simple operation and easy reach, the windshield wiper control will be an integral part of the directional light lever located on the steering column. The wiper control will include high and low wiper speed settings, a one (1)-speed intermittent wiper control and windshield washer switch. The control will have a "return to park" provision, which allows the wipers to return to the stored position when the wipers are not in use.

HOURMETER - AERIAL DEVICE

The following aerial hour meter messages will be included in the information centers:

- Aerial Hours, that keeps track of the time the aerial device is in motion.
- Aerial PTO Hours, that keeps track of the time the aerial master switch is on and the aerial PTO is engaged.



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AERIAL MASTER

There will be a master switch for the aerial operating electrical system provided.

AERIAL PTO SWITCH

A PTO switch for the aerial with indicator light will be provided.

CAB USB

There will be four (4) USB terminations with a combination USB type A & C, wired to battery direct power, and provided per the following:

- One (1) within reach of the driver
- One (1) within reach of the passenger
- Two (2) on the rear of the engine tunnel, one (1) each side.

Battery direct loads cannot be load managed.

SPARE CIRCUITS

There will be one (1) shared 20 amp circuit, including a positive and a negative wire, dropped out in multiple locations on the apparatus. All dropout locations will be wired in a parallel configuration.

The wires will have the following features:

- The positive wire will be connected directly to the battery power
- The negative wire will be connected to ground

The spare wiring circuit will be located and terminated as follows:

1. Spare circuit drop #1 will panel #9 and termination with a power point plug with rubber cover
2. Spare circuit drop #2 will panel #9 and termination with a power point plug with rubber cover
3. Spare circuit drop #3 will (1) in the rear, tucked into the center seat riser and termination with heat shrinkable butt splices at the wire end
4. Spare circuit drop #4 will in the electronics box over the engine loc 9 and termination with 3/8" studs and plastic covers
5. Spare circuit drop #5 will not be required and termination is not required with no location

Wires will be protected to meet the NFPA Automotive Fire Apparatus standard.

Battery Direct loads cannot be Load Managed.

SPARE CIRCUIT

There will be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

The wires will have the following features:



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- The positive wire will be connected directly to the battery power
- The negative wire will be connected to ground
- Wires will be capable of carrying 20 amps
- Power and ground will terminate an additional one (1) in the electronics box over the engine behind panel #9 rearward
- Termination will be with 3/8" studs and plastic covers
- Wires will be protected to meet the NFPA Automotive Fire Apparatus standard

Battery direct loads cannot be Load Managed

SPARE CIRCUIT

There will be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

The wires will have the following features:

- The positive wire will be connected directly to the battery power.
- The negative wire will be connected to ground.
- Wires will be capable of carrying 20 amps.
- Power and ground will terminate one (1) in the electronics box over the engine behind panel #9 rearward.
- Termination will be with 3/8" studs and plastic covers.
- Wires will be protected to meet the NFPA Automotive Fire Apparatus standard.

Battery direct loads cannot be Load Managed.

DASH PANEL RECESS

The dash panel across from the officer will be recessed to accommodate the mounting of miscellaneous items. The recess will be 7.25" down x 7.81" back and 20.88" wide.

INFORMATION CENTER

An information center employing a 7.00" diagonal touch screen color LCD display will be encased in an ABS plastic housing.

The information center will have the following specifications:

- Operate in temperatures from -40 to 158 degrees Fahrenheit
- LCD optically bonded to hardened AR glass lens
- Five weather resistant user interface switches
- Grey with black accents
- Sunlight Readable
- Linux operating system
- Minimum of 1000nits rated display
- Display can be changed to an available foreign language



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- A LCD display integral to the cab gauge panel will be included as outlined in the cab instrumentation area.
- Programmed to read US Customary

General Screen Design

Where possible, background colors will be used to provide "At a Glance" vehicle information. If information provided on a screen is within acceptable limits, a green background will be used.

If a caution or warning situation arises the following will occur:

- An amber background/text color will indicate a caution condition
- A red background/text color will indicate a warning condition
- The information center will utilize an "Alert Center" to display text messages for audible alarm tones. The text messages will be written to identify the item(s) causing the audible alarm to sound. If more than one (1) text message occurs, the messages will cycle every second until the problem(s) have been resolved. The background color for the "Alert Center" will change to indicate the severity of the "warning" message. If a warning and a caution condition occur simultaneously, the red background color will be shown for all alert center messages.
- A label for each button will exist. The label will indicate the function for each active button for each screen. Buttons that are not utilized on specific screens will have a button label with no text or symbol.

Home/Transit Screen

This screen will display the following:

- Vehicle Mitigation (if equipped)
- Water Level (if the water level system includes compatible communications to the information center)
- Foam Level (if the foam level system includes compatible communications to the information center)
- Seat Belt Monitoring Screen
- Tire Pressure Monitoring (if equipped)
- Digital Speedometer
- Active Alarms

On Scene Screen

This screen will display the following and will be auto activated with pump engaged (if equipped):

- Battery Voltage
- Fuel
- Oil Pressure
- Coolant Temperature
- RPM



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- Water Level (if equipped)
- Foam Level (if equipped)
- Foam Concentration (if equipped)
- Water Flow Rate (if equipped)
- Water Used (if equipped)
- Active Alarms

Virtual Buttons

There will be four (4) virtual switch panel screens that match the overhead and lower lighting and HVAC switch panels.

Page Screen

The page screen will display the following and allow the user to progress into other screens for further functionality:

- Diagnostics
 - Faults
 - Listed by order of occurrence
 - Allows to sort by system
 - Interlock
 - Throttle Interlocks
 - Pump Interlocks (if equipped)
 - Aerial Interlocks (if equipped)
 - PTO Interlocks (if equipped)
 - Load Manager
 - A list of items to be load managed will be provided. The list will provide a description of the load.
 - The lower the priority numbers the earlier the device will be shed should a low voltage condition occur.
 - The screen will indicate if a load has been shed (disabled) or not shed.
 - "At a glance" color features are utilized on this screen.
 - Systems
 - Command Zone
 - Module type and ID number
 - Module Version
 - Input or output number
 - Circuit number connected to that input or output
 - Status of the input or output
 - Power and Constant Current module diagnostic information
 - Foam (if equipped)
 - Pressure Controller (if equipped)
 - Generator Frequency (if equipped)



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- Live Data
 - General Truck Data
- Maintenance
 - Engine oil and filter
 - Transmission oil and filter
 - Pump oil (if equipped)
 - Foam (if equipped)
 - Aerial (if equipped)
- Setup
 - Clock Setup
 - Date & Time
 - 12 or 24 hour format
 - Set time and date
 - Backlight
 - Daytime
 - Night time
 - Sensitivity
 - Unit Selection
 - Home Screen
 - Virtual Button Setup
 - On Scene Screen Setup
 - Configure Video Mode
 - Set Video Contrast
 - Set Video Color
 - Set Video Tint
- Do Not Move
 - The screen will indicate the approximate location and type of item that is open or is not stowed for travel. The actual status of the following devices will be indicated
 - Driver Side Cab Door
 - Passenger's Side Cab Door
 - Driver Side Crew Cab Door
 - Passenger's Side Crew Cab Door
 - Driver Side Body Doors
 - Passenger's Side Body Doors
 - Rear Body Door(s)
 - Ladder Rack (if applicable)
 - Deck Gun (if applicable)
 - Light Tower (if applicable)
 - Hatch Door (if applicable)
 - Stabilizers (if applicable)
 - Steps (if applicable)



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- Notifications
 - View Active Alarms
 - Shows a list of all active alarms including date and time of the occurrence is shown with each alarm
 - Silence Alarms - All alarms are silenced
- Timer Screen
- HVAC (if equipped)
- Tire Information (if equipped)
- Ascendant Set Up Confirmation (if equipped)

Button functions and button labels may change with each screen.

COLLISION MITIGATION

There will be a HAAS Alert®, Model HA7 Responder-to-Vehicle (R2V) collision avoidance system provided on the apparatus. The HA7 cellular transponder module will be installed behind the cab windshield, as high and near to the center as practical, to allow clear visibility to the sky. The module dimensions are 5.40" long x 2.70" wide x 1.30" high, and operating temperature range is -40 degrees Celsius to 85 degrees Celsius.

The transponder will be connected to the vehicle's emergency master circuit and battery direct power and ground.

While responding with emergency lights on, the HA7 transponder sends alert messages via cellular network to motorists in the vicinity of the responding truck that are equipped with the WAZE app.

While on scene with emergency lights on, the HA7 transponder sends road hazard alerts to motorists in the vicinity of the truck that are equipped with the WAZE app.

The HA7 Responder-to-Vehicle (R2V) collision avoidance system will include the transponder and a 5 year cellular plan subscription.

Activation of the HAAS Alert system requires a representative of the customer to accept the End User License Agreement (EULA) via an on-line portal.

VEHICLE DATA RECORDER

There will be a vehicle data recorder (VDR) capable of reading and storing vehicle information provided.

The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A USB cable can be used to connect the VDR to a laptop to retrieve required information. The program to download the information from the VDR will be available to download on-line.

The vehicle data recorder will be capable of recording the following data via hardwired and/or CAN inputs:



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- Vehicle Speed - MPH
- Acceleration - MPH/sec
- Deceleration - MPH/sec
- Engine Speed - RPM
- Engine Throttle Position - % of Full Throttle
- ABS Event - On/Off
- Seat Occupied Status - Yes/No by Position
- Seat Belt Buckled Status - Yes/No by Position
- Master Optical Warning Device Switch - On/Off
- Internal clock syncs the time and date when a laptop is connected.

Seat Belt Monitoring System

A seat belt monitoring system (SBMS) will be provided on the Command Zone™ color display. The SBMS will be capable of monitoring up to 10 seating positions indicating the status of each seat position per the following:

- Seat Occupied & Buckled = Green LED indicator illuminated
- Seat Occupied & Unbuckled = Red LED indicator with audible alarm
- No Occupant & Buckled = Red LED indicator with audible alarm
- No Occupant & Unbuckled = No indicator and no alarm
- FAULT = Blue LED indicator illuminated

The seat belt monitoring screen will become active on the Command Zone color display when:

- The home screen is active:
 - and there is any occupant seated but not buckled or any belt buckled with an occupant.
 - and there are no other Do Not Move Apparatus conditions present. As soon as all Do Not Move Apparatus conditions are cleared, the SBMS will be activated.

The SBMS will include an audible alarm that will warn that an unbuckled occupant condition exists and the parking brake is released, or the transmission is not in park.

INTERCOM SYSTEM

There will be a Setcom 1350 (6) position triple radio intercom system provided.

This system will consist of Driver and Officer position with Radio push to talk capabilities and (4) Crew Cab positions with radio listen only. There will be a MS1350 Master station and a RS-1310 remote station with a RSM-1310E radio select switch. (3) Radio interface cables will also be provided. Headsets will be included in this system option

SYSTEM TO INCLUDE

One (1) MS-1350 master station

One (1) RS-1310 remote station



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- Four (4) JS-1350 jump seat stations
- Two (2) ES-1310A-20 extension stations
- One (1) MJSC-30 jump seat cable
- One (1) MRC-4 interconnect cable
- One (1) RSM-1310E radio select module
- One (1) MAC-7AYY-2 microphone adapter cable
- Two (2) RC-6GTE radio interface cables
- One (1) CSB-1310R radio transmit headset
- One (1) CSB-1310L radio transmit headset
- Two (2) CSB-1310JSR-8 intercom only headsets
- Two (2) CSB-1310JSL-8 intercom only headsets

MOBILE RADIOS

There will be (2) two Harris mobile radios provided for the Denver / Denver International Airport

The radios will be mounted lower center dash, left slot and lower center dash, right slot. The following options will be applied for each radio. Radios will be installed by preferred vendor.

XI-200M

- XZ-MPMIM MOBILE, XL-200M, MULTIBAND
- XZ-PL4J FEATURE, VHF BAND
- XZ-PL4L FEATURE, 700/800 MHZ BAND
- XZ-PL4F FEATURE, PHASE 2 TDMA
- XZ-PL5L FEATURE, OTARXZ-PKGMZ
- XZ-PKGPT FEATURE PACKAGE, MAX ZONE CAPACITY
- XZ-PKG8F FEATURE, 256-AES, 64-DES ENCRYPTION
- XZ-PKGPT FEATURE PACKAGE, P25 TRUNKING
- XZ-MA4A KIT, MOUNTING XL-MOBILE UNIVERSAL
- XZ-MC6A MICROPHONE, XL, STANDARD MOBILE
- XZ-AN8A ANTENNA, ELEMENT, FLEXIBLE, V/U/700/800
- XZ-CP6A CONTROL UNIT, XL-CH



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XL-185M

- XT-MPSIM MOBILE, XL-185M, SINGLE-BAND
- XT-PL4F FEATURE, PHASE 2 TDMA
- XT-PL5L FEATURE, OTAR
- XT-PKGMZ FEATURE PACKAGE, MAX ZONE CAPACITY
- XT-PKG8F FEATURE, 256-AES, 64-DES ENCRYPTION
- XT-PL4L FEATURE, SINGLE BAND, 7/800
- XT-PKGPT FEATURE PACKAGE, P25 TRUNKING
- XT-MA4A KIT, MOUNTING XL-MOBILE UNIVERSAL
- XT-MC6A MICROPHONE, XL, STANDARD MOBILE
- XT-AN8D ANTENNA, ELEMENT, 700/800 3DB
- XT-CP6A CONTROL UNIT, XL-CH

CHARGER

- XL-CH6H CHARGER, VEHICULAR, PREMIUM, XL-200P

RADIO ANTENNA MOUNT

There will be three (3) standard antenna-mounting base(s), Model MATM, with 17 feet of coax cable and weatherproof cap provided for a two (2)-way radio installation. The standard mount will be located on the cab roof, just to the rear of the officer seat and the additional mount(s) will be located on cab roof just to the rear of PS lightbar, one in each far corner of the crew cab roof. The cable(s) will be routed routed to officer seat box .

VEHICLE CAMERA SYSTEM

There will be a color vehicle camera system provided with the following:

- One (1) Standard Definition (SD) camera located at the rear of the apparatus, pointing rearward, displayed automatically with the vehicle in reverse.

The camera images will be displayed on the left side vehicle information center display. Audio from the microphone on the rear camera will be emitted by an amplified speaker on the ceiling behind the driver.

The following components will be included:

- One (1) SV-CW134639CAI Camera
- All necessary cables

Camera Switcher

A camera switcher is not required.

ELECTRICAL POWER CONTROL SYSTEM

The primary power distribution will be located forward of the officer's seating position and be easily accessible while standing on the ground for simplified maintenance and troubleshooting. Additional



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electrical distribution centers will be provided throughout the vehicle to house the vehicle's electrical power, circuit protection, and control components. The electrical distribution centers will be located strategically throughout the vehicle to minimize wire length. For ease of maintenance, all electrical distribution centers will be easily accessible. All distribution centers containing fuses, circuit breakers and/or relays will be easily accessible.

Distribution centers located throughout the vehicle will contain battery powered studs for supplying customer installed equipment thus providing a lower cost of ownership.

Circuit protection devices, which conform to SAE standards, will be utilized to protect electrical circuits. All circuit protection devices will be rated per NFPA requirements to prevent wire and component damage when subjected to extreme current overload. General protection circuit breakers will be Type-I automatic reset (continuously resetting). When required, automotive type fuses will be utilized to protect electronic equipment. Control relays and solenoid will have a direct current rating of 125 percent of the maximum current for which the circuit is protected per NFPA.

Solid-State Control System

A solid-state electronics based control system will be utilized to achieve advanced operation and control of the vehicle components. A fully computerized vehicle network will consist of electronic modules, electronic control modules to include black housings, a power indicator and status indicator located near their point of use to reduce harness lengths and improve reliability. The control system will comply with SAE J1939-11 recommended practices.

The control system will operate as a master-slave system whereas the main control module instructs all other system components. The system will contain patented Mission Critical software that maintains critical vehicle operations in the unlikely event of a main controller error. The system will utilize a Real Time Operating System (RTOS) fully compliant with OSEK/VDX™ specifications providing a lower cost of ownership.

For increased reliability and simplified use the control system modules will include the following attributes:

- Green LED indicator light for module power
- Red LED indicator light for network communication stability status
- Control system self test at activation and continually throughout vehicle operation
- No moving parts due to transistor logic
- Software logic control for NFPA mandated safety interlocks and indicators
- Integrated electrical system load management without additional components
- Integrated electrical load sequencing system without additional components
- Customized control software to the vehicle's configuration
- Factory and field programmable to accommodate changes to the vehicle's operating parameters

To assure long life and operation in a broad range of environmental conditions, the solid-state control system modules will meet the following specifications:



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- Module circuit board will meet SAE J771 specifications
- Operating temperature from -40 degrees Celsius to +70 degrees Celsius (-40 degrees Fahrenheit to +158 degrees Fahrenheit)
- Storage temperature from -40 degrees Celsius to +70 degrees Celsius (-40 degrees Fahrenheit to +158 degrees Fahrenheit)
- Vibration to 50g
- IP67 rated enclosure (Totally protected against dust and also protected against the effect of temporary immersion between 15 centimeters and one (1) meter)
- Operating voltage from eight (8) volts to 32 volts DC

The main controller will activate status indicators and audible alarms designed to provide warning of problems before they become critical.

Circuit Protection and Control Diagram

Copies of all job-specific, computer network input and output (I/O) connections will be provided with each chassis. The sheets will indicate the function of each module connection point, circuit protection information (where applicable), wire numbers, wire colors and load management information.

On-Board Electrical System Diagnostics

The on-board information center will include the following diagnostic information:

- Text description of active warning or caution alarms
- Simplified warning indicators
- Amber caution indication with intermittent alarm
- Red warning indication with steady tone alarm

Advanced diagnostic feature will be provided in this control system. From the Command Zone display or connected wireless device, these features allow the user to monitor the real-time status of every input or output on the vehicle. It also allows users logged in as an administrator to force on inputs or outputs to assist the troubleshooting process.

TCU Module with WiFi

An in cab module will provide WiFi wireless interface and data logging capability. The WiFi interface will comply with IEEE 802.11 b/g/n capabilities while communicating at 2.4 Gigahertz. The module will communicate through a white WiFi antenna allowing a line of site communication range of up to 300 feet with a roof mounted antenna.

The module will transmit a password protected web page to a WiFi enabled device (i.e. most smart phones, tablets or laptops) allowing two levels of user interaction. The firefighter level will allow vehicle monitoring of the vehicle and firefighting systems on the apparatus. The technician level will allow diagnostic access to inputs and outputs installed on the Command Zone™, control and information system.



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The TCU capability will record faults from the engine, transmission, ABS and Command Zone™, control and information systems as they occur. No other data will be recorded at the time the fault occurs. The data TCU will provide up to 2 Gigabytes of data storage.

The TCU will provide a means to download the TCU information and update software in the device.

Indicator Light and Alarm Prove-Out System

A system will be provided which automatically tests basic indicator lights and alarms located on the cab instrument panel.

Voltage Monitor System

A voltage monitoring system will be provided to indicate the status of the battery system connected to the vehicle's electrical load. The system will provide visual and audible warning when the system voltage is below or above optimum levels.

The alarm will activate if the system falls below 11.8 volts DC for more than two (2) minutes.

Dedicated Radio Equipment Connection Points

There will be three (3) studs provided in the primary power distribution center located in front of the officer for two-way radio equipment. The studs will consist of the following:

- 12-volt 40-amp battery switched power
- 12-volt 60-amp ignition switched power
- 12-volt 60-amp direct battery power

There will also be a 12-volt 100-amp ground stud located in or adjacent to the power distribution center.

EMI/RFI Protection

To prevent erroneous signals from crosstalk contamination and interference, the electrical system will meet, at a minimum, SAE J551/2, thus reducing undesired electromagnetic and radio frequency emissions. An advanced electrical system will be used to ensure radiated and conducted electromagnetic interference (EMI) or radio frequency interference (RFI) emissions are suppressed at their source.

The apparatus will have the ability to operate in the electromagnetic environment typically found in fire ground operations to ensure clean operations. The electrical system will meet, without exceptions, electromagnetic susceptibility conforming to SAE J1113/25 Region 1, Class C EMR for 10KHz-1GHz to 100 Volts/Meter. The vehicle OEM, upon request, will provide EMC testing reports from testing conducted on an entire apparatus and will certify that the vehicle meets SAE J551/2 and SAE J1113/25 Region 1, Class C EMR for 10KHz-1GHz to 100 Volts/Meter requirements. Component and partial (incomplete) vehicle testing is not adequate as overall vehicle design can impact test results and thus is not acceptable by itself.

EMI/RFI susceptibility will be controlled by applying appropriate circuit designs and shielding. The electrical system will be designed for full compatibility with low-level control signals and high-powered



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two-way radio communication systems. Harness and cable routing will be given careful attention to minimize the potential for conducting and radiated EMI/RFI susceptibility.

ELECTRICAL SYSTEM PROGNOSTICS

There will be a software based vehicle tool provided to predict remaining life of the vehicles critical fluid and events.

The system will send automatic indications to the Command Zone™ information center and/or wireless enabled devices to proactively alert of upcoming service intervals.

Prognostics will include the following:

- Engine oil and filter
- Transmission oil and filter

ELECTRICAL

All 12-volt electrical equipment installed by the apparatus manufacturer will conform to modern automotive practices. All wiring will be high temperature crosslink type. Wiring will be run, in loom or conduit, where exposed and have grommets where wire passes through sheet metal. Automatic reset circuit breakers will be provided which conform to SAE Standards. Wiring will be color, function and number coded. Function and number codes will be continuously imprinted on all wiring harness conductors at 2.00" intervals. Exterior exposed wire connectors will be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids.

Electrical wiring and equipment will be installed utilizing the following guidelines:

6. All holes made in the roof will be caulked with silicon. Large fender washers, liberally caulked, will be used when fastening equipment to the underside of the cab roof.
7. Any electrical component that is installed in an exposed area will be mounted in a manner that will not allow moisture to accumulate in it. Exposed area will be defined as any location outside of the cab or body.
8. Electrical components designed to be removed for maintenance will not be fastened with nuts and bolts. Metal screws will be used in mounting these devices. Also a coil of wire will be provided behind the appliance to allow them to be pulled away from mounting area for inspection and service work.
9. Corrosion preventative compound will be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections will require this compound in the plug to prevent corrosion and for easy separation (of the plug).
10. All lights that have their sockets in a weather exposed area will have corrosion preventative compound added to the socket terminal area.
11. All electrical terminals in exposed areas will have silicon applied completely over the metal portion of the terminal.



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All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard #108, will be furnished. Rear identification lights will be recessed mounted for protection. Lights and wiring mounted in the rear bulkheads will be protected from damage by installing a false bulkhead inside the rear compartments.

An operational test will be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.

The results of the tests will be recorded and provided to the purchaser at time of delivery.

BATTERY SYSTEM

Five (5) 12 volt, Stryten/Exide, Model 31S950X3W, group 31 batteries that include the following features will be provided:

- 950 CCA, cold cranking amps
- 190 amp reserve capacity
- High cycle
- Rating of 4750 CCA at 0 degrees Fahrenheit
- 950 minutes of reserve capacity
- Threaded stainless steel studs

Each battery case will be a black polypropylene material with a vertically ribbed container for increased vibration resistance. The cover will be manifold vented with a central venting location to allow a 45 degree tilt capacity.

The inside of each battery will consist of a "maintenance free" grid construction with poly wrapped separators and a flooded epoxy bottom anchoring for maximum vibration resistance.

ISOLATED BATTERY

One (1) 12 volt, Exide, Model 31S950X3W, battery will be provided for voltage sensitive components. A battery isolator appropriately suited for the battery capacity will be supplied.

BATTERY SYSTEM

There will be a single starting system with an ignition switch and starter button provided and located on the cab instrument panel.

MASTER BATTERY SWITCH

There will be a master battery switch provided within the cab within easy reach of the driver to activate the battery system.

An indicator light will be provided on the instrument panel to notify the driver of the status of the battery system.



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BATTERY COMPARTMENTS

The batteries will be stored in well-ventilated compartments that are located under the cab and bolted directly to the chassis frame. The battery compartments will be constructed of 3/16" steel plate and be designed to accommodate a maximum of three (3) group 31 batteries in each compartment. The compartments will include formed fit heavy-duty roto-molded polyethylene battery tray inserts with drains on each side of the frame rails. The batteries will be mounted inside of the roto-molded trays.

JUMPER STUDS

One (1) set of battery jumper studs with plastic color-coded covers will be installed on the battery box on the driver's side. This will allow enough room for easy jumper cable access.

BATTERY CHARGER

There will be a Kussmaul™, Chief Series Smart Charger 6012, product code 091-266-12-60, 60 amp battery charger with build-in touch screen display provided.

The battery charger will be wired to the AC shoreline inlet through a junction box located near the battery charger.

The battery charger will be located in the cab behind the driver seat.

REMOTE CONTROL PANEL - BATTERY CHARGER

There will be a Kussmaul™, Chief Series Smart Charger remote control panel, product code 091-266-RCP included.

The battery charger indicator/remote panel will be displayed through the window behind the driver seat. The display will be mounted on a bracket so that it is visible from outside the apparatus in the lower corner of the window.

KUSSMAUL AUTO EJECT FOR SHORELINE

There will be one (1) Kussmaul Model 091-55-15-120, 15 amp 120 volt AC shoreline inlet(s) provided to operate the dedicated 120 volt AC circuits on the apparatus without the use of the generator.

The shoreline inlet(s) will include yellow weatherproof flip up cover(s).

There will be a release solenoid wired to the vehicle's starter to eject the AC connector when the engine is starting.

The shoreline(s) will be connected to the battery charger and six place receptacle strip in the cab. .

There will be a mating connector body supplied with the loose equipment.

There will be a label installed near the inlet(s) that state the following:

- Line Voltage



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- Current Rating (amps)
- Phase
- Frequency

The shoreline receptacle will be located centered over the driver side cab wheel.

ALTERNATOR

A Delco Remy®, Model 55SI, alternator will be provided. It will have a rated output current of 430 amps, as measured by SAE method J56. The alternator will feature an integral regulator and rectifier system that has been tested and qualified to an ambient temperature of 257 degrees Fahrenheit (125 degrees Celsius). The alternator will be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.

CHASSIS FRAME & REAR SUBSTRUCTURE SPLICE AND RING TERMINAL SEALING

Butt Splice: A butt splice is defined as an insulated crimped connection used to join wires.

All butt splices installed in the chassis frame and rear substructure will be heat shrinkable type and shrunk at each splice. If a butt splice is not used it will be shrunk to prevent moisture from reaching the wire.

Ring Terminal: A ring terminal is defined as a crimped wire termination with an eyelet intended to be secured on a stud.

All ring terminals installed in the chassis frame and rear substructure will have the crimp sealed front and back with heat shrinkable material to prevent moisture from reaching the wire. The exposed ring of the terminal will be covered in sealant after it has been installed on a stud.

ELECTRONIC LOAD MANAGER

An electronic load management (ELM) system will be provided that monitors the vehicles 12-volt electrical system, automatically reducing the electrical load in the event of a low voltage condition, and automatically restoring the shed electrical loads when a low voltage condition expires. This ensures the integrity of the electrical system.

For improved reliability and ease of use, the load manager system will be an integral part of the vehicle's solid state control system requiring no additional components to perform load management tasks. Load management systems which require additional components will not be allowed.

The system will include the following features:

- System voltage monitoring.
- A shed load will remain inactive for a minimum of five minutes to prevent the load from cycling on and off.
- Sixteen available electronic load shedding levels.
- Priority levels can be set for individual outputs.
- High Idle to activate before any electric loads are shed and deactivate with the service brake.



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- If enabled:
 - "Load Man Hi-Idle On" will display on the information center.
 - Hi-Idle will not activate until 30 seconds after engine start up.
- Individual switch "on" indicator to flash when the particular load has been shed.
- The information center indicates system voltage.

The information center, where applicable, includes a "Load Manager" screen indicating the following:

- Load managed items list, with priority levels and item condition.
- Individual load managed item condition:
 - ON = not shed
 - SHED = shed

SEQUENCER

A sequencer will be provided that automatically activates and deactivates vehicle loads in a preset sequence thereby protecting the alternator from power surges. This sequencer operation will allow a gradual increase or decrease in alternator output, rather than loading or dumping the entire 12 volt load to prolong the life of the alternator.

For improved reliability and ease of use, the load sequencing system will be an integral part of the vehicle's solid state control system requiring no additional components to perform load sequencing tasks. Load sequencing systems which require additional components will not be allowed.

Emergency light sequencing will operate in conjunction with the emergency master light switch. When the emergency master switch is activated, the emergency lights will be activated one by one at half-second intervals. Sequenced emergency light switch indicators will flash while waiting for activation.

When the emergency master switch is deactivated, the sequencer will deactivate the warning light loads in the reverse order.

Sequencing of the following items will also occur, in conjunction with the ignition switch, at half-second intervals:

- Cab Heater and Air Conditioning
- Crew Cab Heater (if applicable)
- Crew Cab Air Conditioning (if applicable)
- Exhaust Fans (if applicable)
- Third Evaporator (if applicable)

HEADLIGHTS

There will be four (4) JW Speaker®, Model 8800, 4" x 6" rectangular LED lights mounted in the front quad style, chrome housing on each side of the cab grille:

- the outside light on each side will contain a part number 055***1 low beam module
- the inside light on each side will contain a part number 055***1 high beam module



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- the headlights to include chrome bezels

The low beam lights will be activated when the headlight switch is on.

The high beam and low beam lights will be activated when the headlight switch and the high beam switch is activated.

DIRECTIONAL LIGHTS

There will be two (2) Whelen 600® series, LED combination directional/marker lights provided. The lights will be located on the outside cab corners, next to the headlights.

The color of the lenses will be the same color as the LED's.

INTERMEDIATE LIGHT

There will be two (2) Weldon, Model 9186-8580-29, amber LED turn signal marker lights furnished, one (1) each side, in the rear fender panel. The light will double as a turn signal and marker light.

CAB CLEARANCE/MARKER/ID LIGHTS

There will be seven (7) amber LED lights provided to indicate the presence and overall width of the vehicle in the following locations:

- Three (3) amber LED identification lights will be installed in the center of the cab above the windshield.
- Two (2) amber LED clearance lights will be installed, one (1) on each outboard side of the cab above the windshield.
- Two (2) amber LED marker lights will be installed, one (1) on each side above the cab doors.

REAR CLEARANCE/MARKER/ID LIGHTING

There will be three (3) LED identification lights located at the rear of the apparatus installed per the following:

- As close as practical to the vertical centerline and one (1) on each outside edge
- Centers spaced not less than 6.00" or more than 12.00" apart
- Red in color
- All at the same height
- All visible from the rear

There will be two (2) LED lights installed at the rear of the apparatus used as clearance lights located at the rear of the apparatus per the following:

- To indicate the overall width of the vehicle
- One (1) each side of the vertical centerline
- As near the top as practical
- Red in color
- To be visible from the rear



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- All at the same height

There will be two (2) LED lights installed on the side of the apparatus used as marker lights as close to the rear as practical per the following:

- To indicate the overall length of the vehicle
- One (1) each side of the vertical centerline
- As near the top as practical
- Red in color
- To be visible from the side
- All at the same height

There will be two (2) red reflectors located on the rear of the truck facing to the rear. One (1) each side, as far to the outside as practical, at a minimum of 15.00", but no more than 60.00", above the ground.

There will be two (2) red reflectors located on the side of the truck facing to the side. One (1) each side, as far to the rear as practical, at a minimum of 15.00", but no more than 60.00", above the ground.

Per FMVSS 108 and CMVSS 108 requirements.

MARKER LIGHTS

There will be one (1) pair of amber and red LED marker lights with rubber arm, located at the rear most lower corner of the body. The amber lens will face the front and the red lens will face the rear of the truck.

These lights will be activated with the running lights of the vehicle.

REAR FMVSS LIGHTING

The rear stop/tail and directional lighting included in the rear tail light housing will include the following:

- Two (2) Whelen®, Model M62BTT, 4.30" high x 6.70" wide x 1.40" deep brake/tail lights with red LEDs
- Two (2) Whelen, Model M62T, 4.30" high x 6.70" wide x 1.40" deep directional lights with amber LEDs. The directional lights will be set to Steady On (Arrow) flash pattern.
- The lens color(s) to be the same as the LEDs.

There will be two (2) Whelen Model M62BU, LED backup lights provided in the tail light housing.

LICENSE PLATE BRACKET

One (1) license plate bracket constructed of stainless steel will be provided at the rear of the apparatus.

One (1) white LED light with chrome housing will be provided to illuminate the license plate. A stainless steel light shield will be provided over the light that will direct illumination downward, preventing white light to the rear.



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LIGHTING BEZEL

There will be two (2) Whelen, Model M6FCV4P, four (4) place chromed ABS housings with Pierce logos provided for the rear M6 series stop/tail, directional, back up, scene lights or warning lights.

BACK-UP ALARM

A PRECO, Model 1040, solid-state electronic audible back-up alarm that actuates when the truck is shifted into reverse will be provided. The device will sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum ten (10) dBA above surrounding environmental noise levels.

CAB PERIMETER SCENE LIGHTS

There will be four (4) Amdor, Model AY-LB-12HW0**, white LED strip lights provided, one (1) for each cab door that will meet NFPA ground lighting requirements.

These lights will be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body perimeter scene lights.

PUMP HOUSE PERIMETER LIGHTS

There will be one (1) Amdor, Model AY-LB-12HW020, 350 lumens, 20.00" LED weatherproof strip light with bracket provided under the passenger's side pump panel running board.

If the combination of options in the vehicle does not permit clearance for a 20.00" light, a 12.00" version of the Amdor light will be installed.

The light will be activated when the battery switch is on, and controlled by the same means as the body perimeter lights.

BODY PERIMETER SCENE LIGHTS

There will be three (3) Amdor®, Model AY-LB-12HW012, 190 lumen, 12.00" long, white 12 volt DC LED strip lights provided.

The lights will be mounted in the following locations.

- One (1) light will be provided under the left side turntable access steps
- One (1) light will be provided under the left side basket access steps
- One (1) light will be provided under the right side basket access steps

The perimeter scene lights will be activated when the parking brake is applied.

ENHANCED SOFTWARE FOR PERIMETER LIGHTS

All perimeter lights will be deactivated when the parking brake is released unless alternate control is selected.

The cab and crew cab perimeter lights will remain on for ten (10) seconds for improved visibility after the doors closed.



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STEP ILLUMINATION

The running board(s) under the pump panel(s) will be illuminated by the lights included in the overhead pump panel light shield.

Additional steps on the apparatus will be illuminated per the current edition of applicable NFPA standards.

12 VOLT LIGHTING

There will be a HiViz Model FT-B-72-*-* , 2.56" high x 72.69" long x 3.31" deep 21,067 effective lumens 12 volt DC light with white LEDs configured with a combination of flood and spot optics provided on brackets in front of the cab roof.

The painted parts of the light housing and brackets to be white.

The light will be activated by a switch at the driver's side switch panel and by a switch at the passenger's side switch panel.

The light may be load managed when the parking brake is applied.

12 VOLT LIGHTING

There will be one (1) HiViz®, Model FT-MB-24-**-*GWA0011, 2.96" high x 31.11" long x 2.45" deep, 12,672 raw lumens, 12 volt DC light(s) with a combination of flood and spot optics and adjustable bail brackets installed on the cab Passenger side cab above rear cab door. The light(s) to be installed directly to the roof of the cab.

The painted parts of the light housing and brackets to be white.

The light(s) will be activated by a switch at the driver's side switch panel and by a switch at the passenger's side switch panel.

The light(s) may be load managed when the parking brake is applied.

12 VOLT LIGHTING

There will be one (1) HiViz®, Model FT-MB-24-**-*GWA0011, 2.96" high x 31.11" long x 2.45" deep, 12,672 raw lumens, 12 volt DC light(s) with a combination of flood and spot optics and adjustable bail brackets installed on the cab driver side cab above rear cab door. The light(s) to be installed directly to the roof of the cab.

The painted parts of the light housing and brackets to be white.

The light(s) will be activated by a switch at the driver's side switch panel and by a switch at the passenger's side switch panel.

The light(s) may be load managed when the parking brake is applied.



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12 VOLT LIGHTING

There will one (1) HiViz Model FT-MB-33-*-* , 12,196.8 effective lumens 2.06" high x 42.44" long x 2.45" deep 12 volt DC light(s) with white LEDs and a combination of flood and spot optics provided on the apparatus body located, DS Above LS3 .

The painted parts of the light housing and brackets to be white.

The light(s) will be controlled by a switch at the left side pump panel and by the same switching that has been selected for the other side scene light(s) on the apparatus.

The light(s) may be load managed when the parking brake is applied.

12 VOLT LIGHTING

There will one (1) HiViz Model FT-MB-9-TR-*-* , 3,326.4 effective lumens 2.87" high x 13.87" long x 2.45" deep 12 volt DC light(s) with white LEDs and a combination of flood and spot optics provided on the apparatus located, PS body over rear out rigger.

The painted parts of the light housing and brackets to be white.

The light(s) will be controlled by the same switching that has been selected for the other side scene light(s) on the apparatus.

The light(s) may be load managed when the parking brake is applied.

12 VOLT LIGHTING

There will be two (2) Whelen® Model PCPSM1* , 10,444 lumens 12 volt DC surface mount light(s) installed on the body of the apparatus located, each side of rear body.

The light(s) will include black housing(s) with a chrome cover.

The light(s) will be controlled by a switch at the driver's side switch panel, by a switch at the left side pump panel and by a switch at the passenger's side switch panel.

The light(s) may be load managed when the parking brake is applied.

12 VOLT LIGHTING

There will one (1) HiViz Model FT-MB-9-TR-*-* , 3,326.4 effective lumens 2.87" high x 13.87" long x 2.45" deep 12 volt DC light(s) with white LEDs and a combination of flood and spot optics provided on the apparatus located, DS body over the rear out rigger.

The painted parts of the light housing and brackets to be white.

The light(s) will be controlled by the same switching that has been selected for the other side scene light(s) on the apparatus.

The light(s) may be load managed when the parking brake is applied.



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12 VOLT LIGHTING

There will one (1) HiViz Model FT-MB-33-*-* , 12,196.8 effective lumens 2.06" high x 42.44" long x 2.45" deep 12 volt DC light(s) with white LEDs and a combination of flood and spot optics provided on the apparatus body located, PS Above RS3.

The painted parts of the light housing and brackets to be white.

The light(s) will be controlled by the same switching that has been selected for the other side scene light(s) on the apparatus and by a switch at the right side pump panel.

The light(s) may be load managed when the parking brake is applied.

HOSE BED LIGHTS

There will be 12 volt DC light strips with stainless steel protective covers and white LEDs provided to illuminate the hose bed area per the following:

- A light strip will be installed along the front edge of the hose bed facing rearward.
- A light strip will be installed under the boom support facing forward.

The lights will be activated by a cup switch at the rear of the apparatus no more than 72.00" from the ground.

WALKING SURFACE LIGHT

There will be two (2) Model P25 12 volt DC LED lights with chrome housing provided to illuminate the top of body walking surface. These LED lights will be located on the rear facing surface of the upper portion of the body to illuminate the walking surface to the platform basket. There will be a Model FRP, 4" round black 12 volt DC LED floodlight located forward on the left side top of the body.

These lights will be activated when "Aerial Master" is on.

SWITCH, RADIO MASTER W/40 AMP BREAKER

A master switch will be provided for the radio operating electrical system to include a 40 amp breaker. Radio will default to on with battery switch. The wiring will terminate beneath the officers seat, in the radio compartment.

WATER TANK

The water tank will have a capacity of 300 gallons and will be constructed of UV stabilized ultra high impact polypropylene plastic.

The joints and seams will be nitrogen welded inside and out.

The tank will be baffled in accordance with the current edition of applicable NFPA standards.

The baffles will have vent openings at both the top and bottom of each baffle to permit movement of air and water between compartments.



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The longitudinal partitions will be constructed of 0.38" polypropylene plastic and extend from the bottom of the tank through the top cover to allow positive welding.

The transverse partitions extend from 4.00" off the bottom to the underside of the top cover.

All partitions interlock and will be welded to the tank bottom and sides.

The tank top will be constructed of 0.50" polypropylene.

It will be recessed 0.38" and will be welded to the tank sides and the longitudinal partitions.

It will be supported to keep it rigid during fast filling conditions.

Construction will include 2.00" polypropylene dowels spaced no more than 30.00" apart and welded to the transverse partitions.

Two (2) of the dowels will be drilled and tapped (0.50" diameter, 13.00" deep) to accommodate lifting eyes.

A sump will be provided at the bottom of the water tank. The sump will include a drain plug and the tank outlet.

Tank will be installed on top of the torque box with the use of two (2) brackets constructed of structural steel. The torque box will resist transferring any torsional stress caused by the chassis frame flexing to the water tank.

Rubber cushions, 0.50" thick x 3.00" wide, will be placed on all horizontal surfaces that the tank rests on.

Stops will be provided to prevent an empty tank from bouncing excessively while moving vehicle.

Tank mounting system will be approved by the manufacturer.

Fill tower will be constructed of .50" polypropylene and will be a minimum of 6.00" wide x 12.00" long.

Fill tower will be furnished with a .25" thick polypropylene screen and a hinged cover.

An overflow pipe, constructed of 3.00" schedule 40 polypropylene, will be installed approximately halfway down the fill tower and extend through the water tank and exit to the rear of the rear axle.

HOSE BED

The hose bed will be fabricated of 0.125" 5052-H32 aluminum with a tensile strength range of 31,000 to 38,000 psi.

The hose bed will be located between the aerial boom support and water tank.

There will be a hose chute to the side and rear of the hose bed on the right side to allow for payout/removal of the hose.



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The hose bed flooring will consist of removable aluminum grating with a top surface that is perforated to aid in hose aeration.

The hose bed/cargo area walls will be unpainted and dual action finished.

Hose capacity will be a minimum of 500' of 5.00".

AERIAL HOSE BED HOSE RESTRAINT

The hose in the hose bed will be restrained as follows:

- The hose bed forward of the aerial boom support and in the upper body area will be restrained by a red vinyl cover with Velcro® securing all four (4) sides.
- The hose bed chute located under the aerial basket will be restrained by an aluminum treadplate cover and guide plate at the transition point of the upper hose bed to the lower hose chute. The cover will hinge to the inside to allow ease of access to the hose.
- The rear of the hose bed chute will be restrained with black webbing that will have 1.00" web straps that loop through footman loops and fasten with spring clip and hook fasteners.

RUNNING BOARDS

The running boards will be fabricated of 0.125" bright aluminum treadplate and supported by structural steel angle assemblies bolted to the chassis frame rails.

Running boards will be 13.00" deep and are spaced away from the body 0.50".

A splash guard will be provided to keep road dirt or water from splashing up onto the pump panels.

The running boards will have a riser on the body to protect the painted surface from damage by stepping on the running boards.

The entire surface of the running boards will be covered with bright aluminum treadplate.

TURNTABLE STEPS

Access to the turntable will be provided by a set of swing-down steps on the left side of the truck. No bottom flip step to be provided. The bottom step will have a step height not exceeding 24.00" from the ground to the top surface of the step at any time. All steps will have a height no greater than 14.00" from top surface to top surface.

The access steps will be located just behind the front body and in front of the middle stabilizer.

The swing down step assembly will be constructed of D/A finished aluminum with bright aluminum treadplate steps. The steps to have a punched grip pattern design.

The stepwell will be lined with bright aluminum treadplate to act as scuffplates.

A knurled aluminum handrail will be provided on the left side of the steps.

Holes will be provided in each side step plate for hand holds.



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The steps will be connected to the "Do Not Move Truck" indicator in the cab.

STEP LIGHTS

There will be three (3) white P25 LED step lights provided for the aerial turntable access steps.

In order to ensure exceptional illumination, each light will provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.

The step lights will be activated by when the parking brake is applied and when the aerial master switch is activated.

SMOOTH ALUMINUM REAR WALL

The rear wall will be smooth aluminum.

TOW EYES

Two (2) rear painted tow eyes will be located at the rear of the apparatus and will be mounted directly to the frame rails. The inner and outer edges of the tow eyes will be radiused. Each tow eye will be rated for 9000 lb. The tow eyes will be painted to match the lower job color.

COMPARTMENTATION

Compartmentation will be fabricated of 0.125" 5052 aluminum.

Side compartments will be an integral assembly with the rear fenders.

Circular fender liners will be provided. For prevention of rust pockets and ease of maintenance, the fender liners will be formed from aluminum and removable for maintenance.

Compartment flooring will be of the sweep out design with the floor higher than the compartment door lip.

Drip protection will be provided above the doors by means of bright aluminum extrusion, formed bright aluminum treadplate or polished stainless steel.

The top of the compartment will be covered with bright aluminum treadplate rolled over the edges on the front, rear and outward side. These covers will have the corners welded.

Side compartment covers will be separate from the compartment tops.

All screws and bolts, which are not Grade 8, will be stainless steel and where they protrude into a compartment will have acorn nuts on the ends to prevent injury.

UNDERBODY SUPPORT SYSTEM

The backbone of the body support system will begin with the aerial torque box which is the strongest component of the apparatus and is designed for sustaining maximum loads.



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An aluminum body structure will be mounted to the aerial torque box at four (4) points using neoprene elastomer isolators. The front mounts will attach from structural steel brackets on the sides of the torque box to a structural tube on the body. The rear mounts will attach structural members on the rear body to the top of the rear down rigger mounting structure.

The combination of the elastomer isolators and the body structure design allow the chassis and torque box to flex without driving loads into the body.

The compartment floor support design will result in an 800 lb equipment support rating per lower compartment, and a 500 lb equipment support rating for the upper, over the axle compartments.

AGGRESSIVE WALKING SURFACE

All exterior surfaces designated as stepping, standing, and walking areas will comply with the required average slip resistance of the current NFPA standards.

LOUVERS

All body compartments will be vented to provide one (1) way airflow out of the compartment that prevents water and dirt from gaining access to the compartment.

TESTING OF BODY DESIGN

Body structural analysis will be fully tested. Proven engineering and test techniques such as finite element analysis, model analysis, and strain gauging have been performed with special attention given to fatigue, life and structural integrity of the body and substructure.

The body will be tested while loaded to its greatest in-service weight.

The criteria used during the testing procedure will include:

- Raising opposite corners of the vehicle tires 9.00" to simulate the twisting a truck may experience when driving over a curb.
- Making a 90 degree turn, while driving at 20 mph to simulate aggressive driving conditions.
- Driving the vehicle on at 35 mph on a washboard road.
- Driving the vehicle at 55 mph on a smooth road.
- Accelerating the vehicle fully, until reaching the approximate speed of 45 mph on rough pavement.

LEFT SIDE COMPARTMENTATION

The override door forward of the stabilizer will include a pair of flush lift and turn latches.

A full height rollup door compartment ahead of the rear wheels will be approximately 29.16" wide x 23.25" high (floor to false ceiling) x 27.13" deep inside with a minimum clear door opening of approximately 26.38" wide x 21.37" high.



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One (1) rollup door compartment above the fender compartments and over the rear axles will be provided. The compartment will be approximately 84.00" wide x 16.50" high (floor to false ceiling) x 27.13" deep inside with a minimum clear door opening of approximately 81.25" wide x 15.25" high.

A full height rollup door compartment behind the rear wheels will be approximately 41.25" wide x 47.00" high (floor to false ceiling) x 27.13" deep. The minimum clear door opening will be approximately 38.50" wide x 47.00" high.

One (1) rollup door compartment behind the rear stabilizer will be provided. The compartment will be approximately 18.13" wide x 38.63" high (floor to false ceiling) x 27.13" deep inside with a minimum clear door opening of approximately 15.50" wide x 38.87" high.

Roll-up door compartments will include a drip pan below the roll of the door.

RIGHT SIDE COMPARTMENTATION

A full height rollup door compartment ahead of the front stabilizer will be provided. The compartment will be approximately 18.38" wide x 27.75" high (floor to false ceiling) x 9.91" deep inside with a minimum clear door opening of approximately 15.63" wide x 28.37" high.

A full height rollup door compartment ahead of the rear wheels will be approximately 29.13" wide x 23.25" high (floor to false ceiling) x 27.13" deep inside with a minimum clear door opening of approximately 26.38" wide x 21.37" high.

One (1) rollup door compartment above the fender compartments and over the rear axles will be approximately 59.00" wide x 16.50" high (floor to false ceiling) x 15.75" deep inside with a minimum clear door opening of approximately 56.25" wide x 15.25" high.

A full height rollup door compartment behind the rear wheels will be approximately 41.25" wide x 47.00" high (floor to false ceiling). It will be 27.13" deep in the lower 41.50" of compartment height and 15.75" deep in the remaining upper portion. The minimum clear door opening will be approximately 38.50" wide x 47.00" high.

One (1) rollup door compartment behind the rear stabilizer will be approximately 18.13" wide x 38.63" high (floor to false ceiling) x 27.13" deep inside with a minimum clear door opening of approximately 15.50" wide x 38.87" high.

Roll-up door compartments will include a drip pan below the roll of the door.

SIDE COMPARTMENT ROLL-UP DOOR(S)

There will be nine (9) compartment doors installed on the side compartments, double faced, aluminum construction, painted one (1) color to match the lower portion of the body and manufactured by AMDOR™ brand roll-up doors.

Door(s) will be constructed using 1.00" extruded double wall aluminum slats which will feature a flat smooth interior surface to provide maximum protection against equipment hang-up. The slats will be



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connected with a structural driven ball and socket hinge designed to provide maximum curtain diaphragm strength. Mounting and adjusting the curtain will be done with a clip system that connects the curtain to the balancer drum allowing for easy tension adjustment without tools. The slats will be mounted in reusable slat shoes with positive snap-lock securement.

Each slat will incorporate weather tight recessed dual durometer seals. One (1) fin will be designed to locate the seal within the extrusion. The second will serve as a wiping seal which will also allow for compression to prevent water ingress.

The doors will be mounted in a one (1)-piece aluminum side frame with recessed side seals to minimize seal damage during equipment deployment. All seals including side frames, top gutters and bottom panel are to be manufactured utilizing non-marring materials.

Bottom panel flange of roll-up door will be equipped with two (2) cut-outs to allow for easier access with gloved hands.

A stainless steel lift bar to be provided for opening the door and located at the bottom of each door with latches on the outer extrusion of the door frame. A ledge to be supplied over lift bar for additional area to aid in closing the door. The lift bar will be located at the bottom of door with striker latches installed at the base of the side frames. Side frame mounted door strikers will include support beneath the stainless steel lift bar to prevent door curtain bounce, improve bottom seal life expectancy and to avoid false door ajar signals.

All injection molded roll-up door wear components will be constructed of Type 6 nylon.

Each roll-up door will have a 3.00 inch diameter balancer/tensioner drum to assist in lifting the door.

The header for the roll-up door assembly will not exceed 4.00".

A heavy-duty magnetic switch will be used for control of open compartment door warning lights.

REAR BUMPER

A 3.00" rear bumper will be furnished. Bumper will be constructed of steel and will be covered with polished aluminum treadplate. The bumper will be 2.50" deep x 4.00" high and will be spaced away from the body approximately 0.50". The corners of the bumper will be angled at 45 degrees to be flush with the angled rear body. It will extend the full width of the body.

COMPARTMENT LIGHTING

There will be nine (9) compartments with On Scene Solutions LED compartment light strips. The strips will be centered vertically along each side of the door framing. The compartments with these strip lights will be located all body compartments.

Opening the compartment door will automatically turn the compartment lighting on.

MOUNTING TRACKS

There will be recessed tracks installed vertically to support the adjustable shelf(s).



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Tracks will not protrude into any compartment in order to provide the greatest compartment space and widest shelves possible.

The tracks will be provided in each compartment except for the one that contains the pump operator's panel.

ADJUSTABLE SHELVES

There will be six (6) shelves with a capacity of 500 lb provided.

The shelf construction will consist of .188" aluminum painted spatter gray with 2.00" sides.

Each shelf will be infinitely adjustable by means of a threaded fastener, which slides in a track.

The shelves will be held in place by .12" thick stamped plated brackets and bolts.

The location(s) will be in LS1 at the depth transition point, in RS5 at the transition point, in RS1 centered between the floor and the ceiling, in RS4 centered between the floor and the ceiling, in RS2 at the transition point and in LS2 centered between the floor and ceiling.

SLIDE-OUT/TILT-DOWN TRAY

There will be two (2) slide-out trays provided.

The bottom of each tray will be constructed of 0.188" thick aluminum painted spatter gray while special aluminum extrusions will be utilized for the tray sides, ends, and tracks. The corners will be welded to form a rigid unit.

A spring loaded lock will be provided on each side at the front of the tray. Releasing the locks will allow the tray to slide out approximately two-thirds (2/3) of its length from the stowed position and tip 30 degrees down from horizontal. The tray will be equipped with ball bearing rollers for smooth operation.

Rubber padded stops will be provided for the tray in the extended position.

The capacity rating of the tray will be a minimum of 215 lb in the extended position.

The vertical position of the tray within the compartment will be adjustable.

The location(s) will be in RS3 centered between the floor and the ceiling and in LS3 centered between the floor and ceiling to right of the partition.

SLIDE-OUT FLOOR MOUNTED TRAY

There will be one (1) floor mounted slide-out tray(s) provided LS4. Each tray will be rated for up to 500lb in the extended position. The tray(s) will be constructed of .19" aluminum. The finish will be painted to match compartment interior.

The side height of the tray(s) will be as follows:

- Front: 2.00" high



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- Rear: 18.00" high
- Left and Right Sides: tapered up in height from the front to the rear

There will be two undermount-roller bearing type slides rated at 250lb each provided. The pair of slides will have a safety factor rating of 2.

To ensure years of dependable service, the slides will be coated with a finish that is tested to withstand a minimum of 1,000 hours of salt spray per ASTM B117.

To ensure years of easy operation, the slides will require no more than a 50lb force for push-in or pull-out movement when fully loaded after having been subjected to a 40 hour vibration (shaker) test under full load. The vibration drive file will have been generated from accelerometer data collected from a heavy truck chassis driven over rough gravel roads in an unloaded condition. Proof of compliance will be provided upon request.

Automatic locks will be provided for both the "in" and "out" positions. The trip mechanism for the locks will be located at the front of the tray for ease of use with a gloved hand.

ONE WAY HOSE TRAY IN TORQUE BOX

There will be one (1) 120.00" long slide-out hose tray provided on the lower left side of torque box side in the torque box. The overall inside tray dimensions will be 16.00" wide x 12.00" deep. A full length divider will be provided in the tray to allow for a split hose storage. The divider will be located to allow for the following hose capacities (left side and right side): 280' of 3.00" double jacket hose on the left side and 180' of double jacket hose on the right side.

The capacity rating will be 500 lb in the extended position.

Tray will slide out in one (1) direction only; 120.00" of its length.

The construction will consist of .188" thick aluminum for the sides and inboard end of the tray. The outboard end of the tray will be left open for hose deployment.

Each side of the tray will be hinged and flip down when the tray is fully extended. This will aid in the repacking of the hose.

Tray will be supported by a 130.00" Innovative Industries SlideMaster SM3-HD slide system.

Locks will be provided for both the in and out tray positions.

SLIDE-OUT FLOOR MOUNTED TRAY

There will be five (5) floor mounted slide-out tray(s) with 2.00" sides provided LS1, LS2, RS1, RS4 and RS2 - 15" wide and forward of 10" tray/toolboard provided in option 0791448.. Each tray will be rated for up to 500lb in the extended position. The tray(s) will be constructed of .19" aluminum with non-welded corners. The finish will be painted spatter gray.



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There will be two undermount-roller bearing type slides rated at 250lb each provided. The pair of slides will have a safety factor rating of 2.

To ensure years of dependable service, the slides will be coated with a finish that is tested to withstand a minimum of 1,000 hours of salt spray per ASTM B117.

To ensure years of easy operation, the slides will require no more than a 50lb force for push-in or pull-out movement when fully loaded after having been subjected to a 40 hour vibration (shaker) test under full load. The vibration drive file will have been generated from accelerometer data collected from a heavy truck chassis driven over rough gravel roads in an unloaded condition. Proof of compliance will be provided upon request.

Automatic locks will be provided for both the "in" and "out" positions. The trip mechanism for the locks will be located at the front of the tray for ease of use with a gloved hand.

SWING OUT TOOLBOARD

A swing out aluminum toolboard will be provided.

It will be a minimum of 0.188" thick with .203" diameter holes in a pegboard pattern with 1.00" centers between holes.

A 1.00" x 1.00" aluminum tube frame will be welded to the edge of the pegboard.

The board will be mounted on a pivoting device at the front of the compartment on the top and bottom to allow easy movement in and out of the compartment. The maximum tool load will be 400 lb.

The board will have positive lock in the stowed and extended position.

The board will have a D-ring handle to secure it in the stowed position.

The board will be mounted stationary within the compartment.

One (1) toolboard(s) will be provided. The toolboard(s) will be spatter gray painted and installed in LS3 full height and width.

SWING OUT TOOLBOARD

A swing out aluminum toolboard will be provided.

It will be a minimum of .188" thick with .203" diameter holes in a pegboard pattern with 1.00" centers between holes.

A 1.00" x 1.00" aluminum tube frame will be welded to the edge of the pegboard.

The board will be mounted on a pivoting device at the back of the compartment on the top and bottom to allow easy movement in and out of the compartment. The maximum tool load will be 400 pounds.

The board will have positive lock in the stowed and extended position.



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The board will have a D-ring handle to secure it in the stowed position.

The board will be mounted stationary within the compartment.

One (1) toolboard(s) will be provided spatter gray painted and installed LS3 full height and width.

SLIDE OUT TOOLBOARD

A slide out aluminum toolboard will be provided.

It will be a minimum of .188" thick with .281" diameter diameter holes in a pegboard pattern with 1.00" centers between holes.

A 1.00" x 1.00" aluminum tube frame will be welded to the edge of the pegboard. A handhold cutout will be provided on the outboard edge of the toolboard.

The board will be mounted on an under mount - roller bearing type slide rated at 250lbs with a 100% safety factor.

To ensure years of dependable service the slides will be coated with a finish that is tested to withstand a minimum of 1,000 hours of salt spray per ASTM B117.

To ensure years of easy operation, the slides will also be able to operated smoothly without bumps or sticky spots after a 40 hour vibrations test (reference MIL-STD 810E section 514.4 basic transportation vibration category 1) while fully loaded. Proof of compliance will be provided upon request.

The slide will be mounted mounted stationary within the compartment.

The board will have positive lock in the stowed and extended position.

There will be One (1) toolboard(s) provided. The toolboard(s) will be spatter gray painted and installed RS2 immediately right (forward) of partition.

A 10.00" wide tray will be centered above the slide and under the toolboard as a catch for anything that may fall off the toolboard.

TOOL BOARD

An aluminum tool board will be provided.

It will be a minimum of 0.188" thick with .281" diameter holes in a pegboard pattern with 1.00" centers between holes.

A 1.00" x 1.00" aluminum tube frame will be welded to the edge of the board.

The board will be installed on adjustable tracks on a slide out tray. The tracks will allow side to side adjustment. The board will be as high as space permits and full length of the tray. The tray is not included in this option.



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Two (2) toolboard(s) will be provided. The toolboard(s) will be spatter gray painted and installed 15" wide floor tray in RS2 and 14.25" wide tray in RS1.

PEGBOARD

There will be Two (2) partitions provided. The partition(s) will be aluminum pegboard bolted in LS3 24" from FORWARD clear door opening in RS2 (leave 10" clear from the rear door opening).

The pegboard will be .188" thick with .281" diameter holes punched 1.00" on center in a pegboard pattern.

Each partition will be the full vertical height of the compartment.

The pegboard will be aluminum painted spatter gray.

215LB AIR BAG/CRIB STORAGE

There will be two (2) storage area installed under the LS2 and RS2 compartment. Construction will be of bright aluminum treadplate with an aluminum slide out drawer and a "D" ring handle. The outer panel of the drawer will be covered in brush finished stainless steel.

The compartment will have the capacity to hold up to 215lb of equipment. The exterior dimensions of the compartment will be approximately 8.00" high x 44.00" wide x 29.00" deep. Inside dimensions will be approximately 6.00" high x 39.07" wide x 26.50" deep.

RUB RAIL

Bottom edge of the side compartments will be trimmed with a bright aluminum extruded rub rail.

Trim will be 3.12" high with 1.50" flanges turned outward for rigidity.

The rub rails will not be an integral part of the body construction, which allows replacement in the event of damage.

BODY FENDER CROWNS

Polished stainless steel fender crowns will be provided around the rear wheel openings.

An unpainted fender liner will be provided to avoid paint chipping. The liners will be removable to aid in the maintenance of rear suspension components.

A dielectric barrier will be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.

The fender crowns will be held in place with stainless steel screws that thread directly into a composite nut and not directly into the parent body sheet metal to eliminate dissimilar metals contact and greatly reduce the chance for corrosion.

HARD SUCTION HOSE

Hard suction hose will not be required.



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HANDRAILS

The handrails will be 1.25" diameter knurled aluminum to provide a positive gripping surface.

Chrome plated end stanchions will support the handrail. Plastic gaskets will be used between end stanchions and any painted surfaces.

Drain holes will be provided in the bottom of all vertically mounted handrails.

Handrails will be provided to meet current edition of applicable NFPA standards. The handrails will be installed as noted on the sales drawing.

There is to be a step provided below the right side running board.

AIR BOTTLE STORAGE (TRIPLE)

A quantity of two (2) air bottle compartments designed to hold (3) air bottles up to 7.25" in diameter x 26.00" deep will be provided on the right side forward of the rear wheels and on the right side rearward of the rear wheels. A polished stainless steel door with a chrome plated flush lift & turn latch will be provided to contain the air bottle. A dielectric barrier will be provided between the door hinge, hinge fasteners and the body sheet metal.

Inside the compartment, black rubber matting will be provided.

Air Bottle Compartment Strap

A strap will be provided in the air bottle compartment(s) to help contain the air bottles when the vehicle is parked on an incline. The strap will wrap around the neck and attach to the wall of the compartment.

AIR BOTTLE STORAGE

A total of one (1) air bottle compartment will be provided and located on the left side forward of the rear wheels. The triangular door to cover the air bottle opening and the DEF tank access. The air bottle compartment will be a minimum of 15.00" wide x 7.50" tall x 23.50" deep. A polished stainless steel, triangular shaped door with a chrome plated flush lift & turn latch will be provided. A dielectric barrier will be provided between the door hinge, hinge fasteners and the body sheet metal.

Inside the compartment, black rubber matting will be provided.

AIR BOTTLE STORAGE

A total of one (1) air bottle compartment will be provided and located on the left side rearward of the rear wheels. The triangular door to cover the air bottle opening and the fuel tank access. The air bottle compartment will be a minimum of 15.00" wide x 7.50" tall x 26.00" deep. A polished stainless steel, triangular shaped door with a chrome plated flush lift & turn latch will be provided. A dielectric barrier will be provided between the door hinge, hinge fasteners and the body sheet metal.

Inside the compartment, black rubber matting will be provided.



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EXTENSION LADDER

There will be one (1) 35' two (2) section aluminum Duo-Safety Series 1200-A extension ladder(s) provided.

AERIAL EXTENSION LADDERS

There will be one (1) 28' two (2) section aluminum Duo-Safety Series 1200-A extension ladder(s) provided and located in the aerial torque box.

ROOF LADDER

There will be two (2) 16' aluminum Duo-Safety Series 875-A roof ladder(s) provided.

AERIAL ATTIC EXTENSION LADDER

There will be one (1) 14' Fresno aluminum Duo-Safety Series 701 attic extension ladder(s) provided.

AERIAL FOLDING LADDER

There will be one (1) 10' aluminum Duo-Safety Series 585-A folding ladder(s) provided and located in the aerial torque box.

GROUND LADDER STORAGE

The ground ladders are stored within the torque box and are removable from the rear.

Ladders will be enclosed to prevent road dirt and debris from fouling or damaging the ladders.

The ladders rest in full length stainless steel slides and are arranged in such a manner that any one ladder can be removed without having to move or remove any other ladder.

A Gortite rollup door will be provided at the rear, double faced, aluminum construction, and an anodized satin finish. A polished stainless steel lift bar to be provided for the rear roll-up door. The latching mechanism will consist of a full length lift bar lock with latches on the outer extrusion of the door frame.

A 6.00" tall stainless plate with a two bend flange and a stainless steel hinge will be provided to secure the aerial ladder complement. The plate assembly will be mounted to the bottom of the entrance of the torque box ladder storage area.

When the plate is vertical, it will secure the ladders and prevent them from migrating to the rear of the apparatus. When the plate is down and not securing the ladders, the roll-up door can not close, which will activate the "Open Door Indicator Light" within the cab. The roll-up door together with a Southco raised trigger C2 chrome lever latch on each side of the plate will secure the plate in place during driving operations.

Compartment Storage

Below the ground ladder storage will be a water resistant storage compartment with interior measurements of 36.75" wide x 14.88" high x 19.75" deep. The compartment will have a single pan,



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drop down door with a pair of Southco raised trigger C2 chrome latches. The compartment and door material will match body interior. The opening will be 32.38" wide x 11.75" high.

LADDER STORAGE LIGHTING

There will be 36.00" white 12 volt DC LED strip lights provided to illuminate the torque box ladder storage area and the compartment directly below the ladder storage. One (1) light will be provided on each side of the ladder storage area.

The lights will be activated when the ladder storage compartment door is opened.

ADDITIONAL FOLDING LADDER

One (1) Revolution 2.0 Model 13117 Little Giant folding ladder will be provided. The stored dimensions will be 55.50" high x 23.75" wide x 9.25" deep. The weight will be 32 lbs.

The ladder will be located cab roof.

NESTED LADDER STORAGE

There will be nested ladders on the right side of the ladder storage compartment.

TROUGH, S/S, STRUT STORAGE

There will be four (4) stainless steel trough(s) provided in the torque box ladder storage rack right side of the torque box. The trough(s) will be designed to fit struts that are make/model length as follows, or trough size as follows: TBD.

PIKE POLE, 3'

Two (2) pike poles 3' long Duo-Safety, with "D" handle, will be provided and located ship loose along with the two (2) 3' Fire Hooks Unlimited pike poles.

PIKE POLES

There will be two (2) 12' Duo Safety pike pole(s) with fiberglass handles provided. The pike pole(s) will be stored in tubular holders located in the ground ladder storage compartment.

8' PIKE POLE

There will be two (2) 8' Duo Safety pike pole(s) with fiberglass handle provided. The pike pole(s) will be stored in tubular holders located in the ground ladder storage compartment.

6' PIKE POLE

There will be two (2) 6' Duo Safety pike pole(s) with fiberglass handle provided. The pike pole(s) will be stored in tubular holders located in the ground ladder storage compartment.

3' PIKE POLE

There will be two (2) 3' Duo Safety pike pole(s) with fiberglass shaft and "D" handles shipped loose.

PIKE POLE STORAGE IN TORQUE BOX/LADDER STORAGE

There will be a total of one (1) stainless steel trough(s) provided in the torque box/ladder storage area.



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The trough(s) will accommodate a Fire Hooks Unlimited 12' roof hook with D handle.

PIKE POLE STORAGE IN TORQUE BOX/LADDER STORAGE

There will be aluminum tubing provided in the torque box/ladder storage area for a total of two (2) pike poles. The pike pole tube(s) will be notched to allow a New York style pike pole to fit in the tube.

If the head of a pike pole can come into contact with a painted surface, a stainless steel scuffplate will be provided.

PUMP COMPARTMENT

The pump compartment will be separate from the hose body and compartments so that each may flex independently of the other. The pump compartment will be constructed of the same material as the body compartmentation.

The pump compartment substructure will be a fabricated assembly of steel tubing, angles and channels which supports both the fire pump and the side running boards.

The pump compartment will be mounted on the chassis frame rails with rubber biscuits in a four point pattern to allow for chassis frame twist.

Pump compartment, pump, plumbing and gauge panels will be removable from the chassis in a single assembly.

PUMP MOUNTING

Pump will be mounted to a substructure which will be mounted to the chassis frame rail using rubber isolators. The mounting will allow chassis frame rails to flex independently without damage to the fire pump.

LEFT SIDE PUMP CONTROL PANELS

All pump controls and gauges will be located at the left side of the apparatus and properly identified.

Layout of the pump control panel will be ergonomically efficient and systematically organized.

The pump operator's control panel will be removable in two (2) main sections for ease of maintenance:

The upper section will contain sub panels for the mounting of the pump pressure control device, engine monitoring gauges, electrical switches, and foam controls (if applicable). Sub panels will be removable from the face of the pump panel for ease of maintenance. Below the sub panels will be located all valve controls and line pressure gauges.

The lower section of the panel will contain all inlets, outlets, and drains.

All push/pull valve controls will have 1/4 turn locking control rods with polished chrome plated zinc tee handles. Guides for the push/pull control rods will be chrome plated zinc castings securely mounted to the pump panel. Push/pull valve controls will be capable of locking in any position. The control rods will pull straight out of the panel and will be equipped with universal joints to eliminate binding. The linkage



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from the control rod to the valve will be stainless steel, this will not include the clevis ends of the linkage which will remain anodized steel.

IDENTIFICATION TAGS

The identification tag for each valve control will be recessed in the face of the tee handle.

All discharge outlets will have color coded identification tags, with each discharge having its own unique color. Color coding will include the labeling of the outlet and the drain for each corresponding discharge.

All line pressure gauges will be mounted directly above the corresponding discharge control tee handles and recessed within the same chrome plated casting as the rod guide for quick identification. The gauge and rod guide casting will be removable from the face of the pump panel for ease of maintenance. The casting will be color coded to correspond with the discharge identification tag.

All remaining identification tags will be mounted on the pump panel in chrome plated bezels.

Trim rings will be installed around all inlets and outlets.

PUMP

Pump will be a Waterous ESU1 2000 gpm single (1) stage midship mounted centrifugal type. The pump will be end suction, single inlet type.

Pump will be the class "A" type.

Pump will deliver the percentage of rated discharge at pressure indicated below:

- 100 percent of rated capacity at 150 psi net pump pressure.
- 70 percent of rated capacity at 200 psi net pump pressure.
- 50 percent of rated capacity at 250 psi net pump pressure.

The pump body will be cast in grey iron. It will have double striping edge volute to minimize radial forces at all flow rates.

The impellers will be bronze, accurately balanced (mechanically and hydraulically), labyrinth type, wear rings that resist water bypass and loss of efficiency due to wear.

The impeller shaft will be stainless steel, accurately ground to size.

The impeller shaft will be supported at each end by oil or grease lubricated anti-friction ball bearings for rigid and precise support. Bearings will be protected from water and sediment by suitable seal housing, and oil seal. No sleeve type bearings will be used.

The seal housings will be equipped with self-adjusting, maintenance-free, mechanical shaft seal.

MECHANICAL SEAL ON PUMP

Pump will be equipped with a self-adjusting, maintenance-free, mechanical shaft seal.



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The mechanical seal will consist of a flat, highly polished, spring fed carbon ring that rotates with the impeller shaft. The carbon ring will press against a highly polished stainless steel stationary ring that is sealed within the pump body.

In addition, a throttling ring will be pressed into the steel chamber cover, providing a very small clearance around the rotating shaft in the event of a mechanical seal failure. The pump performance will not deteriorate, nor will the pump lose prime, while drafting if the seal fails during pump operation.

Wear rings will be bronze and easily replaceable to restore original pump efficiency and eliminate the need to replace the entire pump casing due to wear.

PUMP TRANSMISSION

Pump transmission will be made of a three (3) piece, high tensile aluminum, horizontally split casing. Power transfer to pump will be through a passive lubricated, Morse HY-VO drive chain.

Drive shafts will be a minimum of 2.35" diameter hardened and ground alloy steel. All shafts will be ball bearing supported. The case will be designed as to eliminate the need for water cooling.

PUMPING MODE

An interlock system will be provided to ensure that the pump drive system components are properly engaged so that the apparatus can be safely operated. The interlock system will be designed to allow stationary pumping only.

AIR PUMP SHIFT

Pump shift engagement will be made by a two (2) position sliding collar, actuated pneumatically (by air pressure), with a three (3) position air control switch located in the cab. A manual back-up shift control will also be located on the left side pump panel.

Two (2) indicator lights will be provided adjacent to the pump shift inside the cab. One (1) green light will indicate the pump shift has been completed and be labeled "pump engaged". The second green light will indicate when the pump has been engaged, and that the chassis transmission is in pump gear. This indicator light will be labeled "OK to pump".

The pump shift will be interlocked to prevent the pump from being shifted out of gear when the chassis transmission is in gear to meet NFPA requirements.

The pump shift control in the cab will be illuminated to meet NFPA requirements.

TRANSMISSION LOCK-UP

The direct gear transmission lock-up for the fire pump operation will engage automatically when the pump shift control in the cab is activated.

AUXILIARY COOLING SYSTEM

A supplementary heat exchange cooling system will be provided to allow the use of water from the discharge side of the pump for cooling the engine water. The heat exchanger will be a separate unit. It



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will be installed in the pump or engine compartment with the control located on the pump operator's control panel. The exchanger will be plumbed to the master drain valve.

INTAKE RELIEF VALVE - PUMP

There will be One (1) Waterous Model #83827 relief valve(s) installed on the suction side of the pump preset at 150 psig.

The relief valve(s) will have a working range of 50 psi to 250 psi.

The outlet will terminate below the frame rails with a 2.50" National Standard hose thread adapter and will have a "do not cap" warning tag.

PRESSURE CONTROLLER

A FRC Pump Boss 500 electronic pressure controller with one (1) 600 PSI transducer on the pump discharge will be provided. All readouts will be standard PSI.

When a single 300 psi or single 600 psi pressure transducer is selected the transducer is installed in the discharge side of the water pump. The transducer continuously monitors pump pressure sending a signal to the electronic pressure controller.

When a dual 600 psi pressure transducer is selected the transducer are installed in the discharge side and intake side of the water pump. The discharge transducer continuously monitors pump pressure sending a signal to the electronic pressure controller. The intake transducer continuously monitors the pump intake sending a signal to the electronic pressure controller.

The pressure controller can be used in two (2) modes of operation, RPM mode and pressure modes. The controller will be programmed to turn on/default to RPM Setting mode.

In RPM mode, the controller can be activated after vehicle parking brake has been set. When in this mode, the controller will maintain the set engine speed, regardless of engine load (within engine operation capabilities).

In pressure mode, the controller can be activated after vehicle parking brake has been set. When in this mode, the controller will automatically maintain the discharge pressure set by the operator (within the discharge capabilities of the pump and water supply) regardless of flow.

A 2.00" diameter throttle control knob with no mechanical stops, a serrated grip, and a red idle push button in the center will be a integrated/part of the pressure controller. The throttle control knob will be programmed for Clockwise rotation to increase engine speed.

Individual LED indicators for ok to pump, throttle ready, pressure mode and rpm mode will be located on the pressure controller for easy viewing.

Safety features include recognition of low water and no water conditions with an automatic programmed response and a push button to return the engine to idle.



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An additional audible alarm will NOT BE provided.

The pressure controller screen will be LCD. The LCD screen and LED intensity will be automatically adjust for day and nighttime operation. The LCD screen intensity can also be manually adjusted if needed.

The following information will be provided/displayed on the LCD screen:

- Engine RPM
- Check engine and stop engine warning indicators
- Engine oil pressure
- Engine coolant temperature
- Transmission Temp
- Battery voltage
- Operating mode (RPM or pressure)
- Pressure or RPM setting

On screen messaging show diagnostic and warning messages as they occur. It will show apparatus information, stored data, and program options when selected by the operator. It will monitor inputs outputs and support audible and visual warning alarms for the following conditions:

- High battery voltage
- Low battery voltage/engine off
- Low battery voltage/engine running
- High water pump temperature
- Low engine oil pressure
- High engine coolant temperature
- No engine response (visual alarm only)

The pressure controller will store the accumulated operating hours for the pump and engine. These items are to be displayed within the pressure controller menu.

The pressure controller will include a USB port on the back of the controller for easy software upgrades if needed.

PRIMING PUMP

The priming pump will be a Trident Emergency Products compressed air powered, high efficiency, multistage venturi based AirPrime System, conforming to standards outlined in the current edition of applicable NFPA standards.

All wetted metallic parts of the priming system are to be of brass and stainless steel construction.

One (1) priming control will open the priming valve and start the pump primer.



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PUMP MANUALS

There will be a total of two (2) pump manuals provided by the pump manufacturer and furnished with the apparatus. The manuals will be provided by the pump manufacturer in the form of two (2) electronic copies. Each manual will cover pump operation, maintenance, and parts.

PLUMBING, STAINLESS STEEL AND HOSE

All inlet and outlet lines will be plumbed with either stainless steel pipe, flexible polypropylene tubing or synthetic rubber hose reinforced with hi-tensile polyester braid. All hose's will be equipped with brass or stainless steel couplings. All stainless steel hard plumbing will be a minimum of a schedule 10 wall thickness.

Where vibration or chassis flexing may damage or loosen piping or where a coupling is required for servicing, the piping will be equipped with victaulic or rubber couplings.

Plumbing manifold bodies will be ductile cast iron or stainless steel.

All piping lines are to be drained through a master drain valve or will be equipped with individual drain valves. All drain lines will be extended with a hose to drain below the chassis frame.

All water carrying gauge lines will be of flexible polypropylene tubing.

All piping, hose and fittings will have a minimum of a 500 PSI hydrodynamic pressure rating.

FOAM SYSTEM PLUMBING

All piping that is in contact with the foam concentrate or foam/water solution will be stainless steel. The fittings will be stainless steel or brass. Cast iron pump manifolds will be allowed.

MAIN PUMP INLETS

Two (2) 6.00" pump inlets will be provided on the right side of the vehicle.

The suction inlets will include removable zinc screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.

INLET VALVES WITH INTAKE RELIEF VALVE

There will be a Task Force Tips (TFT) AX Series AX1ST-NX with side handwheel and AX1ST-NX-RC with the controller located at the pump operators panel aluminum ball intake valve(s) provided at both the left side and the right side main pump inlets . A matching cap will be included.

If ball intake valve is to be controlled with a manual handwheel, the handwheel will be controlled with a NFPA compliant slow-close hand wheel. A position indicator will be provided to allow for a quick visualization of the status of the valve in the open, closed or transition position.

If the ball intake valve is to be electrically controlled, the ball intake valve will be controlled by a remote panel-mounted push-button switch with LED lights for a quick visualization of the status of the valve in the open, closed or transition position. The push button switch will be mounted on the pump operator's panel.



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The ball intake valve will be equipped with a standard adjustable pressure relief valve. The relief valve will have a working range of 90 PSI to 300 PSI.

A 0.75" TFT bleeder/drain valve will be provided on the ball intake valve to exhaust excess air or water from the valve.

For corrosion protection the aluminum casting will have a hard coat anodized finish, with a powder coated internal and external finish. All the components facing the wet side of the valve will be constructed from stainless steel.

VALVES

All ball valves will be Akron® Brass. The Akron valves will be the 8000 series heavy-duty style with a stainless steel ball and a simple two-seat design. No lubrication or regular maintenance is required on the valve.

Valves will have a **ten (10) year** warranty.

The location of the valve for the one (1) inlet will be recessed behind the pump panel.

INLET CONTROL

The side auxiliary inlet(s) will incorporate a quarter-turn ball valve with the control located at the inlet valve. The valve operating mechanism will indicate the position of the valve.

LEFT SIDE INLET

There will be one (1) auxiliary inlet with a 2.50" valve at the left side pump panel, terminating with a 2.50" (F) National Standard hose thread adapter.

The auxiliary inlet will be provided with a strainer, chrome swivel and plug.

RIGHT SIDE INLET

There will be one (1) auxiliary inlet with a 2.50" valve at the right side pump panel, terminating with a 2.50" (F) National Standard hose thread adapter.

The auxiliary inlet will be provided with a strainer, chrome swivel and plug.

INLET BLEEDER VALVE

A 0.75" bleeder valve will be provided for each side gated inlet.

The valves will be located behind the panel with a "T" swing style handle control extended to the outside of the panel.

The handles will be chrome plated and provide a visual indication of valve position. The swing handle will provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage.

The water discharged by the bleeders will be routed below the chassis frame rails.



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TANK TO PUMP

The booster tank will be connected to the intake side of the pump with heavy duty piping and a quarter turn 3.00" full flow line valve with the control remotely located at the operator's panel. Tank to pump line will run from the pump into the front face of the water tank and angle down into the tank sump. A rubber coupling will be included in this line to prevent damage from vibration or chassis flexing.

A check valve will be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank.

TANK REFILL

A 1.50" combination tank refill and pump re-circulation line will be provided, using a quarter-turn full flow ball valve controlled from the pump operator's panel.

DISCHARGE OUTLET CONTROLS

The discharge outlets will incorporate a quarter-turn ball valve with the control located at the pump operator's panel. The valve operating mechanism will indicate the position of the valve.

If a handwheel control valve is used, the control will be a minimum of a 3.9" diameter stainless steel handwheel with a dial position indicator built into the center of the handwheel.

Any 3.00 inch or larger discharge valve will be a slow-operating valve in accordance with NFPA 1900 2024 Edition 13.7.5.3.

LEFT SIDE DISCHARGE OUTLETS

There will be Two (2) discharge outlets with a 2.50" valve on the left side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.

LEFT SIDE OUTLET ELBOWS

The 2.50" discharge outlets located on the left side pump panel will be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45 degree elbow.

The elbow will be Pierce VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected.

RIGHT SIDE DISCHARGE OUTLET

Three (3) discharge outlets with a 2.50" valve will be provided on the right side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter.

RIGHT SIDE OUTLET ELBOWS

The 2.50" discharge outlets located on the right side pump panel will be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 45 degree elbow.



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The elbow will be Pierce VLH, which incorporates an exclusive thread design to automatically relieve stored pressure in the line when disconnected.

LARGE DIAMETER DISCHARGE OUTLET

There will be an Akron 8800 4.00" flat ball valve with 4.00" plumbing terminating with a 5.00" MNST chrome adapter on the right side pump panel.

The valve will be controlled with a(n) Akron 9343 with an analog pressure gauge located at the pump operator's panel.

LARGE DIAMETER OUTLET ELBOWS

The 5.00" outlet will be furnished with a 5.00" (F) National Standard hose thread x 5.00" Storz elbow adapter with Storz cap.

FRONT DISCHARGE OUTLET

There will be one (1) 1.50" discharge outlet piped to the front. The plumbing will be routed along the left of the apparatus and terminate top right side of bumper.

Plumbing will consist of 2.00" piping and flexible hose with a 2.00" ball valve with control at the pump operator's panel. A fabricated weldment made of stainless steel pipe will be used in the plumbing where appropriate. The piping will terminate with a 1.50" NST with 90 degree stainless steel swivel.

There will be automatic drains provided at all low points of the piping.

DISCHARGE CAPS/ INLET PLUGS

Chrome plated, rocker lug, caps with chain will be furnished for all discharge outlets 1.00" thru 3.00" in size, besides the pre-connected hose outlets.

Chrome plated, rocker lug, plugs with chain will be furnished for all auxiliary inlets 1.00" thru 3.00" in size.

The caps and plugs will incorporate a thread design to automatically relieve stored pressure in the line when disconnected.

OUTLET BLEEDER VALVE

A 0.75" bleeder valve will be provided for each outlet 1.50" or larger. Automatic drain valves are acceptable with some outlets if deemed appropriate with the application.

The valves will be located behind the panel with a T swing style handle control extended to the outside of the side pump panel.

The handles will be chrome plated and provide a visual indication of valve position.

The T swing handle will provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage.



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Bleeders will be located at the bottom of the pump panel. They will be properly labeled identifying the discharge they are plumbed in to.

The water discharged by the bleeders will be routed below the chassis frame rails.

ADAPTER

There will be two (2) adapters with 1.50" FNST X NPSH. These adapters will be installed on crosslay outlet and front discharge.

ADAPTER

There will be one (1) adapter with 2.50" Female NST x 2.50" Male NPSH installed 2.50" crosslay .

ADAPTER, STORZ

There will be one (1) adapter with 5.00" Storz x 2.50" MNST with cap, installed passenger side large diameter.

AERIAL WATERWAY OUTLET

The aerial waterway will be plumbed from the water pump to the aerial device waterway with 5.00" pipe and a 4.00" Akron valve.

The valve will be controlled with a Pierce small handwheel with indicator located at the pump operator's panel.

CROSSLAY HOSE BEDS

Two (2) crosslays with 1.50" outlets will be provided. Each bed to be capable of carrying 200 feet of 1.75" double jacketed hose and will be plumbed with 2.00" i.d. pipe and gated with a 2.00" quarter turn ball valve.

Outlets to be equipped with a 1.50" National Standard hose thread 90 degree swivel located above the hose bed so that hose may be removed from either side of apparatus.

The crosslay controls will be at the pump operator's panel.

A removable tray will be provided for each crosslay hosebed. The crosslay trays will be constructed of black poly to provide a lightweight sturdy tray. Two (2) hand holes will be in the floor and additional hand holes will be provided in the sides for easy removal and installation from the compartment. The floor of the trays will be perforated to allow for drainage and hose drying. The bottom of the crosslay compartments will be lined with stainless steel to allow the tray to slide with ease. Polished stainless steel scuffplates will be provided on both sides, at the sides and bottom of each opening to protect the paint.

CROSSLAY/DEADLAY HOSE RESTRAINT

Elastic netting will be provided across the top and ends of two (2) crosslay/deadlay opening(s) to secure the hose during travel. The netting will be permanently attached at the top center of the crosslay/deadlay bed and removable on each end.



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FOAM PROPORTIONER

A Pierce Husky™ 12 foam proportioning system will be provided that is an on demand, automatic proportioning, single point, direct injection system suitable for all types of Class A and B foam concentrates, including the high viscosity (6000 cps), alcohol resistant Class B foams. Operation will be based on direct measurement of water flow, and remain consistent within the specified flows and pressures. The system will automatically balance and proportion foam solution at rates from .1 percent to 9.9 percent regardless of variations in water pressure and flow, up to the maximum rated capacity of the foam concentrate pump.

The design of the system will allow operation from draft, hydrant, or relay operation. This will provide a versatile system to meet the demands at a fire scene.

SYSTEM CAPACITY

The system will have the ability to deliver the following minimum foam solution flow rates that meet or exceed NFPA requirements at a pump rating of 250 psi.

200 gpm @ 6 percent

400 gpm @ 3 percent

1200 gpm @ 1 percent

The foam concentrate setting may be adjusted in .1 percent increments from .1 percent to 9.9 percent. Typical settings are .3 percent, .5 percent and 1.0 percent (The maximum capacity will be limited to the plumbing and water pump capacity).

CONTROL SYSTEM

The system will be equipped with a digital electronic control display located on the pump operators panel. Push button controls will be integrated into the panel to turn the system on/off, control the foam percentage, direct which foam to use on a multi-tank system, and to set the operation modes (automatic, manual, draft, calibration, or flush).

The percent of injection will have presets for Class A or Class B foam. These presets can be changed at the fire department as desired. The percent of injection will be able to be easily changed at the scene to adjust to changing demands.

In order to minimize the use of abbreviations and interpretations, system information will be displayed on the panel by way of .50 tall LEDs that total 14 characters (two (2) lines of seven (7) each). System on and foam pump on indicator lights will also be included. Information displayed will include mode of operation (automatic, manual, draft, calibration, or flush), foam supply selected (Class A or Class B), water total, foam total, foam percentage, remaining gallons, and time remaining.

The control display will direct a microprocessor, which receives input from the systems water flow meter while also monitoring the position of the foam concentrate pump. The microprocessor will compare the values of the water flow versus the position/rate of the foam pump, to ensure the



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proportion rate is accurate. One (1) check valve will be installed in the plumbing to prevent foam from contaminating the water pump.

LOW LEVEL FOAM TANK

The control head will display a warning message when the foam tank in use is below a quarter tank.

HYDRAULIC DRIVE SYSTEM

The foam concentrate pump will be powered by a hydraulic drive system, which is automatically activated, whenever the vehicle water pump is engaged. A large parasitic electric load used to power the foam pump can cause an overload of the chassis electrical system.

Hydraulic oil cooler will be provided to automatically prevent overheating of the hydraulic oil, which is detrimental to system components. The oil/water cooler will be designed to allow continuous system operation without allowing hydraulic oil temperature to exceed the oil specifications.

The hydraulic oil reservoir will be of four (4) gallons minimum capacity and will also be of sufficient size to minimize foaming and be located to facilitate checking oil level or adding oil without spillage or the need to remove access panels.

FOAM CONCENTRATE PUMP

The foam concentrate pump will be of positive displacement, self-priming; linear actuated design, driven by the hydraulic motor. The pump will be constructed of brass body; chrome plated stainless steel shaft, with a stainless steel piston. In order to increase longevity of the pump, no aluminum will be present in its construction.

A relief system will be provided which is designed to protect the drive system components and prevent over pressuring the foam concentrate pump

The foam concentrate pump will have minimum capacity for 12 gpm with all types of foam concentrates with a viscosity at or below 6000 cps including protein, fluoroprotein, AFFF, FFFP, or AR-AFFF. The system will deliver only the amount of foam concentrate flow required, without recirculating foam back to the storage tank. Recirculating foam concentrate back to the storage tank can cause agitation and premature foaming of the concentrate, which can result in system failure. The foam concentrate pump will be self-priming and have the ability to draw foam concentrate from external supplies such as drums or pails.

EXTERNAL FOAM CONCENTRATE CONNECTION

An external foam pick-up will be provided to enable use of a foam agent that is not stored on the vehicle. The external foam pick-up will be designed to allow continued operation after the on-board foam tank is empty. The external foam pick-up will be designed to allow use with training foam or colored water for training purposes.

PANEL MOUNTED STRAINER / EXTERNAL PICK-UP CONNECTION

A bronze body strainer / connector unit will be provided. The unit will be mounted to the pump panel. The external foam pick-up will be one (1) 1.00" male connection with chrome-plated cap integrated to a



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2.00" strainer cleanout cap. A check valve will be installed in the pick-up portion of the cleanout cap. A basket style stainless steel screen will be installed in the body of the strainer / connector unit. Removal of the 2.00" cleanout cap will be all that is required to gain access to and remove the stainless steel basket screen. The strainer / connector unit will be ahead of the foam concentrate pump inlet port to insure that all agents reaching the foam pump has been strained.

PICK-UP HOSE

A 1.00" flexible hose with an end for insertion into foam containers will be provided. The hose will be supplied with a 1.00" female swivel NST thread swivel connector. The hose will be shipped loose.

DISCHARGES

The foam system will be plumbed to the left side of front bumper, front crosslay and rear crosslay.

SYSTEM ELECTRICAL LOAD

The foam proportioning will not impose an electrical load on the vehicle electrical system any greater than five (5) amps at 12VDC.

FOAM SUPPLY VALVE

An electric valve will be used for the foam supply valve. The foam supply valve will be controlled at the foam system control head for ease of operation. The supply valve will be electric, remote controlled, to eliminate air pockets in the foam tank supply hose.

MAINTENANCE MESSAGE

A message will be displayed on the control head to advise when system maintenance needs to be performed. The message will display interval for cleaning the foam strainer, cleaning for the water strainers, and changing the hydraulic oil.

FLUSH SYSTEM

The system will be designed such that a flush mode will be provided to allow the system to flush all foam concentrate with clear water. The flush circuit control logic will ensure the foam tank supply valve is closed prior to opening the flush valve. The flush valve will be operated at the foam system control head for ease of operation. The valve will be electrically controlled and located as close to the foam tank supply valve as possible. A manual flush drain valve will be labeled and located under the left side running board.

REFILL, SINGLE FOAM TANK

The foam system's proportioning pump will be used to fill the Class B foam tank. This will allow use of the auxiliary foam pick-up to pump the foam from pails or a drum on the ground into the foam tank. A foam shut-off switch will be installed in the fill dome of the tank to shut the system down when the tank is full. The fill operation will be controlled by a mode in the foam system controller stating TANK FILL. While the proportioner pump is filling the tank, the controller will display FILL TANK. When the tank is full, as determined by the float switch in the tank dome, the pump will stop and the controller will display TANK FULL.



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FOAM TANK

The foam tank will be an integral portion of the polypropylene water tank. The cell will have a capacity of 20 gallons of foam with the intended use of Class B foam. The foam cell will reduce the capacity of the water tank. The foam cell will have a screen in the fill dome and a breather in the lid.

FOAM TANK DRAIN

A system of 1.00" foam tank drains will be provided, integrated into the foam systems strainer and tank to foam pump valve management system. The tank to pump hoses running from the tank(s) to the panel mounted strainer will 1.00" diameter. The foam system controller will have a mode that allows for a given foam valve to be opened at will. Flow of foam from the tank valve to the strainer will be usable as a tank drain mode.

An adaptor will be supplied, that allows the 1.00" foam intake screen to assembly to be used as a drain outlet. The standard supplied 1.00" foam pick up hose will be attached to the screen assembly by way of the adapter. The drain mode will allow the operator to open and close the tank valve as required from the control head, to drain foam and re-fill foam containers through the connected hose, without foam spillage beneath the vehicle.

The following drawing(s) will be provided for approval by the customer. The drawing(s) will be made to match 33309 similar Pierce job number.

PUMP OPERATOR'S PANEL DRAWING

A detailed drawing to scale of the pump operator's panel will be provided for the customer to review. The drawing will include all of the gauges, controls, switching, etc., located on the pump operator's panel. The customer will be allowed to make changes and/or mark-ups to this approval drawing. The fire apparatus manufacturer will make revisions (If needed) to the drawing per the customer changes and/or mark-ups as long as the changes are physically possible within a specific product line.

The finalized and signed customer approved pump operator's panel drawing will become part of the contract documents.

Due to the way drain(s), bleeder(s), operational/maintenance tag(s) and NFPA required warning tag(s) are placed on pump panel(s), these items will NOT be shown on any pump panel approval drawing(s). These item(s) will be placed on pump panel(s) at the fire apparatus manufacturer discretion.

REMAINING PUMP PANEL(S)

Detailed drawing(s) to scale of the remaining pump panel(s) will be provided for the customer to review. The drawing(s) will include all of the gauges, controls, switching, etc., located on the pump panel(s). The customer will be allowed to make changes and/or mark-ups to these approval drawing(s). The fire apparatus manufacturer will make revisions (If needed) to the drawing(s) per the customer changes and/or mark-ups as long as the changes are physically possible within a specific product line.

The finalized and signed customer approved pump panel drawing(s) will become part of the contract documents.



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Due to the way drain(s), bleeder(s), operational/maintenance tag(s) and NFPA required warning tag(s) are placed on pump panel(s), these items will NOT be shown on any pump panel approval drawing(s). These item(s) will be placed on pump panel(s) at the fire apparatus manufacturer discretion.

COLOR CODED TAGS

A detailed drawing/chart of the colors used on all of the inlet(s) and outlet(s) will be provided for the customer to review. The customer will be allowed to make changes and/or mark-ups to this approval drawing/chart. The fire apparatus manufacturer will make revisions (If needed) to the drawing per the customer changes and/or mark-ups as long as the changes are physically possible within a specific product line.

The finalized and signed customer approved drawing/chart of the colors will become part of the contract documents.

SPECIAL TEXT/VERBIAGE TAGS

A detailed drawing/chart of the text/verbiage used on all of the inlet(s) and outlet(s) will be provided for the customer to review. The customer will be allowed to make changes and/or mark-ups to this approval drawing/chart. The fire apparatus manufacturer will make revisions (If needed) to the drawing per the customer changes and/or mark-ups as long as the changes are physically possible within a specific product line.

The finalized and signed customer approved drawing/chart of the text/verbiage will become part of the contract documents.

PUMP PANEL CONFIGURATION

The pump panel configuration will be arranged and installed in an organized manner that will provide user-friendly operation.

PUMP OPERATOR'S PLATFORM

A pull out, flip down platform will be provided at the pump operator's control panel.

The front edge and the top surface of the platform will be made of DA finished aluminum with a Morton Cass insert.

The platform will be approximately 13.75" deep when in the stowed position and approximately 22.00" deep when extended. The platform stepping surface will be 28.00" wide. The platform will lock in the retracted and the extended position.

The platform will be wired to the "step not stowed" indicator in the cab.

PUMP OPERATOR'S PLATFORM PERIMETER LIGHT

There will be an On Scene Solutions, Model Night Stick Access, 20.00" white 12 volt DC LED strip light provided to illuminate the ground area.



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PUMP AND GAUGE PANEL

The pump and gauge panels will be constructed of stainless steel with a polished finish. A polished aluminum trim molding will be provided on both sides of the pump panel.

PUMP ACCESS

Right Side Panel

The right side upper pump panel will be removable.

Panel Fastener

The removable panels will be secured with chrome flush lift and turn latch.

The left side pump panels will be attached with screws.

The right side lower pump panel (drain bank) will be attached with screws.

PUMP COMPARTMENT LIGHT

There will be one (1) Whelen®, Model 3SC0CDCR, 3.00" white 12 volt DC LED light(s) with Whelen, Model 3FLANGEC, flange(s) installed in the pump compartment.

Engine monitoring graduated LED indicators will be incorporated with the pressure controller.

Also provided at the pump panel will be the following:

- Master Pump Drain Control

THROTTLE READY GREEN INDICATOR LIGHT

There will be a green indicator light integrated with the pressure governor and/or engine throttle installed on the pump operators panel that is activated when the pump is in throttle ready mode.

OK TO PUMP INDICATOR LIGHT

There will be a green indicator light installed on the pump operators panel that is activated when the pump is in Ok To Pump mode.

VACUUM AND PRESSURE GAUGES

The pump vacuum and pressure gauges will be liquid filled and manufactured by Class 1 Incorporated.

The gauges will be a minimum of 4.00" in diameter and will have white faces with black lettering, with a pressure range of 30.00"-0-600#.

Gauge construction will include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.

The pump pressure and vacuum gauges will be installed adjacent to each other at the pump operator's control panel.



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Test port connections will be provided at the pump operator's panel. One (1) will be connected to the intake side of the pump, and the other to the discharge manifold of the pump. They will have 0.25 in. standard pipe thread connections and non-corrosive polished stainless steel or brass plugs. They will be marked with a label.

This gauge will include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.

PRESSURE GAUGES

The individual "line" pressure gauges for the discharges will be interlube filled and manufactured by Class 1©.

The gauges will be a minimum of 3.00" in diameter and will have white faces with black markings.

Gauge construction will include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut.

Gauges will have a pressure rating of 30.00" 0-600 psi.

The individual pressure gauge will be installed as close to the outlet control as practical.

This gauge will include a 10 year warranty against leakage, pointer defect, and defective bourdon tube.

WATER LEVEL GAUGE

There will be an electronic water level gauge provided on the operator's panel that registers water level by means of five (5) colored LED lights. The lights will be durable, ultra-bright five (5) LED design viewable through 180 degrees. The water level indicators will be as follows:

- 100 percent = Green
- 75 percent = Yellow
- 50 percent = Yellow
- 25 percent = Yellow
- Refill = Red

The light will flash when the level drops below the given level indicator to provide an eighth of a tank indication. To further alert the pump operator, the lights will flash sequentially when the water tank is empty.

The level measurement will be based on the sensing of head pressure of the fluid in the tank.

The display will be constructed of a solid plastic material with a chrome plated die cast bezel to reduce vibrations that can cause broken wires and loose electronic components. The encapsulated design will provide complete protection from water and environmental elements. An industrial pressure transducer will be mounted to the outside of the tank. The field calibratable display measures head pressure to accurately show the tank level.

The main water level gauge will be powered with battery switch.



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There will be a Hale part number 106877, 4-light driver module included with this installation to power additional water level gauges.

The remote level lights will be energized when when either the pump is in gear, or the parking brake is applied.

WATER LEVEL GAUGE

There will be two (2) additional water level indicator(s), Whelen®, Model PSTANK2, LED module with chrome trim, installed one (1) each side rearward of crew cab doors, locate appropriately off of the rear wall.

This light module(s) will include four (4) colored levels, and function similar to the water level indicator located at the operators panel:

- First green module indicates a full water level
- Second blue module indicates a water level above 3/4 full
- Third amber module indicates a water level above 1/2 full
- Last red module indicates a water level above 1/4 full and empty
 - Above 1/4 this light will be steady burning
 - At empty this light will be flashing

The flash rate will be determined by the main water level tank sensor.

This module will be activated when the battery switch is on.

FOAM LEVEL GAUGE

An electronic foam level gauge will be provided on the operator's panel that registers foam level by means of five (5) colored LED lights. The lights will be durable, ultra-bright five (5) LED design viewable through 180 degrees. The foam level indicators will be as follows:

- 100 percent = Green
- 75 percent = Yellow
- 50 percent = Yellow
- 25 percent = Yellow
- Refill = Red

The light will flash when the level drops below the given level indicator to provide an eighth of a tank indication. To further alert the pump operator, the lights will flash sequentially when the foam tank is empty.

The level measurement will be based on the sensing of head pressure of the fluid in the tank.

The display will be constructed of a solid plastic material with a chrome plated die cast bezel to reduce vibrations that can cause broken wires and loose electronic components. The encapsulated design will provide complete protection from foam and environmental elements. An industrial pressure transducer



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will be mounted to the outside of the tank. The display will be able to be calibrated in the field and will measure head pressure to accurately show the tank level.

PUMP PANEL ILLUMINATION

There will be two (2) stainless steel light shields installed over the pump operators panels per the following:

- One (1) shield over the left side pump panel
- One (1) shield over the right side pump panel

The shields will include three (3) 12 volt DC lights with white LEDs to illuminate the controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus. The outside lights will be activated by the pump panel light switch. The left side center light will be activated when the pump is in "Ok to Pump" mode.

The switch panel will be lit when the parking brake is set. This is to afford the operator illumination when first approaching the control panel.

AIR HORN SYSTEM

Two (2) Grover air horns will be recessed in the front bumper.

The air horns will be chrome.

The air horn system will be piped to the air brake system wet tank utilizing 0.38" tubing. A pressure protection valve will be installed to prevent the loss of air in the brake system.

Air Horn Location

The air horns will be located on each side of the bumper, just outside of the frame rails.

Air Horn Control

The air horn(s) will be activated by the following:

- Left side foot switch
- Right side foot switch

AUXILIARY MECHANICAL SIREN

There will be a Federal Signal Model Q2B mechanical siren furnished and installed in the front of the apparatus.

The Q2B siren will be chrome finish.

The siren will have a 2-gauge cable connected to a power solenoid that is connected by a 2-gauge cable ran battery direct to the primary chassis batteries and will be labeled Q2B+ at the battery. The power solenoid will only be enabled when the emergency master switch is on.



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The siren will have a 2-gauge ground wire connected to the chassis battery stud. The cable will be labeled Q2B- at the battery.

The mechanical siren will be mounted recessed in the front grille. The siren mounting will include a reinforcement plate.

MECHANICAL SIREN CONTROL

The mechanical siren will be activated by the following:

- Steering wheel horn ring with horn/siren selector switch.
- Right side foot switch

A momentary chrome push button switch will be included in the right side dash panel to activate the siren brake.

FRONT ZONE UPPER WARNING LIGHTS

There will be one (1) 92.00" Whelen® Freedom™ IV lightbar mounted on the cab roof.

The lightbar will include the following:

- One (1) red flashing LED module in the left side end position.
- One (1) red flashing LED module in the left side front corner position.
- Open in the left side first front position.
- One (1) red flashing LED module in the left side second front position.
- One (1) red flashing LED module in the left side third front position.
- Open in the left side fourth front position.
- One (1) red flashing LED module in the left side fifth front position.
- One (1) red flashing LED module in the left side sixth front position.
- Open in the left side seventh front position.
- One (1) 795 LED traffic light controller sent to national standard high priority in the center front positions.
- Open in the right side seventh front position.
- One (1) blue flashing LED module in the right side sixth front position.
- One (1) blue flashing LED module in the right side fifth front position.
- Open in the right side fourth front position.
- One (1) blue flashing LED module in the right side third front position.
- One (1) blue flashing LED module in the right side second front position.
- Open in the right side first front position.
- One (1) red flashing LED module in the right side front corner position.
- One (1) red flashing LED module in the right side end position.

There will be clear lenses included on the lightbar.



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The following switches may be installed in the cab on the switch panel to control the lightbar:

- a switch to control the flashing LED modules.
- the traffic light controller by a cab switch with emergency master control.
- no momentary switch to activate the traffic light controller.

The traffic light controller will be disabled when the parking brake is applied.

The four (4) red and four (4) blue flashing LED modules in the front positions may be load managed when the parking brake is applied.

ADDITIONAL WARNING LIGHTS

There will be two (2) Whelen®, Model I2SM#, 1.68" high x 6.00" wide x 1.12" deep flashing LED warning light(s) with chrome housing and clear lenses located on the sides of the basket per the following:

- One (1) light to be installed on the left side of the basket in the lower center position
- One (1) light to be installed on the right side of the basket in the lower center position
- The light(s) to include red and blue LEDs

The light(s) will be controlled per the following:

- with the side warning switch.
- Amber, blue, green or red LEDs may be load managed when the parking brake is applied
- White LEDs will be deactivated when the parking brake is applied.

ADDITIONAL WARNING LIGHTS

There will be two (2) Whelen®, Model I2SM#, 1.68" high x 6.00" wide x 1.12" deep flashing LED warning light(s) with chrome housing and clear lenses located on the front of the basket per the following:

- One (1) light to be installed on the front of the basket in the lower left side position and One (1) light to be installed on the front of the basket in the lower right side position
- The light(s) to include red and blue LEDs

The light(s) will be controlled per the following:

- with the rear upper warning switch.
- Amber, blue, green or red LEDs may be load managed when the parking brake is applied.

COVER, TRAFFIC LIGHT CONTROLLER

There will be an aluminum treadplate cover provided over the Opticom traffic light controller for protection.

TRAFFIC LIGHT CONTROLLER

There will be a GTT, Model 794* LED Opticom traffic light controller with national standard high priority remote mounted on the front edge of the cab cab roof.



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The Opticom traffic light controller will be activated by a cab switch with emergency master control.

The Opticom traffic light controller will have no momentary activation switch.

The Opticom traffic light controller will be disabled when the parking brake is applied.

CAB FACE WARNING LIGHTS

There will be four (4) Whelen®, Model M6**, 4.31" high x 6.75" wide x 1.37" deep flashing LED warning lights installed on the cab face, above the headlights in a housing that matches the headlights per the following:

- The left side outside warning light to include red LEDs.
- The left side inside warning light to include white LEDs.
- The right side inside warning light to include white LEDs.
- The right side outside warning light to include red LEDs.
- The warning light lens colors to be the same as the LEDs.
- The housing to be polished and the trim shall be chrome.

The lights will be controlled per the following:

- A switch in the cab, on the switch panel will control the lights.
- White LEDs will be deactivated when the parking brake is applied.
- Amber LEDs will be deactivated when the parking brake is released.
- Amber, blue, green or red LEDs in the inside positions may be load managed when the parking brake is applied.

HEADLIGHT FLASHER

The high beam headlights will flash alternately between the left and right side.

There will be a switch installed in the cab on the switch panel to control the high beam flash. This switch will be live when the battery switch and the emergency master switches are on.

The flashing will automatically cancel when the headlight (high or low beam) switch is activated or when the parking brake is set.

SIDE ZONE LOWER LIGHTING

There will be four (4) Whelen®, Model M6*C, flashing LED warning lights with chrome trim installed per the following:

- Two (2) lights, one (1) each side on the bumper extension. The side front lights to be red.
- Two (2) lights, one (1) each side above rear wheels. The side rear lights to be red.
- The lights will include a clear lenses.

There will be a switch in the cab on the switch panel to control the lights.



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SIDE WARNING LIGHTS

There will be two (2) Whelen®, Model M6**, 4.31" high x 6.75" wide x 1.37" deep flashing LED warning light(s) with chrome trim provided on the cab corner(s) per the following:

The light(s) to include red LEDs and the lens color(s) to be the same as the LEDs.

The light(s) will be mounted on a 45 degree angled polished stainless steel bracket(s).

The light(s) may be controlled with the side warning switch.

- White LEDs will be deactivated when the parking brake is applied
- Amber LEDs will be activated when the parking brake is applied
- Amber, blue or red LEDs may be load managed when the parking brake is applied

REAR ZONE LOWER LIGHTING

There will be two (2) Whelen®, Model M6*C, LED flashing warning lights located at the rear of the apparatus.

- The driver's side rear light to be red
- The passenger's side rear light to be red

Both lights will include a lens that is clear.

There will be a switch located in the cab on the switch panel to control the lights.

REAR WARNING LIGHTS

There will be two (2) Whelen®, Model M6**, 4.31" high x 6.75" wide x 1.37" deep flashing LED warning light(s) with chrome trim provided at the rear of the apparatus, Above taillights.

The light(s) to include blue LEDs on the left side and red LEDs on the right side. The warning light lens colors to be the same as the LEDs.

These light(s) will be controlled with the rear upper warning switch.

The light(s) may be load managed when the parking brake is applied.

REAR/SIDE ZONE UPPER WARNING LIGHTS

There will be two (2) Whelen®, Model L31H*FN, LED warning beacons provided at the rear of the truck, located one (1) each side. There will be a switch located in the cab on the switch panel to control the beacons.

The color of the lights will be red LEDs with both domes clear.

REAR BODY MOUNTING BRACKET

There will be a 5.00" deep aluminum treadplate bracket provided at the rear of the body, spanning the width of the rear compartment door. The bracket(s) will be provided to mount lights, cameras, or other accessories. The brackets will include a removable panel to protect the wire connections.



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TRAFFIC DIRECTING LIGHT

There will be one (1) Whelen® Model TAM65, 36.00" long x 2.87" high x 2.25" deep, amber LED with clear lenses, traffic directing light installed at the rear of the apparatus.

The Whelen Model TACTL5 control head will be included with this installation.

The control head will be energized when the battery switch is on.

The auxiliary flash not activated.

This traffic directing light will be mounted on top of the body below the turntable with a treadplate box at the rear of the apparatus.

The traffic directing light control head will be located in the driver side overhead switch panel in the right panel position.

AIRPORT LIGHT

There will be two (2) Whelen, Model L41AP, beacon(s) with amber LEDs and amber lens. The light(s) will be installed forward raised roof each side.

The light(s) will be used for FAA amber requirement for airport operation, and may not be operated off airport grounds.

The lights will be activated when the ignition is activated, reset with the emergency master and a separate switch labeled "AIRPORT LIGHT".

POWER OUTLET STRIP

There will be one (1) receptacle strip(s) with six (6) 15 amp 120 volt AC straight blade receptacles provided 120 volt receptacle recessed in side wall to the rear of driver seat, power strip routed through seat riser to rear of engine tunnel coiled up loose just above 4way treadplate.

The strip(s) selected will be powered from the shoreline inlet through a receptacle located adjacent to the strip(s).

There will be a label installed near the strip(s) that state the following:

- Line Voltage
- Current Rating (amps)
- Phase
- Frequency

POWER OUTLET STRIP

There will be one (1) receptacle strip(s) with six (6) 15 amp 120 volt AC straight blade receptacles provided LS2 (see photo) mounted high across the top rear corner and rear wall.



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The strip(s) selected will be powered from the shoreline inlet through a receptacle located adjacent to the strip(s).

There will be a label installed near the strip(s) that state the following:

- Line Voltage
- Current Rating (amps)
- Phase
- Frequency

120 VOLT RECEPTACLE

There will be five (5), 15/20 amp 120 volt AC three (3) wire straight blade duplex receptacle(s) with exterior flip up cover(s), installed one each side in front of cab doors, one each side at the forward portion of each body fender, and one at the rear of the body on passenger side. The NEMA configuration for the receptacle(s) will be 5-20R.

The receptacle(s) will be powered from the shoreline inlet.

There will be a label installed near the receptacle(s) that state the following:

- Line Voltage
- Current Rating (amps)
- Phase
- Frequency

AERIAL GENERAL INFORMATION

It is the intent of these specifications to describe a mid-mounted telescoping, elevating platform. The unit will consist of a five (5) section, steel ladder with a self-leveling basket attached to the ladder fly section.

Operation on Grades

The aerial unit will be capable of operating safely, on any slope up to 10 degrees at full capacities. (Operation beyond this limit will be at the operator's discretion).

Construction Standards

The ladder will be constructed to meet all of the requirements as described in the current edition of applicable NFPA standards.

These capabilities will be established in an unsupported configuration.

All structural load supporting elements of the aerial device that are made of a ductile material will have a design stress of not more than 50 percent of the minimum yield strength of the material based on the combination of the live load and the dead load. This 2:1 structural safety factor meets the current NFPA standard.



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All structural load supporting elements of the aerial device that are made of non-ductile material will have a design stress of not more than 20 percent of the minimum ultimate strength of the material, based on the combination of the rated capacity and the dead load. This 5:1 safety factor meets the current NFPA standard.

The aerial device will be capable of sustaining a static load one and one-half times its rated tip load capacity (live load) in every position in which the aerial device can be placed when the vehicle is on a firm level surface.

The aerial device will be capable of sustaining a static load one and one-third times its rated tip load capacity (live load) in every position the aerial device can be placed when the vehicle is on a slope of five degrees downward in the direction most likely to cause overturning.

With the aerial device out of the cradle in the in the fully extended position at zero degrees elevation, a test load will be applied in a horizontal direction normal to the centerline of the ladder. The turntable will not rotate and the ladder will not deflect beyond what the product specification allows.

All welding will be in compliance with the American Welding Society standards. All welding personnel will be certified, as qualified under AWS welding codes.

The aerial device will be capable of operating in either of the two (2) following conditions:

- Conditions of high wind up to 35 mph
- Conditions of icing, up to a coating of 0.25" over the entire aerial structure

All of the design criteria must be supported by the following test data:

- Strain gage testing of the complete aerial device

The following criteria for materials are to be used in the design of the aerial device:

- Materials are to be certified by the mill that manufactured the material
- Material testing that is performed after the mill test will be for verification only and not with the intent of changing the classification.

Ladder Construction

The ladder will be comprised of five (5) sections and will extend to a nominal height, of 100' above the ground, as measured by NFPA recommendations. The ladder (handrails, baserails, trusses, k-braces and rungs) will be constructed of welded, high strength steel certified by the manufacturer as being a minimum of 100,000 lb per square inch of yield strength. All critical points will be reinforced, for extra rigidity, and to provide a high strength-to-weight ratio. Ladder rungs will be round and welded to each section in two (2) places with "K" bracing for torsional rigidity. A minimum of 70.25" of overlap between each of the aerial sections will be provided.

The inside width dimensions of the ladder will be:



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| | |
|---------------------|--------|
| Base Section: | 56.12" |
| Lower Mid Section: | 46.12" |
| Center Mid Section: | 36.62" |
| Upper Mid Section: | 28.12" |
| Fly Section: | 22.12" |

The height of the handrails above the centerline of the rungs will be:

| | |
|---------------------|--------|
| Base Section: | 40.72" |
| Lower Mid Section: | 39.08" |
| Center Mid Section: | 32.32" |
| Upper Mid Section: | 29.02" |
| Fly Section: | 26.37" |

Vertical Height

The height of the unit will extend to no less than 100', as measured by a plumb line from the top surface of the basket handrail assembly to the ground, with the basket raised to a 77 degree angle.

Horizontal Reach

The rated horizontal reach will be 93'. The measurement of horizontal reach will be consistent with NFPA standards.

Mounting of Elevating Platform

The aerial device will be mid mounted, to a torque box, on the truck chassis.

Torque Box

A "torsion box" subframe will be installed between two sets of stabilizers. The torque box will be constructed of 100,000 lb per square inch yield steel with an integral ladder storage box. The torque box assembly will be capable of withstanding all torsional and horizontal loads when the unit is on the stabilizers. The torque box will be bolted to the chassis frame rails using forty-eight 0.750" SAE grade 8 bolts with nuts.

Turntable

The turntable will be coated with a non-skid, chemical resistant material in the walking areas. The stepping surfaces will meet the skid-resistance requirements in the current NFPA standard.

The turntable will serve as a step for access to the ladder.

The turntable handrails will be a minimum 42.00" high and will not increase the overall travel height of the vehicle. The handrails will be constructed from 1.62" diameter extruded 6061-T6 aluminum with a slip resistant knurled surface. The handrails will be anodized to resist corrosion.



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Elevation System

Two (2) double acting, lift cylinders will be utilized to provide smooth, precise elevation from 15 degrees below horizontal to 77 degrees above horizontal. The lift cylinder will be attached to each side of the base section. The lift cylinders will have a 7.50" internal diameter (bore), 3.50" diameter cylinder rod and a 53.89" stroke. The lift cylinder rod will be chrome plated, to provide smooth operation of the aerial and reduce seal wear. The lift cylinders will be equipped with integral holding valves located in the cylinder, to prevent the unit from descending should the charged lines be severed, at any point within the hydraulic system and to maintain the ladder in the bedded position during road travel. The integral holding valves will NOT be located in the transfer tubes.

The elevation system will be controlled by the microprocessor. The microprocessor will provide the following features:

- Collision avoidance of the elevation system to prevent accidental body damage
- Automatic deceleration when the aerial device is lowered into the cradle
- Automatic deceleration at the end of stroke, in maximum raise and lower positions
- Deceleration of the aerial device from 0 to -15 degrees

Extension/Retraction System

A hydraulically powered, extension and retraction system will be provided through dual hydraulic cylinders and wire ropes. The extension cylinder will have a 6.50" internal diameter (bore), 2.75" diameter rod and a 53.12" stroke. Each set will be capable of operating the ladder in the event of a failure, of the other. For safety, systems that use only a single extension/retraction system will not be acceptable. The extension cylinder rod will be chrome plated to provide smooth operation of the aerial device and reduce seal wear. The extension/retraction cylinders will be equipped, with integral holding valves, to prevent the unit from retracting should the charged line be severed, at any point within the hydraulic system. The integral holding valves will NOT be located in the transfer tubes.

Wire ropes and attaching systems used to extend and retract the fly sections will have a 5:1 safety factor based on the ultimate strength under all operating conditions. The factor of safety for the wire rope will remain above 2:1 during any extension or retraction stall. The minimum ratio of the diameter of wire rope used to the diameter of the sheave used will be 1:12. Wire ropes will be constructed of seven (7) strands over an inner wire core for increased flexibility. The wire rope will be galvanized to reduce corrosion.

The extension/retraction system will be controlled by the microprocessor. The microprocessor will provide the following features:

- Automatic deceleration at the end of stroke, in maximum extend and retract positions
- Controls the rate of retraction while flowing water

All sheaves and sheave pins will utilize greasable bronze bushings. Sheave pins will be polished stainless steel.



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Rotation System

A 54.00" diameter, external tooth, monorace rotation bearing will be used for the rotation system and will provide 360 degree continuous rotation. The turntable will be bolted to the bearing using 30 SAE grade 8, 0.875" diameter bolts. To secure the bearing to the base support, 36 grade 8, 0.875" diameter bolts will be used. The turntable base and the torque box bearing plate will be machined to fit the bearing, thereby providing even distribution of forces. Two (2) hydraulically driven, planetary gear boxes, with drive speed reducer, will be used to provide infinite and minute rotation control, throughout the entire rotational travel. Each planetary gearbox has a torque rating of 130,000 lb per square inch. A spring applied, hydraulically released, disc type, swing brake will be furnished to provide positive braking of the turntable assembly. Provisions will be made for auxiliary operation of the rotation system should complete loss of normal hydraulic power occur.

The rotation system will be controlled by the microprocessor. The microprocessor will provide the following features:

- Automatic deceleration as you near a cab or body collision zone
- Envelope control of rotation system to prevent accidental body damage
- Prevent the aerial from being rotated into the short-jacked side of the unit

Manual Override Controls

Manual override controls will be provided for all aerial and stabilizer functions.

Ladder Slide Mechanism

Wear pads will be used between the telescoping ladder sections, to reduce friction for smoother operation. Slide pads will also be used to control side play between the ladder sections.

Basket Leveling System

A basket leveling system will be provided and so designed, that the basket with it's rated load, can be supported and maintained level, relative to the turntable, regardless of the elevation or flexion of the ladder.

The leveling of the basket features a hydraulic cylinder system mounted between the ladder fly section and the basket with each side capable of supporting the load, while maintaining the basket level.

The hydraulic circuitry includes pressure operated counter balance valves, on the load side of the cylinders, to prevent the basket from tipping should the hydraulic lines be severed.

The microprocessor will control the level of the basket during bedding operations, preventing the basket from hitting the body deck when the truck is setup on unlevel ground.

Rotation Interlock

The microprocessor will be used to prevent the rotation of the aerial device, to the side in which the stabilizers have not been fully deployed (short-jacked). The microprocessor will allow full and unrestricted use of the aerial, in the 180 degree area, on the side(s) where the stabilizers have been fully deployed. The system will also have a manual override to comply with NFPA.



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Load Capacities

The following load capacities will be established with the stabilizers at full horizontal extension and placed in the down position to level the truck and to relieve the weight from the tires and axles. Capacities will be based upon full extension and 360 degree rotation.

A load chart, visible at the operator's station, will be provided. The load chart will show the recommended safe load at any condition of the aerial device's elevation and extension.

35 MPH Wind Conditions/Dry

| Degree of Elevation | -15 to 9 | 10 to 19 | 20 to 29 | 30 to 39 | 40 to 49 | 50 to 59 | 60 to 77 |
|---------------------|----------|----------|----------|----------|----------|----------|----------|
| Basket | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Fly | - | - | - | - | 250 | 250 | 500 |
| Upper Mid | - | - | - | - | 250 | 250 | 500 |
| Center Mid | - | - | 250 | 250 | 250 | 500 | 500 |
| Lower Mid | - | - | 250 | 250 | 500 | 500 | 500 |
| Base | - | 250 | 500 | 500 | 500 | 500 | 750 |

Water Tower Operation

The following capacities will be based upon continuous 360 degree rotation and full extension.

35 MPH Wind Conditions/Water Charged

| Degree of Elevation | -15 to 9 | 10 to 19 | 20 to 29 | 30 to 39 | 40 to 49 | 50 to 59 | 60 to 77 |
|---------------------|----------|----------|----------|----------|----------|----------|----------|
| Basket | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| Fly | - | - | - | - | - | - | 250 |
| Upper Mid | - | - | - | - | - | 250 | 250 |
| Center Mid | - | - | - | - | 250 | 250 | 500 |
| Lower Mid | - | - | - | 250 | 250 | 500 | 500 |
| Base | - | - | 250 | 250 | 250 | 500 | 500 |

Elevation -15 to 77 Degrees

The aerial device will be able to maintain the above load capacities while flowing up to 1500 GPM and a nozzle position of 0 to 90 degrees to either side of the ladder centerline, and as far above and below horizontal to the platform as nozzle design allows.

The aerial device will be able to maintain the above load capacities while flowing up to 2000 GPM and a nozzle position of 0 to 45 degrees to either side of the ladder centerline, and 30 degrees above horizontal and as far below horizontal to the platform as nozzle design allows.

Reduced loads in the basket can be redistributed in 250 lb Increments to the fly, mid, or base as needed.



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Ladder Cradle Interlock System

A ladder cradle interlock system will be provided through the microprocessor to prevent the lifting of the aerial device from the nested position until the operator places all the stabilizers in a load supporting configuration. A switch will be installed at the boom support to prevent operation of the stabilizers once the aerial has been elevated from the nested position.

AERIAL BOOM PANEL

There will be one boom panel provided on each side of the aerial ladder base section. The boom panel will be painted gray metallic 509.

The boom panels will be designed so no mounting bolts are in the face of the panel. This will keep the lettering surface free of holes.

AERIAL DEVICE RUNG COVERS

Each rung will be covered with a secure, heavy-duty, fiberglass pultrusion that incorporates an aggressive, no-slip coating.

The rung covers will be glued to each rung and will be easily replaceable should the rung cover become damaged.

The center portion of each rung cover will be black and the outside 2.00" edge at each side will be safety yellow.

Under no circumstances will the rung covers be fastened to the rungs using screws or rivets.

The rung covers will have a 10-year, limited warranty.

BASKET BRACKETS STORAGE BOX

There will be a storage box provided at the base section of the aerial ladder on the right side. The box will be painted to match the aerial device and located at the tip of the base section. The box will have a hinged cover with pneumatic cylinders and a D-handle latch. The box will have no louvers. The cover will have the same finish as the box. The cover will be tied in to the open door indicator circuitry when in the open position.

The maximum capacity of the box will be 40 lb.

SAW STORAGE BOX

There will be a total of one (1) storage box(es) provided at the base section of the aerial ladder, one (1) on the left side of the aerial device while viewed from the turntable. The box(es) will be painted to match the aerial device and located at the tip of the base section. The box(es) will have a hinged cover with D-handle latch and gas struts to secure the saw. The cover will have the same finish as the box. The cover will be tied in to the open door indicator circuitry when in the open position. The box will have no louvers.

The maximum capacity of each box will be 25 lb.



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STABILITY TEST

An aerial stability test will be run on the apparatus using the maximum weight allowance for tip options.

LADDER STORAGE MOUNTING BRACKETS

There will be brackets that are painted to match the aerial device provided near the end of the fly section of the aerial for mounting a roof ladder.

The mounting brackets will accommodate a 16' Duo-Safety 875-A roof/wall ladder as determined by the type of aerial device and the available space.

PIKE POLE MOUNTING BRACKETS

Mounting will be provided near the end of the fly section of the aerial ladder for one (1) pike pole(s).

The bracket will be sized to hold a Fire Hooks Unlimited 10' New York roof hook.

STOKES STORAGE BRACKETS

There will be one (1) aluminum bracket(s) at the base section of the aerial ladder on the right side of the aerial device while viewed from the turntable. The brackets will be located above the aerial boom panel. The brackets will be painted to match the aerial device and include locking pins to secure the basket.

BASKET STRUCTURE

The complete basket structure will be constructed of welded high strength steel certified by the manufacturer to have a minimum of 100,000 lb per square inch yield strength on all structural members. The aerial basket will be fully tested and independent third party certified.

The interior flooring and exterior front flooring (decking) of the basket will be multi-piece Morton Cass material, preventing the accumulation of water on the standing surface. The surface area of the interior and exterior basket flooring will be approximately 21.1 square feet. The stepping surfaces will meet the skid-resistance requirements of current edition of applicable NFPA standards.

The exterior basket flooring used for transferring in and out of the basket will be at the same level as the interior basket floor and will be constructed of aluminum treadplate. The front and side flooring will be approximately 8.00" deep. The front corners of the exterior basket floor will be mitered at 45 degrees to allow the basket to be maneuvered closer to buildings when approaching at an angle.

Four (4) stainless steel pompier belt safety loops will be attached to the inside of the basket.

Two (2) lifting eyes will be provided on the bottom side of the basket support structure. Each lifting eye will be rated for 500lb.

Four (4) rubber bumpers are provided on the bottom side of the basket structure for damage protection when setting it down on a surface.



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The basket interior will be illuminated as required per the current edition of applicable NFPA standards. Electrical sub-components will be mounted under the basket in a enclosed area providing protection from heat exposure while allowing for easy servicing and maintaining an unobstructed basket interior.

BASKET SIDES

The sides of the basket will be of tubular steel construction and aluminum sheet skin, and along with the basket doors, will form a continuous 42.00" high wall around the basket.

PLATFORM ENTRANCES/EXITS

Two (2) swing-in, spring-loaded, self-closing doors will be of steel frame construction with an aluminum sheet skin and will be provided on the 45 degree angles at the front of the platform. A paddle style door latch will allow the basket doors to be opened from the outside by applying pressure to the paddle with the hand. The rear of the platform will be equipped with a vertical self-closing gate for transfer to and from the platform's ladder device.

ACCESSORY MOUNTING RECEPTACLES

Universal accessory mounting receptacles will be permanently affixed on the left side of the basket to receive options such as the rescue basket holders, rappelling arms, roof ladder brackets, winch, etc. Complete interchangeability will be required without modification to the basket.

UNDER BASKET SENSOR

A single ultrasonic sensor will be installed under the center, rear area of the basket. It will assist the operator by automatically slowing the basket as it approaches the ground, and it will stop it approximately 8.00" above the ground. There is only one (1) sensor, so the ground is only detected in the location directly below the sensor, not the full area under the basket. The operator must still use caution and be aware of their surroundings at all times. The system will be enabled during aerial power up. A momentary switch in the basket and at the turntable will disable or re-enable the system at any time.

HOSE BOX AT PLATFORM

There will be one (1) hose storage box(es) with a cover and rubber draw latch provided at the platform. A brushed stainless steel scuffplate will be provided under each latch. The box(es) will be located at the right side of the basket when viewed from the turntable and will match the finish of the aerial basket. The box(es) will be sized to fit 100' of 1.75" diameter hose.

Drain holes will be provided in the bottom corners of each box and a louver will be provided on each side near the top of the box, below the latches.

LIGHTS FOR TURNTABLE WALKWAY

There will be On Scene Model 73006-WHW 6.00" long white LED lights and P25 white LED lights with chrome housing provided at the aerial turntable. The lights will be located to illuminate the entire walking surface of the turntable including the area around the turntable console. These lights will be activated by the aerial master switch.



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TURNTABLE CONSOLE LIGHTING

There will be one (1), TecNiq Model E10, white LED light mounted in the turntable console cover to illuminate the controls located on both the upper and lower portion of the turntable control station. These lights will be activated by the aerial master switch.

BASKET HEAT SHIELDS

A heat reflective shield constructed of 0.063 aluminum will be provided on the front, sides, bottom, and access doors of the basket.

The front, side and access door heat shields will be painted to match the aerial basket.

The heat shields on the bottom of the basket will be easily removable for ease of servicing components located under the basket. These heat shields will be provided with a non-glare finish.

INFORMATION CENTER

There will be an information center provided. The information center will operate in temperatures from -40 to 158 degrees Fahrenheit. The information center will employ a Linux operating system and a 7.00" (diagonal measurement) LCD display. The LCD will have a 1000 nits rated color display. The LCD will be daylight visible. The LCD display will be encased in an ABS, grey plastic housing with a Pierce decal. There will be five (5), weather-resistant user interface buttons provided. The LCD display can be changed to an optional single foreign language.

Operation

The information center will be designed for easy operation in everyday use. There will be a page button to cycle from one screen to the next screen in a rotating fashion. A video button will allow an NTSC camera signal into the information center to be displayed on the LCD. If any button is pressed while viewing a video feed, the information center will return to the vehicle information screens. There will be a menu button to provide access to maintenance, setup, and diagnostic screens. All other button labels will be specific to the information being viewed.

General Screen Design

Where possible, background colors will be used to provide vehicle information *At A Glance*. If the information provided on a screen is within acceptable limits, a green background color will be used. If the information provided on a screen is not within acceptable limits, an amber background color will indicate a caution condition and a red background color will indicate a warning condition.

Every screen in the information center will include the aerial tip temperature, the time (12- or 24-hour mode) and a text Alert Center. The time will be synchronized between all Command Zone color displays located on the vehicle. The Alert Center will display text messages for audible alarms. The text messages will identify any items causing the audible alarm to sound. If more than one (1) audible alarm is activated, the text message for each alarm will cycle every second until the problems have been resolved. The background for the Alert Center will change to indicate the severity of the warning message. Amber will indicate a caution condition and red will indicate a warning condition. If a warning



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and a caution condition occur simultaneously, the red background color will be shown for all Alert Center messages.

A label will be provided for each button. The label will indicate the function for each active button for each screen. If the button is not utilized on specific screens, it will have a button label with no text.

Symbols will accurately depict the aerial device type the information pertains to such as rear mount ladder, rear mount platform, mid-mount ladder or mid-mount platform.

Page Screens

The Information center will include the following pages:

The Aerial Main and Load Chart page will indicate the following information:

Rungs Aligned and Rungs Not Aligned will be indicated with text and respective green or red colored ladder symbols.

Ladder Elevation will be indicated via a fire apparatus vehicle with ladder symbol with the degree of elevation indicated between the vehicle and ladder.

Water Flow (if applicable) will be indicated via a water nozzle symbol and text indicating flow / time.

Breathing Air Levels will be indicated via an air bottle symbol and text indicating the percent (%) of air remaining. A green bar graphs shown inside the bottle will indicate oxygen levels above 20 percent. A red bar graph will indicate oxygen levels at or below 20 percent. When oxygen levels are at or below 10 percent the red bar graph will flash.

The Aerial Load Chart will indicate the load limit on each section of the ladder based on actual ladder position and water flow (if applicable).

At A Glance color features will be utilized on this screen. Caution type conditions will be indicated via a yellow background. Warning type conditions will be indicated via a red background. Conditions operating within acceptable limits will be indicated via a green background.

The Aerial Reach and Hydraulic Systems page will indicate the following information:

Aerial Hydraulic Oil Temperature will be indicated with symbol and text. At a glance features will be utilized.

Aerial Hydraulic Oil Pressure will be indicated with a symbol and text. At a glance features will be utilized.

The following calculations will be indicated on a representative vehicle symbol:

Aerial Device Extension length.

Aerial Device Height indicating the height of the aerial device tip from the ground.



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Aerial Device Reach indicating the horizontal distance the aerial reaches from the turntable.

Aerial Device Angle indicating the angle from the vehicle which the device is at.

At A Glance color features will be utilized on this screen. Caution type conditions will be indicated via a yellow background. Warning type conditions will be indicated via a red background. Conditions operating within acceptable limits will be indicated via a green background.

The Level Vehicle page will indicate the following information:

The grade of the vehicle will be indicated via a fire apparatus vehicle symbol with the degree of grade shown in text format. The symbol will tilt dependent on the vehicle grade.

The slope of the vehicle will be indicated via a fire apparatus vehicle symbol with the degree of slope shown in text format. The symbol will tilt dependent on the vehicle slope.

Outriggers status will be indicated via a colored symbol for each outrigger present. Each outrigger status will be defined as one of the following:

Outrigger stowed indicated with a silver pan located close to the vehicle

Outrigger fully extended indicated with a fully deployed green outrigger

Outrigger short-jacked indicated by a yellow outrigger partially deployed

Outrigger not set indicated by a red outrigger that is not set on the ground

A text box located on the vehicle symbol will be utilized to identify the overall status of the outrigger leveling system. The following status will be indicated in the text box:

Deployed status will indicate all outriggers are properly set on the ground at full extension

Shortjacked status will indicate one or more outriggers are set on the ground but not fully extended.

Not Set status will indicate one or more outriggers is not properly set on the ground.

Stowed status will indicate all outriggers are stowed for vehicle travel.

A bedding assist alert will indicate that the aerial device is being aligned by the Command Zone system as the operator lowers the aerial device into the cradle with the joystick.

At A Glance color features will be utilized on this screen. Caution type conditions will be indicated via a yellow background. Warning type conditions will be indicated via a red background. Conditions operating within acceptable limits will be indicated via a green background.

Menu Screens

The following screens will be available through the Menu button:



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The View System Information screen will display aerial device hours, aerial PTO hours, ladder aligned for stowing, aerial rotation angle, total water flow (if applicable), and aerial waterway valve status (if applicable).

The Set Display Brightness screen will allow brightness increase and decrease and include a default setting button.

The Configure Video Mode screen will allow setting of video contrast, video color and video tint.

The Set Startup screen allows setting of the screen that will be active at vehicle power-up.

The Set Date and Time screen has a 12- or 24-hour format, and allows setting of the time and date.

The View Active Alarms screen shows a list of all active alarms including the date and time of each alarm occurrence and shows all alarms that are silenced.

The System Diagnostics screen allows the user to view system status for each module and its respective inputs and outputs. Viewable data will include the module type and ID number; the module version; and module diagnostics information including input or output number, the circuit number connected to that input or output, the circuit name (item connected to the circuit), status of the input or output, and other module diagnostic information.

Aerial calibrations screen indicates items that may be calibrated by the user and instructions to follow for proper calibration of the aerial device.

Button functions and button labels may change with each screen.

LOWER CONTROL STATION

A lower control station with pendant control will be located at the rear of the apparatus in an easily accessible area. The controls and indication labels will be illuminated for nighttime operation. The following items will be furnished at the lower control station and will be clearly identified and conveniently located for ease of operation and viewing:

- Level assist switch
- Override switch to override microprocessor
- Emergency power unit switch

AERIAL DEVICE CONTROL STATIONS

There will be two (2) aerial device control stations, one (1) will be referred to as the basket control station, and the other as the turntable control station. All elevation, extension, and rotation controls will operate from both of these locations. The controls will permit the operator to regulate the speed of the aerial functions, within the safe limits as determined by the manufacturer and NFPA standards. The controls will be clearly marked and illuminated for night time operation.

Each control will be equipped with an operator presence, preventing accidental activation.



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TURNTABLE CONTROL STATION

The turntable control station will be located on the right side of the turntable so the operator may easily observe the basket while operating the controls. A console cover will be provided at the turntable control station. The controls will be so designed to allow the turntable control station to immediately override the basket controls even if the ladder is being operated by the basket controls.

The following items will also be provided at the turntable control station and be clearly identified and illuminated for nighttime operation and conveniently located for ease of operation and viewing:

- Three (3) separate controls for raise/lower, extend/retract, and left/right rotation
- Intercom controls
- Tip tracking light switch
- Emergency power unit switch
- Operator's load chart
- Two (2) position switch for selecting aerial operational speed
- Aerial monitor switches

BASKET CONTROL STATION

The basket control station will be located at the front, center of the platform basket. The following items will also be provided at the basket control station and be clearly identified and illuminated for nighttime operation and conveniently located for ease of operation and viewing:

- Three (3) separate controls for raise/lower, extend/retract, and left/right rotation
- Intercom controls
- Tip tracking light switch
- Basket leveling switches
- Operator's load chart
- Aerial monitor switches

HIGH IDLE

The high idle will be controlled by the microprocessor. The microprocessor will automatically adjust the engine rpm, to compensate for the amount of load placed upon the system. The system will include a safety device that allows activation of the high idle, only when the parking brake is set and the transmission is placed in neutral.

INTERIOR BASKET ILLUMINATION

There will be weather resistant lights with white LEDs provided to illuminate the interior of the aerial basket control console and stepping surfaces to NFPA requirements.

The lights will be activated when the battery switch is on, and the aerial master switch is on.

STABILIZERS

The vehicle will come equipped with a stabilization system consisting of six (6) hydraulically operated stabilizers. The middle two (2) will be out and down style, the front and rear two (2) will be down only.



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This system will meet or exceed all requirements of the NFPA specifications related to stabilization and setup on sloped surfaces.

The stabilizer/leveling jacks will have a maximum spread of 18' measured from the centerline of the jack footpads when the beams are fully extended. The beams will be 6.81" wide x 13.00" high with 1.00" thick top and bottom plates and 1/2" thick sides of 100,000-PSI minimum yield strength steel. The cylinders will have pilot-operated check valves with thermal relief designed to ensure that the beams will not drift out of the stowed position during travel. Wear pads will guide the stabilizers.

The horizontal extension cylinders will be totally enclosed within the beams and will incorporate telescoping hydraulic tubing to supply the jack cylinder hydraulic power. Stabilizer hydraulic hoses will remain stationary during operation of the stabilizers to prevent hose wear and potential failure. The cylinders will be equipped with decelerators to reduce the speed of extension and retraction when the beams are near the fully retracted and extended positions. The stabilizer extension hydraulic cylinders will have the following dimensions: 2.25" bore, 1.38" rod, and 62.25" stroke.

The front vertical jack cylinders will be capable of 15.00" ground penetration. The middle and rear vertical jack cylinders will be capable of 18.00" ground penetration. The cylinders will be supplied with pilot operated check valves on each jack cylinder to hold the cylinder in the stowed or working position, should a charged line be severed at any point in the hydraulic system. For safety, the integral holding valves will be located in the cylinder base, NOT in the transfer tube. Vertical jack cylinder rods will be fully enclosed by a telescoping inner box to protect the cylinder rods from damage. The stabilizer jack hydraulic cylinders will have the following dimensions: 4.25" bore, 3.00" rod, and 34.88" stroke.

The middle and rear stabilizer jack will have a pan that will be a maximum of 14.00" wide so as to allow the extension of the stabilizer between parked cars or other obstacles. This pan will serve as a protective guard and a mounting surface for warning lights. The top, forward, and rear edges will be flanged back 90 degrees for added strength. The front stabilizers will be designed for easy cab tilt.

STABILIZER PADS

The stabilizer footpad will include an integrated stabilizer pad. The footpad will be attached to the jack cylinder rod by means of a machined ball at the end of the jack cylinder rod which mates to a socket machined into the footpad.

STABILIZER CONTROLS

A portable stabilizer control pendant will be provided. The control pendant will be weatherproof and oil resistant. Each function and indicator light will be labeled on a mylar lexan panel. The control pendant can be taken as far away as 15' from the vehicle with an attached coil cable.

The stabilizer control pendant will include the following:

- One (1) green power indicator light for stabilizer control that will be illuminated when the Stabilizer Power Enable switch has been activated. This will be interlocked such that the aerial



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master must be activated, the ladder is in the cradle, or the Global Override at the rear of the apparatus is activated.

- Two (2) electric toggle switches for stabilizers: each toggle switch will control the extend/retract (middle only) and raise/lower (front/middle/rear) of its respective stabilizer to allow vehicle set up in restricted areas and/or on uneven surfaces.
- Level assist switch: The stabilizer control system will incorporate a computerized leveling system to enhance the stabilizer set up. The computerized system will ensure full stabilizer extension, proper jack penetration, and will level the vehicle within eight tenths of a degree of level for safe operation of the aerial device.
- Stow assist switch: The stabilizer control system will incorporate a computerized system to move all six (6) stabilizer shoes to the full raised position while this switch is held.
- Tilt assist toggle switch: The stabilizer control system will incorporate a computerized system to tilt the chassis to five (5) degrees for enhanced side angle deployment of the aerial device.
- One (1) electric push button switch for the engaging the emergency power unit.
- One (1) red "stabilizer not stowed" indicator light: this light will illuminate when the stabilizers are not in the fully stowed position.
- Two (2) fully extended beams green indicator lights: these lights will be illuminated when each of the respective stabilizer beams are fully extended.
- Six (6) firm on ground green indicator lights: each light will be illuminated when its respective stabilizer shoe is in the load supporting condition.

Each toggle switch will activate the engine fast idle automatically.

Manual override will be supplied for each stabilizer control valve.

A stabilizer deployment audible warning alarm will be provided and activated by the stabilizer movement.

A "Stabilizers Not Stowed" indicator will be provided in the driver's compartment. It will illuminate automatically whenever the stabilizers are not fully stowed to prevent damage to the apparatus if moved. The stabilizer system will also be wired to the "Do Not Move Indicator Light", which will flash whenever the apparatus parking brake is not fully engaged and the stabilizers are not fully stowed.

CRADLE INTERLOCK SYSTEM

A cradle interlock system will be provided, to prevent the lifting of the aerial from the nested position, until the operator has positioned all the stabilizers in a load supporting configuration. A switch will be installed at the cradle, to prevent operation of the stabilizers once the aerial has been elevated from the nested position.

STABILIZER PAN AND TRIM MATERIAL

The aerial stabilizer pans will be polished stainless steel and the aerial stabilizer trim will be polished stainless steel.



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STABILIZER CONTROL BOX DOOR

A vertically hinged smooth aluminum door will be provided over the stabilizer control box. The door will be hinged along the inboard edge and provided with a Southco C2 chrome raised trigger lever latch.

HYDRAULIC SYSTEM

All hose assemblies will be assembled and crimped by the hose manufacturers certified technician.

All manufacturing employees responsible for the installation of hydraulic components will be properly trained. Training will include: proper handling, installation, torque requirements, cleanliness and quality control procedures for hydraulic components.

Hoses used in the aerial hydraulic system will be of a premium quality hose with a high abrasion resistant cover. All pressure hoses will have a working pressure of 4000 psi and a burst pressure rating of 16,000 psi.

All hydraulic fittings and tubing will be plated or constructed of 304 stainless steel to minimize corrosion.

The fitting will use an O-ring seal where possible to minimize hydraulic leaks.

An interlock will be provided that prevents activation of the hydraulic pump until the transmission is placed in neutral and the parking brake is set as outlined in the current NFPA standard.

The system will meet the performance requirement of the current NFPA standard, which requires adequate cooling less than 2.5 hours of operations.

All hydraulic components that are non-sealing whose failure could result in the movement of the aerial will comply with current NFPA standards and have burst strength of 4:1.

Dynamic sealing components whose failure could cause aerial movement will have a margin of 2:1 on maximum operating pressure per the current NFPA standard.

All hydraulic hoses, tubes, and connections will have a minimum burst strength of 3:1 per the current NFPA standard.

A chassis mounted positive displacement piston pump for consistent pressure and rapid responses will supply hydraulic power for all aerial operations. The positive displacement pump will provide 3,000psi. The hydraulic pump will be solely dedicated to aerial operations.

Each aerial will be evaluated as to the region and climate where it will be used to determine the optimum viscosity and proper oil grade. Oil viscosity will be based on an optimum range of 80 to 1000 SUS during normal aerial use. Before shipment of the unit, an oil sample will be taken and analyzed to confirm the oil is within the allowable ISO grade tolerance.



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The aerial hydraulic system will have a minimum oil cleanliness level of ISO 18/15/13 based on the ISO 4406:1999 cleanliness standard. Each customer will receive a certificate of actual cleanliness test results and an explanation of the rating system.

Oil samples can be taken from the hydraulic manifold GP1 port which is also used for verifying system pressure.

Ball valves will be provided in the hydraulic suction lines to permit component servicing without draining the oil reservoir.

The aerial will incorporate the use of trombone steel tubes inside the stabilizer beams to eliminate hydraulic hose wear and leaks.

Hydraulic power to the ladder will be transferred from the pedestal by a hydraulic swivel.

The system hydraulic pressure will be displayed on the turntable display.

The hydraulic system will be additionally protected from excessive pressure by a secondary pressure relief valve set at 3,500 psi. In the event the main hydraulic pump compensator malfunctions, the secondary relief will prevent system damage.

HYDRAULIC CYLINDERS

All cylinders used on the aerial device will be produced by a manufacturer that specializes in the manufacture of hydraulic cylinders.

Each cylinder will include integral safety holding cartridges. No manifold or transfer tube mounted cartridge will be acceptable.

Each cylinder will be designed to a minimum safety factor of 4:1 to failure.

All safety holding cartridges will be installed at the cylinder manufacturer, in a controlled clean environment to avoid possible contamination and or failure.

POWER TAKEOFF/HYDRAULIC PUMP

The apparatus will be equipped with a power takeoff driven by the chassis transmission and actuated by an electric shift, located inside the cab. The power takeoff which drives the hydraulic pump will meet all the requirements for the aerial unit operations.

An amber indicator light will be installed on the cab instrument panel to notify the operator that the power takeoff is engaged.

An interlock will be provided that allows operation of aerial power only after the chassis spring brake has been set and the chassis transmission has either been placed in the neutral position or drive position after the driveline has been disengaged from the rear axle.

The hydraulic system will be supplied by a variable displacement load and pressure compensating piston pump. The pump will meet the demands of all three simultaneous aerial functions. The pump will



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provide proper flow for single aerial function with the engine at idle speed. A switch will be provided on the control console to increase the engine speed for multiple function operation.

EMERGENCY PUMP

The hydraulic system will be designed with an auxiliary power unit meeting the guidelines of the current NFPA standard.

The aerial will be equipped with an emergency hydraulic pump, electrically driven from the truck batteries. The pump will be capable of running for 30 minutes for limited aerial functions to stow the unit in case of a main pump or truck system failure. A momentary switch will be located at the stabilizer and aerial control locations to activate the emergency pump.

AERIAL CONTROL VALVE

The aerial hydraulic control valve will be designed with special spool flows, limiting the oil flow for the designed function speed. The valve will be electrically controlled and be located below the swivel and integrated with the stabilizer control manifold. The handles will be oriented outward and will be spaced 1.80" apart. The valve spools will be designed to bleed off downstream pressure, in the neutral position and allow proper sealing of any cylinder holding cartridge.

OIL RESERVOIR

The oil reservoir will have a minimum capacity of 39 gallons. The oil fill location will be easily accessible and be labeled "Hydraulic Oil Only" and also indicate the grade of oil that is installed in the reservoir. A drain port will be provided.

Two suction ports will be provided, one for the main hydraulic pump and one for the emergency pump. The emergency suction port will be raised slightly off the bottom of the reservoir.

Magnetic filter will be installed in line with the return hose.

A float type sending unit in the reservoir will provide an indication of oil level on an electronic display. A temperature sending unit in the reservoir will provide indication of the oil temperature on an electronic display.

The hydraulic oil reservoir will be labeled per the current edition of NFPA standard.

RETURN FILTER

The low pressure oil return filter will be remote mounted in the return line and designed to prevent oil loss during filter change. A 50 psi bypass will be included to protect the element and hydraulic system during lower than normal operating temperatures. The system will incorporate the following filter to provide dependable service:

- return filter: beta 1000 at 6 micron



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HYDRAULIC SWIVEL

The aerial ladder will be equipped with a three (3) port, high pressure hydraulic swivel which will connect the hydraulic lines from the hydraulic pump and reservoir through the rotation point to the aerial control bank. The hydraulic swivel will allow for 360 degree continuous rotation of the aerial.

ELECTRIC SWIVEL

The ladder will be equipped with an electric swivel to allow 360 degrees rotation of the aerial while connecting all electrical circuits through the rotation point. A minimum of 36 collector rings will be provided that are capable of supplying 20 amp continuous service. All collector rings will be enclosed and protected with desiccant plugs against condensation and corrosion. No oil or silicone will be used.

WATER SWIVEL

Water will be transferred to the aerial waterway by means of a 5.00" internal diameter waterway, through the swivel, permitting 360 degree continuous rotation.

13-BIT ABSOLUTE ENCODER

The aerial ladder will be equipped with a 13-Bit Absolute Encoder which provides 8192 counts per shaft turn for position and direction reference.

The 13-Bit Absolute Encoder will provide a unique binary word to reference each position and direction for all 360 degrees of rotation.

If the power is interrupted for any reason, the 13-Bit Absolute Encoder will allow power to be returned to the system without having to re-zero the settings.

The 13-Bit Absolute Encoder will be an integral part of a micro-processor based control system.

ELECTRICAL SYSTEM

The aerial device will utilize a microprocessor-based control system. The system will consist of the following components:

- Control System Modules

Each of the control system modules will be configured as follows:

- Sealed to a NEMA 4X rating
- Operating range from -40 degrees Fahrenheit to 156 degrees Fahrenheit (-40 degrees Celsius to 70 degrees Celsius)
- Communicate using J1939 data link
- Two (2) diagnostic LED lights
 - One (1) green light that illuminates when module has power (B+) and ground
 - One (1) red light that flashes to indicate the module is capable of communicating via the data link
- Up to 16 diagnostic LEDs on each module
- Ground matrix identification system



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The following control system modules will be used:

- Control Module
 - Main controller for the system
 - USB connection allows for computer diagnostics
- Power Module
 - Built-in fault sensing
 - Eight (8) digital outputs
 - Pulse width modulating (PWM) capable
 - 10A continuous per output
 - Circuit protection based on actual current draw (not affected by heat)
- Current Control Module
 - Built-in fault sensing
 - Three (3) analog inputs
 - Eight (8) digital outputs
 - Pulse width modulating (PWM) capable
 - 3A continuous per output
 - Closed Loop System
 - Circuit protection based on actual current draw (not affected by heat)
- Input Module
 - 16 software selectable (digital or analog) inputs
- Output Module
 - 16 digital outputs
- Input/Output Module
 - Eight (8) software selectable (digital or analog) inputs
 - Eight (8) digital outputs
- Valve Module
 - 36 digital inputs
 - 36 digital outputs

TIP LIGHT

There will be one (1) HiViz Model FT-MB-2.18-*-* , 19,008 raw lumens 21.00" long x 3.00" high x 3.3" deep 12 volt DC lights with white LEDs, FT-MBKIT-PX end mounts and a combination of flood and spot optics installed on the front of the basket. The painted parts of the light housing and brackets to be white.

The lights will be controlled from a switch at the turntable and tip.

TRACKING LIGHTS

There will be two (2) Whelen® MPB*, 5,090 lumens 12 volt DC LED lights with bail bracket mounts installed near the tip of the base section of the aerial device. The lights are installed at the tip so the



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overall width of the apparatus is not affected. The lights will be mounted below the top edge of the aerial device so the overall height of the apparatus is not affected.

- One (1) located on the left side with spot optics
- One (1) located on the right side with spot optics
- The painted parts of this light assembly to be white.

Power to the lights will be controlled from turntable only.

BASKET ACCESS

Access to the basket will be provided by a pull-out, swing-down climbing ladder. The 2.25" deep climbing ladder surfaces will be constructed with Traction Tread®. The bottom step will be a flip-down, stirrup step. The access ladder will be recessed into the angled corners of the rear body on each side. Hand holds will be provided in each side of the ladder.

The step well finish will be aluminum treadplate.

All stepping surfaces will have a height not greater than 14.00" from top surface to top surface.

The bottom stepping height will not exceed 24.00" from the ground to the top of the stepping surface at any time.

STEP LIGHTS

There will be two (2) white LED step lights with chrome housing provided for each set of aerial basket access steps.

In order to ensure exceptional illumination, each light will provide a minimum of 25 foot-candles (fc) covering an entire 15" x 15" square placed ten (10) inches below the light and a minimum of 1.5 fc covering an entire 30" x 30" square at the same ten (10) inch distance below the light.

The step lights will be actuated when parking brake is applied and with aerial master switch.

These lights will meet NFPA requirements for step lighting.

STABILIZER WARNING LIGHTS

There will be four (4) Whelen®, Model M6*C, LED flashing warning lights with Whelen, Model M6FC, chrome flanges installed, one (1) on each stabilizer cover panel.

- The front stabilizer pan lights will be red LED with a clear lens
- The rear stabilizer pan lights will be red LED with a clear lens

These warning lights will be activated by the same switch as the side warning lights.

STABILIZER BEAM WARNING LIGHTS

Two (2) 4.00" diameter red LED flashing lights will be mounted on each stabilizer, one (1) facing forward and one (1) facing rearward. The lights will be Grote Supernova 40 series LED lights. The lights will be



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recessed in the horizontal beam of the stabilizer. These warning lights will be activated with the aerial master switch.

STABILIZER SCENE LIGHTS

There will be one (1) Amdor®, Model AY-LB-12HW012, 190 lumen, 12" long, white LED strip light installed under each stabilizer beam to illuminate the surrounding area. A total of six (6) lights will be installed. The lights will be activated by the aerial master switch.

DC POWER CABLE TO TIP

There will be a cable installed in the aerial device to provide 20.48 amps @ 12 volts DC to the tip of the aerial device.

12 VOLT, PLATFORM LIGHT

There will be one (1) Whelen®, Model P*H1P1, 10,130 lumens, 12 volt DC light with white LEDs and flood optics provided.

The painted parts of this light assembly to be white.

There will be a pull up pole with light switch included with the light head.

The light will be provided on the exterior side wall of the platform basket on the right side behind the rear wall.

The power to the lights will be controlled by switches at the platform/tip and turntable.

The pole will include a switch to be connected to the Do Not Move Truck Indicator. This indicator will be activated if the parking brake is released and the light pole is not in a stowed position.

UNDER PLATFORM LIGHTING

There will be two (2) HiViz Model FT-MB-12-TR-*-*-, 4,435 effective lumens 2.36" high x 17.65" long x 3.11" deep light(s) with white LEDs, a combination of flood and spot optics and trunnion mount(s) provided per the following One (1) light installed under the left side corner step in the center position and One (1) light installed under the right side corner step in the center position. The painted parts of the light housing and brackets to be white.

The light(s) will be controlled from switch(es) at the turntable and pump panel.

The light(s) may be load managed when the parking brake is applied.

COMMUNICATION SYSTEM

An Atkinson communication system will be furnished between the platform and the turntable operator's position. The master control located at the turntable control console will have the transmitting and receiving volume controls along with the push to talk button. A self-contained "hands-off" speaker microphone will be located front and center of the platform which will require no operator attention to transmit or receive.



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BREATHING AIR

Breathing air will be supplied to the aerial platform. The air system will incorporate one (1) 510 cubic foot, 6000-psi cylinder. To allow the turntable operator an unobstructed view of the platform the cylinder will be mounted on the left side of the aerial base section while viewed from the turntable. A pressure regulator located at the air cylinder. A shutoff valve with guard will be provided on the cylinder. The air will be routed to the basket using hose especially designed for use in breathing air systems. At the platform, the breathing air will be accessible via two (2) quick couplings for air masks. These will have a CEJN brass series 344 coupling. Two (2) couplings will be located at the rear of the basket, one (1) on each side. There will be a weather resistant storage compartment for two (2) air masks provided at the basket with a rubber draw latch. A 100' recharge hose will be provided for refilling the air cylinder without having to remove the tank from its mounting.

The breathing air cylinder will be designed and constructed to conform to the requirements of the United Nations (UN) on the transportation of dangerous goods.

BREATHING AIR LEVEL AND WARNING SYSTEM

The level of breathing air remaining will be visible on the LCD display at all operating positions. The display will incorporate a low-pressure warning circuit that activates an audible alarm when 20% maximum air cylinder capacity remains. A second, louder audible alarm will activate when the remaining air level drops to 10% of maximum air cylinder capacity.

AERIAL PEDESTAL

The aerial pedestal will accommodate the height of the cab.

LYFECOMBO™ BRACKETS

Brackets will be provided to increase the safety of firefighters during fire ground and rescue operations. The removable brackets will have the following three (3) functions: securing a roof ladder to the basket, two (2) rappelling anchor points, and mounting bars to allow the secure mounting of a rescue basket stretcher.

LyfeLadder™ brackets will be designed to allow firefighter access below the basket using up to a 20' roof ladder. The ladder will be secured through its beams and one (1) rung, by a 1.00" diameter aluminum rod capable of being positively latched in place and able to withstand a minimum of a 500lb load. There will be a latch to keep the ladder in a vertical position at all times. A set of nylon guides will be provided to aid in positioning the roof ladder on the mounting brackets.

Two (2) **LyfeEye™** rappelling arms will be provided. Forged stainless steel eyebolts with a 1.38" inside diameter will be incorporated into the design of the brackets for use as a rappel line anchor. Each anchor point will have a capacity of 300lb.

LyfeSupport™ rescue basket support brackets will be provided to allow patient transport using the aerial. Two (2) quick clip basket straps will be used to secure the basket to the brackets.



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Strain gauging and testing will have been completed on the system (ladder and complete holding device) to ensure structural integrity of all components and maintain a minimum of two to one (2:1) safety factor.

HITCH, WINCH MOUNT

A hitch receiver will be supplied at the left and right side of the vehicle in front of the rear wheels. The hitch will not interfere with the angle of departure and will be tied directly to the frame rails. The hitch will be capable of up to a 10,000 lb direct pull. Receiver plugs will be provided for the receiver when it is not in use.

AERIAL TURNTABLE MANSAYER™ BAR

A ManSaver™ bar will be installed at the aerial turntable.

AERIAL WATERWAY

The aerial waterway will be capable of being supplied by either a midship mounted pump or an external water source through a 5.00" intake at the side of the apparatus.

A 5.00" water swivel will be installed below the aerial turntable permitting the ladder to rotate 360 degrees continuously.

A 5.00" water swivel will be installed at the aerial heel pivot pin that will permit water tower operations of -15 degrees to 77 degrees. The heel pivot pin will not be integral with the waterway swivel at any point. The waterway design will allow complete servicing of the waterway swivel without disturbing the heel pivot pin.

A telescoping aluminum waterway will be installed on the side of the aerial ladder sections. The waterway will consist of a 5.50" diameter tube for the base section, 5.00" diameter tube for the lower mid section, 4.50" diameter tube for the center mid section, 4.00" diameter tube for the upper mid section, and 3.50" diameter tube for the fly section.

A 1.50" drain will be provided for the waterway. The drain will be located below the body on the right side rearward of the running board.

WATERWAY SEALS

The waterway seals will be of type-B PolyPak design, composed of nitroxile seal and a nitrile wiper, which together offer maximum stability and extrusion resistance on the waterway. The seal will be capable of withstanding pressures up to 2000 psi, temperatures in excess of 250 degrees Fahrenheit and have resistance to all foam generating solutions. The seals will be internally lubricated.

The waterway seals will have automatic centering guides constructed of synthetic thermalpolymer. The guides will provide positive centering of the extendible sections within each other and the base section to insure longer service life and smoother operation.



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PLATFORM WATER SYSTEM

A 4.00" (internal diameter) water swivel will connect the fly section waterway to the platform waterway. The water swivel will permit water tower operations from -15 degrees to 77 degrees. The water will be routed from the swivel to a 4.00" gear operated valve(s) on the front of the platform using a combination of 4.00" tubes and piping. The monitor(s) will be bolted onto the valve(s).

A 2.50" preset pressure relief valve will be provided in the waterway system. It will be designed to protect the aerial waterway from excess pressure. It will dump water to the ground when operating.

A shower nozzle rated at 75 gpm will be provided beneath the platform for heat protection for the platform personnel. A direct linkage control for the shower nozzle will be provided.

One (1) - 2.50" preconnect will be provided at the front of the platform with a swivel elbow. The preconnect will be gated at the platform. The preconnect will be furnished with 2.50" NST threads and chrome plated cap.

AERIAL MONITOR

There will be two (2) Akron Model 3480 monitors with stow and deploy provided at the front of the platform. One monitor will have a Akron 1250 gpm Model 5177 electric nozzle with built in stream shaper and the other monitor will have a Akron 3499 stacked tips and 3485 stream shaper.

The monitor's functions will be controlled electrically from two (2) separate locations. One (1) control will be located at the turntable control console and the other at the basket control console.

WATERWAY FLOWMETER

Waterway flow, including total water flowed, will be monitored by the microprocessor. An LCD display will be located at the upper and lower control stations.

WATERWAY INLET

There will be a 5.00" schedule 10 stainless steel inlet pipe on the right side of the apparatus. The inlet will be connected to the base of the ladder, through the turntable swivel, to assure continuous rotation. The inlet will terminate with a 5.00" NST chrome adapter and a long handled chrome cap.

TOOLS

The following tools will be provided for retorquing of all specified bolts as recommended by the manufacturer:

- Torque Wrench
- All Required Extensions, Sockets and Adapters
- 4-to-1 Multiplier

MANUALS

The aerial manufacturer will provide two (2) operator maintenance manuals and two (2) wiring diagrams pertaining to the aerial device. Manuals will be in the English language.



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INITIAL INSTRUCTION

On initial delivery of the fire apparatus, the contractor will supply a qualified representative to demonstrate the apparatus and provide initial instruction to the fire department regarding the operation, care, and maintenance of the apparatus for a period of three (3) consecutive days.

LOOSE EQUIPMENT

The following equipment will be furnished with the completed unit:

- One (1) bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit.

NFPA LOOSE EQUIPMENT

NFPA Required Loose Equipment Provided by Fire Department

The following loose equipment as outlined in NFPA 1900, 2024 edition, table 8.1 and CAN/ULC S515:2024 edition, section 5.2 will be provided by the fire department:

- One (1) traffic vest for each seating position, each vest to comply with ANSI/ISEA 107, *American National Standard for High-Visibility Safety Apparel and Accessories*, and have a five-point breakaway feature that includes two (2) at the shoulders, two (2) at the sides, and one (1) at the front.
- Five (5) fluorescent orange traffic cones not less than 28.00" (711 mm) in height, each equipped with a 6.00" (152 mm) retro-reflective white band no more than 4.00" (152 mm) from the top of the cone, and an additional 4.00" (102 mm) retro-reflective white band 2.00" (51 mm) below the 6.00" (152 mm) band.
- Five (5) illuminated warning devices such as highway flares, unless the five (5) fluorescent orange traffic cones have illuminating capabilities.
- Four (4) ladder belts meeting the requirements of NFPA 2500.

NFPA Loose Equipment That Should be Considered

The following loose equipment as outlined in NFPA 1900, 2024 edition, appendix table A.8.4 (a) and CAN/ULC S515:2024 edition, section 5.2 should be considered:

- 800 ft (240 m) of 2.50" (65 mm) or larger fire hose
- 400 ft (120 m) of 1.50" (38 mm), 1.75" (45 mm), or 2.00" (52 mm) fire hose
- One (1) handline nozzle, 200 gpm min
- Two (2) handline nozzles, 95 gpm min
- One (1) playpipe with shutoff and 1", 1.125", and 1.25" tips
- Four (4) SCBA apparatus
- Four (4) SCBA spare cylinders
- One (1) first aid kit.
- Four (4) salvage covers, each a minimum size of 12 ft × 18 ft (3.6 m × 5.5 m).
- Four (4) combination spanner wrenches.



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- Two (2) hydrant wrenches.
- One (1) double female 2.50" adapter with national hose (NH) thread.
- One (1) double male 2.50" adapter with national hose (NH) thread.
- One (1) rubber mallet, suitable for use on suction hose connections.
- One (1) 150 ft (45 m) light-use life safety rope meeting the requirements of NFPA 2500.
- One (1) 150 ft (45 m) general-use life safety rope meeting the requirements of NFPA 2500.
- One (1) automatic external defibrillator (AED).

SOFT SUCTION HOSE PROVIDED BY FIRE DEPARTMENT

Hose is not on the apparatus as manufactured. The fire department will provide suction or supply hose.

DRY CHEMICAL EXTINGUISHER PROVIDED BY FIRE DEPARTMENT

The extinguisher is not on the apparatus as manufactured. The fire department will provide and mount the extinguisher.

WATER EXTINGUISHER PROVIDED BY FIRE DEPARTMENT

The extinguisher is not on the apparatus as manufactured. The fire department will provide and mount the extinguisher.

FLATHEAD AXE PROVIDED BY FIRE DEPARTMENT

The axe is not on the apparatus as manufactured. The fire department will provide and mount the axe.

PICKHEAD AXE PROVIDED BY FIRE DEPARTMENT

The axe is not on the apparatus as manufactured. The fire department will provide and mount the axe.

PAINT PROCESS

The exterior custom cab and body painting procedure will consist of a seven (7) step finishing process as follows:

1. Manual Surface Preparation - All exposed metal surfaces on the custom cab and body will be thoroughly cleaned and prepared for painting. Imperfections on the exterior surfaces will be removed and sanded to a smooth finish. Exterior seams will be sealed before painting. Exterior surfaces that will not be painted include; chrome plating, polished stainless steel, anodized aluminum and bright aluminum treadplate.
2. Chemical Cleaning and Pretreatment - All surfaces will be chemically cleaned to remove dirt, oil, grease, and metal oxides to ensure the subsequent coatings bond well. The aluminum surfaces will be properly cleaned and treated using a high pressure, high temperature 4 step Acid Etch process. The steel and stainless surfaces will be properly cleaned and treated using a high temperature 3 step process specifically designed for steel or stainless. The chemical treatment converts the metal surface to a passive condition to help prevent corrosion.
3. Surfacer Primer - The Surfacer Primer will be applied to a chemically treated metal surface to provide a strong corrosion protective basecoat. A minimum thickness of 2 mils of Surfacer Primer is applied to surfaces that require a Critical aesthetic finish. The Surfacer Primer is a two-



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component high solids urethane that has excellent sanding properties and an extra smooth finish when sanded.

4. Finish Sanding - The Surfacer Primer will be sanded with a fine grit abrasive to achieve an ultra-smooth finish. This sanding process is critical to produce the smooth mirror like finish in the topcoat.
5. Sealer Primer - The Sealer Primer is applied prior to the Basecoat in all areas that have not been previously primed with the Surfacer Primer. The Sealer Primer is a two-component high solids urethane that goes on smooth and provides excellent gloss hold out when topcoated.
6. Basecoat Paint - Two coats of a high performance, two component high solids polyurethane basecoat will be applied. The Basecoat will be applied to a thickness that will achieve the proper color match. The Basecoat will be used in conjunction with a urethane clear coat to provide protection from the environment.
7. Clear Coat - Two (2) coats of Clear Coat will be applied over the Basecoat color. The Clear Coat is a two-component high solids urethane that provides superior gloss and durability to the exterior surfaces. Lap style and roll-up doors will be Clear Coated to match the body. Paint warranty for the roll-up doors will be provided by the roll-up door manufacturer.

After the cab and body are painted, the color will be verified to make sure that it matches the color standard. Electronic color measuring equipment will be used to compare the color sample to the color standard entered into the computer. Color specifications will be used to determine the color match. A Delta E reading will be used to determine a good color match within each family color.

All removable items such as brackets, compartment doors, door hinges, and trim will be removed and painted separately if required, to ensure paint behind all mounted items. Body assemblies that cannot be finish painted after assembly will be finish painted before assembly.

The paint finish quality levels for critical areas of the apparatus (cab front and sides, body sides and doors, and boom lettering panels) are to meet or exceed Cadillac/General Motors GMW15777 global paint requirements. Orange peel levels are to meet or exceed the #6 A.C.T. standard in critical areas. The manufacture's written paint standards will be available upon request.

Environmental Impact

Contractor will meet or exceed all current state regulations concerning paint operations. Pollution control will include measures to protect the atmosphere, water and soil. Controls will include the following conditions:

- Topcoats and primers will be chrome and lead free.
- Metal treatment chemicals will be chrome free. The wastewater generated in the metal treatment process will be treated on-site to remove any other heavy metals.
- Particulate emission collection from sanding operations will have a 99.99 percent efficiency factor.



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- Particulate emissions from painting operations will be collected by a dry filter or water wash process. If the dry filter is used, it will have an efficiency rating of 98 percent. Water wash systems will be 99.97 percent efficient.
- Water from water wash booths will be reused. Solids will be removed on a continual basis to keep the water clean.
- Paint wastes are disposed of in an environmentally safe manner.
- Empty metal paint containers will be recycled to recover the metal.
- Solvents used in clean-up operations will be recycled on-site or sent off-site for distillation and returned for reuse.

Additionally, the finished apparatus will not be manufactured with or contain products that have ozone depleting substances. Contractor will, upon demand, present evidence that the manufacturing facility meets the above conditions and that it is in compliance with his state EPA rules and regulations.

CAB PAINT

The cab will be painted #40 lime yellow.

BODY PAINT

The body will be painted to match the single cab paint color.

GALVANIZED CHASSIS FRAME ASSEMBLY

The chassis frame assembly will be hot dip galvanized before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, etc.

Components that are included with the chassis frame assembly that will be hot dip galvanized are:

- Frame rails
- Frame liners
- Cross members
- Front frame extension

All galvanized components are inspected for compliance with ASTM specifications.

Battery boxes will be stainless steel.

All components that are not galvanized will be painted primer and gloss black paint (or as otherwise stated in a secondary option).

AXLE HUB PAINT

All axle hubs will be painted to match primary job color.



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TRANSIT COATING

All non-painted metal surfaces on the exterior of the vehicle will be sprayed with a corrosion protective coating provided by Carwell. The coating can be removed with soap and water. The coating is made of a linseed oil base and is biodegradable.

The underside non-painted metal surfaces will also be coated with a corrosion protective coating.

COMPARTMENT INTERIOR PAINT

The interior of all compartments will be painted with a gray spatter finish for ease of cleaning and to make it easier to touch up scratches and nicks.

AERIAL DEVICE PAINT COLOR

The aerial device paint procedure will consist of a seven (7) step finishing process as follows:

1. Manual Surface Preparation - All exposed metal surfaces on the aerial device structural components above the rotation point will be thoroughly cleaned and mechanically shot-blasted to remove metal impurities and prepare the aerial for painting.
2. Zinc Rich Primer - Zinc rich primer will be applied to the torque box and stabilizers.
3. Primer/Surfacer Coats - A two (2) component epoxy primer/surfacer will be applied to the mechanically shot-blasted metal surfaces to provide a strong corrosion protective base coat and to smooth out the surface. All seams will be caulked with a two (2) component epoxy caulk before painting.
4. Hand Sanding - The primer/surfacer coat of the outer surfaces of the hand rails and base rails will be lightly sanded to a smooth finish.
5. Primer Coat - A two (2) component epoxy primer coat will be applied over the sanded primer.
6. Topcoat Paint - Urethane base coat will be applied to opacity for correct color matching.
7. Clear Coat - Two (2) coats of an automotive grade two (2) component urethane will be applied.

Surfaces that will not be painted include all chrome plated, polished stainless steel, anodized aluminum and bright aluminum treadplate.

All buy out components, such as monitor, nozzle, gauges, etc. will be supplied as received from the vendor.

Removable items such as brackets will be removed and painted separately to ensure paint coverage behind all mounted items.

The aerial device components will be painted as follows using the aforementioned seven (7) step finishing process:

- Aerial basket and basket leveling cylinders at tip: grey metallic 509



DENVER INTERNATIONAL AIRPORT PIERCE 100' HEAVY DUTY AERIAL TOWER



- Aerial device ladder sections and extension cylinders: gray metallic 509
- Aerial turntable and leveling cylinders (if applicable) at turntable: gray metallic 509
- Aerial control console: gray metallic 509
- Aerial lift cylinders: grey metallic 509
- Aerial rotation motor (if applicable): black
- Aerial torque box, support structure and components below the rotation point: black 101 paint
- Aerial stabilizers (middle and rear only): black 101
- Aerial boom support: black 101

REFLECTIVE BAND

A 10.00" blue reflective band will be provided across the front of the vehicle and along the sides of the body.

The reflective band provided on the cab face will be below the headlights on the fiberglass.

REAR CHEVRON STRIPING

There will be alternating chevron striping located on the rear-facing vertical surface of the apparatus. Covered surfaces will include the rear wall and aluminum doors. Rear compartment doors, stainless steel access doors, and the rear bumper will not be covered.

The colors will be red and fluorescent yellow green diamond grade.

Each stripe will be 6.00" in width.

This will meet the requirements of the current edition of NFPA 1901, which states that 50% of the rear surface will be covered with chevron striping.

REFLECTIVE STRIPE ON STABILIZERS

There will be a 4.00" wide fluorescent yellow green diamond grade reflective stripe provided on the forward and rear facing side of all aerial stabilizers.

CHEVRON STRIPING ON CAB AND CREW CAB DOOR EDGE

There will be alternating chevron striping located on the inside of each cab and crew cab door edge. The design will be either DOT pattern or standard chevron design. Width will be determined by available space. The striping will consist of the following colors:

The first color will be red diamond grade

The second color will be fluorescent yellow green diamond grade

JOG(S) IN REFLECTIVE BAND

The reflective band located on each side of the apparatus body will contain one (1) jog(s) and will be angled at approximately 45 degrees when installed.



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VINYL STRIPE ON LOWER REAR PLATFORM BASKET

Prior to the basket being mounted on the aerial tip, the lower portion rear facing surfaces each side of the rear of the basket, approximately 12.00" tall from bottom of basket up and full width will have a Blackvinyl stripe provided. There will also be the same color stripe provided that is approximately 3.00" tall from the bottom of the lower fly tip cross tube weldment to the top of this weldment.

These vinyl stripes will aid in limiting reflection from the lightbar on the back of the basket into the cab when driving, but will not take away from the overall portion of the basket being visible while in operation.

DIAMOND GRADE CHEVRON STRIPE ON TURNTABLE ACCESS STEPS

A fluorescent yellow green diamond grade and red diamond grade stripe will be provided on the rear of the swing down turn table access steps. one (1) step(s) will be striped.

CHEVRON STRIPING ON THE FRONT BUMPER

There will be alternating chevron striping located on the front bumper.

The colors will be Red 983-72 and Fluorescent Yellow-Green 983-23 diamond grade.

The size of the striping will be 6.00".

CAB DOOR REFLECTIVE STRIPE

A 6.00" x 16.00" fluorescent yellow green diamond grade reflective stripe will be provided across the interior of each cab door. The stripe will be located approximately 1.00" up from the bottom, on the door panel.

This stripe will meet the current edition of applicable NFPA standards.

LETTERING

The lettering will be totally encapsulated between two (2) layers of clear vinyl.

LETTERING

Forty-one (41) to sixty (60) genuine gold leaf lettering, 3.00" high, with outline and shade will be provided.

LETTERING

There will be reflective lettering, 14.00" high, with no outline or shade provided. There will be four (4) letters provided.

LETTERING

Forty-one (41) to sixty (60) reflective lettering, 10.00" high, with no outline or shade will be provided.

LETTERING

There will be reflective lettering, 20.00" high, with no outline or shade provided. There will be six (6) letters provided.



DENVER INTERNATIONAL AIRPORT PIERCE 100' HEAVY DUTY AERIAL TOWER



LETTERING

There will be reflective lettering, 18.00" high, with no outline or shade provided. There will be two (2) letters provided.

EMBLEMS

There will be two (2) monogram emblem(s) installed one on each side on the cab doors., with "DENVER" above the monogram and "FIRE DEPT." below the monogram.

The monogram and lettering will be made of light blue reflective material with black outline.

The design will be the same as on previous units.

EMBLEMS

There will be two (2) pair of American flag emblems, 8.00" high, installed rear upper corners of crew cab each side. The flag will be flat (not moving) and made out of vinyl material. The pair will be mirror images of each other.

EMBLEM

There will be two (2) reflective emblem(s), approximately 12.00" - 14.00" in size, installed D1 & P1. the emblem will be modeled after the department submitted information (art, patch, etc).

CAB GRILLE DESIGN

An American flag design will be painted on the cab grille.

CHASSIS SERVICE

Chassis service will be done when the apparatus arrives at the dealer location, but before delivery to the customer.

Service will include:

- Engine Oil and filter change
- Fuel filter change
- Grease drivelines
- Check and fill all fluids.

OVAL STRAPPING HERON RIB

two (2) roll (s) shall be provided and shipped loose with the truck for the department to install. The color will be red.

SUPERVAC BATTERY POWERED PPV FAN

The following equipment shall be furnished with the completed unit:



DENVER INTERNATIONAL AIRPORT PIERCE 100' HEAVY DUTY AERIAL TOWER



[Qty,] of Supervac battery powered PPV Fan, model #V16-BL-12-AC-SP. This portable fan is to run off of two Milwaukee M18 batteries (included), use two fast AC charger (included), and have 110 VAC shore power capabilities.

SERVICE PERSONNEL TRAINING

There will be two (2) weeks of additional service training provided by the dealership and manufacturer for up to eight (8) fleet mechanic at local dealer location.

RESCUE TOOL SYSTEM

Holmatro tools list below will be provided and installed on the truck:

- One (1) PCU 50 Cutter Kit
- One (1) PSP 50 Spreader Kit
- One (1) PTR 50 Telescopic Ram Kit

Each New Kit Includes:

- One (1) Pentheon Tool
- Two (2) 8 Ah Batteries
- One (1) Charger - Your choice of 12 volt or 110 volt
- One (1) On-Tool Charging Cable
- One (1) Tool Mount

MANUAL, FIRE APPARATUS PARTS

Two (2) custom parts manuals for the complete fire apparatus will be provided in hard copy with the completed unit.

The manual will contain the following:

- Job number
- Part numbers with full descriptions
- Table of contents
- Parts section sorted in functional groups reflecting a major system, component, or assembly
- Parts section sorted in Alphabetical order
- Instructions on how to locate a part

The manual will be specifically written for the chassis and body model being purchased. It will not be a generic manual for a multitude of different chassis and bodies.



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SERVICE PARTS INTERNET SITE

The service parts information included in this manual is also available on the Pierce website. The website offers additional functions and features not contained in this manual, such as digital photographs and line drawings of select items. The website also features electronic search tools to assist in locating parts quickly.

MANUALS, CHASSIS SERVICE

Two (2) chassis service manuals containing parts and service information on major components will be provided with the completed unit.

The manuals will contain the following sections:

- Job number
- Table of contents
- Troubleshooting
- Front Axle/Suspension
- Brakes
- Engine
- Tires
- Wheels
- Cab
- Electrical, DC
- Air Systems
- Plumbing
- Appendix

The manual will be specifically written for the chassis model being purchased. It will not be a generic manual for a multitude of different chassis and bodies.

MANUALS, CHASSIS OPERATION

Two (2) chassis operation manuals will be provided. Manuals will be in the English language.

ENGINE MANUALS

There will be one (1) service manual(s) provided for a Cummins X15 engine. The manual(s) will be in a printed format.



DENVER INTERNATIONAL AIRPORT PIERCE 100' HEAVY DUTY AERIAL TOWER



TRANSMISSION MANUAL(S)

There will be one (1) additional maintenance/service manual(s) for an Allison 4500 Series transmission provided.

ONE (1) YEAR MATERIAL AND WORKMANSHIP

A Pierce basic apparatus limited warranty certificate, WA0008, is included with this document.

THREE (3) YEAR MATERIAL AND WORKMANSHIP

The Pierce custom chassis limited warranty certificate, WA0284, is included with this document.

ENGINE WARRANTY

A Cummins **five (5) year** limited engine warranty will be provided. A limited warranty certificate, WA0181, is included with this document.

STEERING GEAR WARRANTY

A Sheppard **three (3) year** limited steering gear warranty will be provided. A copy of the warranty certificate will be submitted with this document.

FIFTY (50) YEAR STRUCTURAL INTEGRITY

The Pierce custom chassis frame and crossmembers limited warranty certificate, WA0038, is included with this document.

FRONT AXLE THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY

The Pierce TAK-4 suspension limited warranty certificate, WA0050, is included with this document.

TDM REAR AXLE FIVE (5) YEAR MATERIAL AND WORKMANSHIP WARRANTY

A Meritor™ Axle 5 year limited warranty will be provided.

ABS BRAKE SYSTEM THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY

A Meritor Wabco™ ABS brake system limited warranty certificate, WA0232, is included with this document.

TEN (10) YEAR STRUCTURAL INTEGRITY

The Pierce custom cab limited warranty certificate, WA0012, is included with this document.

TEN (10) YEAR PRO-RATED PAINT AND CORROSION

A Pierce cab limited pro-rated paint warranty certificate, WA0055, is included with this document.

FIVE (5) YEAR MATERIAL AND WORKMANSHIP

The Pierce Command Zone electronics limited warranty certificate, WA0014, is included with this document.

CAMERA SYSTEM WARRANTY

A Pierce fifty four (54) month warranty will be provided for the camera system.



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COMPARTMENT LIGHT WARRANTY

The compartment lights will not offer an extended warranty.

TRANSMISSION WARRANTY

The transmission will have a **five (5) year/unlimited mileage** warranty covering 100 percent parts and labor. The warranty will be provided by Allison Transmission.

Note: The transmission cooler is not covered under any extended warranty you may be getting on your Allison Transmission. Please review your Allison Transmission warranty for coverage limitations.

TRANSMISSION COOLER WARRANTY

The transmission cooler will carry a five (5) year parts and labor warranty (exclusive to the transmission cooler). In addition, a collateral damage warranty will also be in effect for the first three (3) years of the warranty coverage and will not exceed \$10,000 per occurrence. A copy of the warranty certificate will be included with this document.

WATER TANK WARRANTY

A UPF poly water tank limited warranty certificate, WA0195, is included with this document.

TEN (10) YEAR STRUCTURAL INTEGRITY

The Pierce apparatus body limited warranty certificate, WA0009, is included with this document.

ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY

A Gortite roll-up door limited warranty will be provided. The mechanical components of the roll-up door will be warranted against defects in material and workmanship for the lifetime of the vehicle. A six (6) year limited warranty will be provided on painted and satin roll up doors.

An AMDOR roll-up door limited warranty will be provided. The roll-up door will be warranted against manufacturing defects for a period of **ten (10) years**. A **five (5) year** limited warranty will be provided on painted roll up doors.

PUMP WARRANTY

The Waterous pump will be provided with a seven (7) year material and workmanship limited warranty.

A copy of the warranty certificate will be included with this document.

TEN (10) YEAR PUMP PLUMBING WARRANTY

The Pierce apparatus plumbing limited warranty certificate, WA0035, is included with this document.

FOAM SYSTEM WARRANTY

The Husky 12 foam system limited warranty certificate, WA0231, is included with this document.

TWENTY (20) YEAR AERIAL DEVICE STRUCTURAL INTEGRITY WARRANTY

The Pierce device limited warranty certificate, WA0052, is included with this document.



DENVER INTERNATIONAL AIRPORT PIERCE 100' HEAVY DUTY AERIAL TOWER



AERIAL SWIVEL WARRANTY

An Amity five (5) year limited swivel warranty will be provided. A copy of the warranty certificate will be included with this document.

HYDRAULIC SYSTEM COMPONENTS WARRANTY

Aerial hydraulic system components will be provided with a five (5) year material and workmanship limited warranty.

HYDRAULIC SEAL WARRANTY

Aerial hydraulic seals will be provided with a three (3) year material and workmanship limited warranty.

A copy of the warranty certificates is included with this document.

AERIAL WATERWAY WARRANTY

An Amity ten (10) year limited waterway warranty will be provided. A copy of the warranty certificate is included with this document.

FOUR (4) YEAR PRO-RATED PAINT AND CORROSION

A Pierce aerial device limited pro-rated paint warranty certificate, WA0047, is included with this document.

FIVE (5) YEAR MATERIAL AND WORKMANSHIP

The Pierce Command Zone electronics limited warranty certificate, WA0014, is included with this document.

TEN (10) YEAR PRO-RATED PAINT AND CORROSION

A Pierce body limited pro-rated paint warranty certificate, WA0057, is included with this document.

THREE (3) YEAR MATERIAL AND WORKMANSHIP

The Pierce Goldstar gold leaf lamination limited warranty limited warranty certificate, WA0018, is included with this document.

VEHICLE STABILITY CERTIFICATION

The fire apparatus manufacturer will provide a certification stating the apparatus complies with NFPA 1900, current edition, section 7.14, Vehicle Stability. The certification is included with this document.

ENGINE INSTALLATION CERTIFICATION

The fire apparatus manufacturer will provide a certification, along with a letter from the engine manufacturer stating they approve of the engine installation in the bidder's chassis. The certification will be provided at the time of delivery.

POWER STEERING CERTIFICATION

The fire apparatus manufacturer will provide a certification stating the power steering system as installed meets the requirements of the component supplier. The certification is included with this document.



DENVER INTERNATIONAL AIRPORT PIERCE 100' HEAVY DUTY AERIAL TOWER



CAB INTEGRITY CERTIFICATION

The fire apparatus manufacturer will provide a cab crash test certification with this document. The certification will state that a specimen representing the substantial structural configuration of the cab has been tested and certified by an independent third party test facility. Testing events will be documented with photographs, real-time and high-speed video, vehicle accelerometers, cart accelerometers, and a laser speed trap. The fire apparatus manufacturer will provide a state licensed professional engineer to witness and certify all testing events. Testing will meet or exceed the requirements below:

- SAE J2422 Cab Roof Strength Evaluation - Quasi-Static Loading Heavy Trucks.
- European Occupant Protection Standard ECE Regulation No.29.
- SAE J2420 COE Frontal Strength Evaluation - Dynamic Loading Heavy Trucks.

Side Impact

The cab will be subjected to dynamic preload where a 14,320-lb moving barrier is slammed into the side of the cab at 5.50 mph, striking with an impact of 13,000 ft-lb of force. This test is part of the SAE J2422 test procedure and more closely represents the forces a cab will see in a rollover incident.

Roof Crush

The same cab will be subjected to a roof crush force of 22,050 lb. This value meets the ECE 29 criteria and is equivalent to the front axle rating up to a maximum of ten (10) metric tons.

Additional Roof Crush

The same cab will be subjected to a roof crush force of 100,000 lb. (Four and a half times the load criteria of ECE 29)

Frontal Impact

The same cab will withstand a frontal impact of 32,600 ft-lb of force using a moving barrier in accordance with SAE J2420.

Additional Frontal Impact

The same cab will withstand a frontal impact of 65,200 ft-lb of force using a moving barrier. (Twice the force required by SAE J2420)

The same cab will withstand all tests without any measurable intrusion into the survival space of the occupant area.

CAB DOOR DURABILITY CERTIFICATION

Robust cab doors help protect occupants. Cab doors will survive a 200,000-cycle door slam test where the slamming force exceeds 20 G's of deceleration. The bidder will certify that the sample doors similar to those provided on the apparatus have been tested and have met these criteria without structural damage, latch malfunction, or significant component wear.



DENVER INTERNATIONAL AIRPORT PIERCE 100' HEAVY DUTY AERIAL TOWER



WINDSHIELD WIPER DURABILITY CERTIFICATION

Visibility during inclement weather is essential to safe apparatus performance. Windshield wipers will survive a 3 million cycle durability test in accordance with section 6.2 of SAE J198 *Windshield Wiper Systems - Trucks, Buses and Multipurpose Vehicles*. The bidder will certify that the wiper system design has been tested and that the wiper system has met these criteria.

ELECTRIC WINDOW DURABILITY CERTIFICATION

Cab window roll-up systems can cause maintenance problems if not designed for long service life. The window regulator design will complete 30,000 complete up-down cycles and still function normally when finished. The bidder will certify that sample doors and windows similar to those provided on the apparatus have been tested and have met these criteria without malfunction or significant component wear.

SEAT BELT ANCHOR STRENGTH

Seat belt attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat belt anchor design will withstand 3000 lb of pull on both the lap and shoulder belt in accordance with FMVSS 571.210 Seat Belt Assembly Anchorages. The bidder will certify that each anchor design was pull tested to the required force and met the appropriate criteria.

SEAT MOUNTING STRENGTH

Seat attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat mounting design will be tested to withstand 20 G's of force in accordance with FMVSS 571.207 Seating Systems. The bidder will certify that each seat mount and cab structure design was pull tested to the required force and met the appropriate criteria.

PERFORMANCE CERTIFICATIONS

Cab Air Conditioning

Good cab air conditioning temperature and air flow performance keeps occupants comfortable, reduces humidity, and provides a climate for recuperation while at the scene. The cab air conditioning system will cool the cab from a heat-soaked condition at 100 degrees Fahrenheit to an average of 78 degrees Fahrenheit in 30 minutes. The bidder will certify that a substantially similar cab has been tested and has met these criteria.

Cab Defroster

Visibility during inclement weather is essential to safe apparatus performance. The defroster system will clear the required windshield zones in accordance with SAE J381 Windshield Defrosting Systems Test Procedure And Performance Requirements - Trucks, Buses, And Multipurpose Vehicles. The bidder will certify that the defrost system design has been tested in a cold chamber and passes the SAE J381 criteria.

Cab Auxiliary Heater

Good cab heat performance and regulation provides a more effective working environment for personnel, whether in-transit, or at a scene. An auxiliary cab heater will warm the cab 77 degrees



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Fahrenheit from a cold-soak, within 30 minutes when tested using the coolant supply methods found in SAE J381. The bidder will certify, at time of delivery, that a substantially similar cab has been tested and has met these criteria.

AMP DRAW REPORT

The bidder will provide, at the time of bid and delivery, an itemized print out of the expected amp draw of the entire vehicle's electrical system.

The manufacturer of the apparatus will provide the following:

- Documentation of the electrical system performance tests.
- A written load analysis, which will include the following:
 - The nameplate rating of the alternator.
 - The alternator rating under the conditions specified per:
 - Current edition of applicable NFPA standards.
 - The minimum continuous load of each component that is specified per:
 - Current edition of applicable NFPA standards.
 - Additional loads that, when added to the minimum continuous load, determine the total connected load.
 - Each individual intermittent load.

All of the above listed items will be provided by the bidder per the current edition of applicable NFPA standards.

EXHIBIT C

Z-F-028 Replacement Oshkosh Striker 8x8 RT, Z-F-036 Replacement Oshkosh Striker 8x8 RT,
Z-F-037 Replacement Oshkosh Striker 8x8 RT



FRONT RANGE FIRE APPARATUS

7600 Miller Court
Frederick, CO 80504

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1-800-334-9911

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303-304-6118

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PERFORM. LIKE NO OTHER.™

FOR FURNISHING FIRE APPARATUS

January 05, 2026

City and County of Denver

The undersigned is prepared to manufacture for you, upon an order being placed by you, for final acceptance by Front Range Fire Apparatus., at its home office in Frederick, Colorado, the apparatus and equipment herein named and for the following prices:

| | |
|--|-------------------------------|
| Three (3) Oshkosh Striker 8x8 RT Per HGAC FS12-23 Includes delivery to customer location Per attached specification | \$8,965,915.00 |
| Multiple Vehicle Discount | Deduct (\$58,000.00) |
| Full payment due at factory before shipping if not prepaying | |
| Total | <u>\$ 8,907,915.00</u> |

Said apparatus and equipment are to be built and shipped in accordance with the specifications hereto attached, delays due to strikes, war, or intentional conflict, failures to obtain chassis, materials, or other causes beyond our control not preventing, within about 15 to 17 months after receipt of this order and the acceptance thereof at our office at Frederick, Colorado, and to be delivered to you Denver, CO

The specifications herein contained shall form a part of the final contract, and are subject to changes desired by the purchaser, provided such alterations are interlined prior to the acceptance by the company of the order to purchase, and provided such alterations do not materially affect the cost of the construction of the apparatus.

The specification for fire apparatus conforms with all Federal Department of Transportation (DOT) rules and regulations in effect at the time of bid, and with all National Fire Protection Association (NFPA) Guidelines for Automotive Fire Apparatus as published at the time of bid, except as modified by customer specifications. Any increased costs incurred by first party because of future changes in or additions to said DOT or NFPA standards will be passed along to the customers as an addition to the price set forth above. Unless accepted within 30 days from date, the right is reserved to withdraw this proposition.

Due to global supply chain constraints, any delivery date contained herein is a good faith estimate as of the date of this order/contract, and merely an approximation based on current information. Delivery updates will be made available, and a final firm delivery date will be provided as soon as possible. Also, any additional material surcharges will be added to the contract price.

FRONT RANGE FIRE APPRATUS.

By: _____
Duane Doucette
SALES REPRESENTATIVE



NO REGRETS WHEN
YOU CHOOSE
PIERCE.



A LOT'S RIDING ON YOUR INVESTMENT.

The safety of firefighters and families, the security of property and the well-being of the entire community depend on your decision. Lives and reputations ride on your investment. Make sure help is always on the way.

Go with longevity. Go with the #1 industry authority that protects the legacies great community leaders leave behind. When you invest in Pierce® fire apparatus, you're making the right call for the long haul.



No other manufacturer has a stronger foundation of expertise, stability and support.

Unmatched Support

- Over 35 years in business
- Staffed by 7 sales professionals with 150 years of combined experience
- State-of-the-art service center employs a team of highly trained and certified technicians
- Mobile services and a full line of parts and equipment

Untouchable Fire Apparatus Expertise

- Over 30,000 custom chassis built
- More than 30 patents attributed to our continued investment in research, development and safety
- Thousands of years of cumulative experience
- First single-source manufacturer of custom fire apparatus in North America to achieve ISO 9001 certification
- Only manufacturer to have third party, Underwriters Laboratories certification on the entire apparatus

Unshakable Stability

- Rock-solid financials as an Oshkosh Corporation Company
- Oshkosh named a World's Most Ethical Company by Ethisphere Institute
- Recognized as a 2016 Best Governance, Risk, and Compliance Program by NYSE Governance Services
- Complete transparency of a public traded company
- Greater strength from shared engineering and technology across all of Oshkosh Corporation
- With over 100 years of history and numerous industry-first contributions, we're not going anywhere
- America's Best Large Employers list by Forbes



200+
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CERTIFIED
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PIERCE



**OVER 13,000
EMPLOYEES
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OSHKOSH

**ISO 9001
CERTIFICATION**

PIERCE & OSHKOSH



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USED
PATENTS**

OSHKOSH



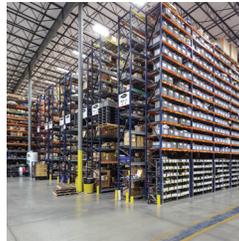
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PIERCE

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INVENTORY

PIERCE



**24/7
RESPONSE**

FRONT RANGE
FIRE APPARATUS



VOLUNTEER & COMBINATION
OFFICERS SECTION

Pierce leads the industry in sponsorships that support families of fallen firefighters, recognize outstanding achievement and further the education and safety of the fire service.

www.piercemfg.com



Pierce Manufacturing Inc., An Oshkosh Corporation Company
P.O. Box 2017, Appleton WI 54912-2017 USA



Specifications, descriptions and illustrative material in this literature are as accurate as known at the time of publication, but are subject to change without notice. Illustrations may include optional equipment and accessories and may not include all standard equipment. All measurements are nominal values.

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P-0108-SLLSTBLTYSS-FRNTRNG 1/17

Proposal for Denver International Airport (DEN)

Prepared by Front Range Fire Apparatus, Ltd

01/05/2026



STRIKER®

**DRIVEN TO
RESPOND.**



Option List

1/6/2026

Customer: Denver International Airport (DEN)
Representative: Doucette, Duane
Organization: Front Range Fire Apparatus, Ltd
Requirements Manager:
Description: Denver CO, (3) Striker 8x8 w/Roof Turret
Body: Striker Roof Turret (RT)
Chassis: 8x8

Bid Number: 274
Job Number:
Number of Units: 3
Bid Date: 01/05/2026
Stock Number:
Price Level: 43 (Current: 43)
Lane:

| Line | Option | Type | Option Description | Qty |
|------|---------|------|---|-----|
| 1 | 7002692 | | Consortium, HGACBuy | 1 |
| 2 | 0540326 | | Performance Bond, Not Requested | 1 |
| 3 | 7000817 | | Build Location, Neenah, WI | 1 |
| 4 | 7000802 | | Domiciled Location, USA, Domestic | 1 |
| 5 | 7001931 | | Striker Roof Turret (RT) | 1 |
| 6 | 7001926 | | 8x8 | 1 |
| 7 | 7001343 | | Unit to be Similar in Some Aspects Similar ARFF Unit To Reference - CSO125115 | 1 |
| 8 | 7001387 | | Paint Process | 1 |
| 9 | 7001384 | | Paint, Cab, Single Color Paint Color, Cab - #35 Safety Lime (FLNA 10322) Paint Color, Cab Fenders - #35 Safety Lime (FLNA 10322) Paint Color, Skid Plate Inserts - #99 Semi-Gloss Black (FLNA 41735) | 1 |
| 10 | 7000873 | | Paint, Single Color, Body 8x8 Paint Color, Body - #35 Safety Lime (FLNA 10322) Paint Color, Chassis Frame - #35 Safety Lime (FLNA 10322) Paint Color, Axle Hub - #35 Safety Lime (FLNA 10322) | 1 |
| 11 | 7001434 | | Graphics, Standard Graphics Package | 1 |
| 12 | 7001214 | | Stripe, Chevron, Diamond Grade, Rear | 1 |
| 13 | 7000796 | | Labels, w/o HRET Language, Labels - English | 1 |
| 14 | 7002494 | SP | Acc., Number Plates, Exterior, Illuminated, Removeable, LH/RH, Roof, (6) Sets | 1 |
| 15 | 7002246 | SP | Acc., Label, NO STEP, LH, Engine Cover | 1 |
| 16 | 7002008 | | Acc., Label, Warning, Compartments, Do Not Drill | 1 |
| 17 | 7002176 | | Acc., Label, Fuel Capacity 8x8 | 1 |
| 18 | 7002868 | | Acc., Labels, Switches, Cab and Left Structural Panel Language, Labels - English | 1 |
| 19 | 7000799 | | Undercoating-Rustproofing | 1 |
| 20 | 7000551 | | Winterization, 50,000 BTU Diesel System, Roof Turret or R50 HRET | 1 |
| 21 | 7002133 | | Cab, Standard | 1 |
| 22 | 7000576 | | Glass, Cab, Installation | 1 |
| 23 | 7000788 | | Cab Door Windows, Power Electric | 1 |
| 24 | 7000547 | | Mirrors, Cab, FMVSS, Heated & Electric w/Spotter | 1 |
| 25 | 7003276 | | Cab Windshield Deluge System ** | 1 |
| 26 | 7000785 | | Step, Cab, Standard | 1 |
| 27 | 7001965 | | Cab Doors, Hinged | 1 |
| 28 | 7002136 | | Grab Handles, Cab Door Interior, Hinged Doors, Standard | 1 |
| 29 | 7002138 | | Cab Interior Trim, Insulated, w/Rubber Flooring | 1 |
| 30 | 7002519 | | Cab Grab Handles, Interior, Standard | 1 |
| 31 | 7002135 | | Cab, Center Console, Flat | 1 |
| 32 | 7000787 | | Roof Hatch, Cab, Acrylic | 1 |
| 33 | 7002479 | | Acc, Switch Guard, Foam Switch | 1 |
| 34 | 7001249 | SP | Acc., Map Storage,w/Flat Center Console | 1 |
| 35 | 7001751 | SP | Acc., (2) Cab Sun Shades, Driver and Officer | 1 |
| 36 | 7001054 | | Acc., Check Strap, Door, Additional | 1 |
| 37 | 7000541 | | Seat, Drivers, Non-SCBA, Air, Tilt, Slide, Cloth | 1 |
| 38 | 7000782 | | Seat, Right Turret Operator, SCBA, Air, Fixed, Slide, Cloth, Smartdock | 1 |
| 39 | 7000780 | | Seat, Left Inside, SCBA, Non Adjustable, Fixed, Non Slide, Cloth, Smartdock | 1 |
| 40 | 7000781 | | Roof Hatch Access, 3 Step | 1 |
| 41 | 7001300 | | Compartment, Storage, Roll-Up Door, 3 Adj. Shelves, LED Lights, (4) 12V Outlets | 1 |
| 42 | 7000783 | | Cab HVAC, Dual Front & Rear, Scania | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|---|-----|
| 43 | 7000854 | | Radio/Electronic Equip Contract Specific ** | 1 |
| 44 | 7003681 | SP | Radios and Intercom, Denver | 1 |
| 45 | 7000778 | | Lights, Map, (2) Flexible, 24" Long, Driver & Officer | 1 |
| 46 | 7000776 | | Siren/PA, Whelen 295SL, (1) SA315 Speaker | 1 |
| 47 | 7000775 | | Fans, (2) Cab Window Defroster | 1 |
| 48 | 7002489 | SP | Lights, Flashlights, (3) Pelican 9415 LED | 1 |
| 49 | 7000497 | | Air Horns, Dual Hadley, Stutterhorn With Electric Horn | 1 |
| 50 | 7000495 | | Footswitches, SSC B-Series, Air Horn & Siren, Driver & Officer | 1 |
| 51 | 7002496 | SP | Acc., Equipment, Pedestal, Swing-Arm, Tablet Holder, LH Dash, w/USB Power | 1 |
| 52 | 7002497 | SP | Acc., Equipment, Pedestal, Swing-Arm, Tablet Holder, RH Dash, w/USB Power | 1 |
| 53 | 7002926 | | Camera, Thermal Imaging, Pan/Tilt, Center Roof Mount, FLIR M364C-LR NFPA2020 | 1 |
| 54 | 7003200 | | Camera, Bird's Eye 360 w/Back Up Camera ** | 1 |
| 55 | 7000575 | | Camera, Forward Video, RH Dash Mount, No Audio | 1 |
| 56 | 7001911 | SP | Digital Video Recorder, Safety Vision 4112-HVR | 1 |
| 57 | 7003063 | | Instruments, Standard, 8x8 | 1 |
| 58 | 7003062 | | Display, 8x8 | 1 |
| 59 | 7000769 | | LG Alert | 1 |
| 60 | 7000765 | | Lighting, Vehicle FMVSS | 1 |
| 61 | 7000475 | | Lighting, Headlights, LED, FMVSS/ECE, RH Traffic w/DRL | 1 |
| 62 | 7000743 | | Lighting, Headlights, Alternating, Wig-Wag, W/Mstr Wrn Swt Wig-Wag Swt | 1 |
| 63 | 7000762 | | Lights, Ground, LED (8) | 1 |
| 64 | 7000760 | | Lights, Fog/Driving, FMVSS/ECE | 1 |
| 65 | 7000822 | | Accent Lights, LED | 1 |
| 66 | 7000472 | | Lighting, License Plate, (1) Left Rear w/Bracket | 1 |
| 67 | 7000947 | | Cab Worklights, 24VDC, (2) Rigid E-Series 10" (254 mm), w/Glare Shields | 1 |
| 68 | 7001150 | | Side Worklights, 24VDC, Rigid 30" (762mm) E-Series, (4) LH & (4) RH | 1 |
| 69 | 7000949 | | Rear Worklights, (2) 24VDC, Rigid E-Series 10" LED | 1 |
| 70 | 7000747 | | Lights, Perimeter Warning, Red LED, Whelen 700 Series, Qty (10) | 1 |
| 71 | 7000746 | | Lights, Warning, Top Stand-By, (2) Whelen, L31HAF4, Amber LED | 1 |
| 72 | 7000745 | | Lights, Warning, Upper Front, LED Lightbars, (2) Whelen, Freedom IV, Clear Lens | 1 |
| | | | Light Color - Red | |
| 73 | 7000744 | | Lights, Warning, Upper Rear, LED Lightbars, (2) Whelen, Freedom IV, Clear Lens | 1 |
| | | | Light Color - Red | |
| 74 | 7002490 | SP | Standby Light Activation, On w/Ignition, Off w/Upper Warning Lights | 1 |
| 75 | 7002502 | SP | Light Tower, Will-Burt, 120VAC, Folding, NS4.5-900 WHL LED (6) Whelen Lightheads | 1 |
| 76 | 7000752 | | Lighting, Compartment, Amdor, LED, White | 1 |
| 77 | 7003578 | SP | Generator, Harrison 10 kW Hydraulic, 60 Hz, 8x8 | 1 |
| 78 | 7000451 | | Not Provided, Lighting, Cab Floodlights | 1 |
| 79 | 7000445 | | Not Provided, Side Floodlights, Roof Turret or HRET | 1 |
| 80 | 7000748 | | Not Provided, Rear Floodlights | 1 |
| 81 | 7000440 | | Outlets, Compartment, 120VAC, 20A GFI, Duplex, Strt Bld, (1) Ea/Side | 1 |
| 82 | 7003543 | SP | Power Strip, (1) EMS Compartment & (1) LH Upper, RH Rear Shoreline Power | 1 |
| 83 | 7001348 | | Batteries, Standard, Lead Acid | 1 |
| 84 | 7000740 | | Battery Charger, 85-265 VAC, 25 Amp, 45-65 Hz | 1 |
| 85 | 7000742 | | Auxiliary Air Compressor, 110V, 50/60 Hz | 1 |
| 86 | 7000864 | | Engine Preheater, 110/120V, (2) Scania Engine 1500W | 1 |
| 87 | 7003533 | SP | Auto Ejects, RH Rear, 110V/20A, (1) Batt Chrg & Cmpr, (2) Preheat, 8x8 | 1 |
| 88 | 7000396 | | Battery Jumper Studs | 1 |
| 89 | 7003581 | SP | Quick Start Button, LH Cab & LH Rear Body, w/Activation Alarm ** | 1 |
| 90 | 7000732 | | Air Inlet Receptacle, RH Rear, Auto-Eject, Kussmaul | 1 |
| 91 | 7002928 | SP | Air Outlet, LH Upper Compartment, w/50' Hose & Tire Gauge | 1 |
| 92 | 7000898 | | Standard Pump & Roll Speed Engine Over 700HP | 1 |
| 93 | 7000857 | | Engine, (2) Scania DC16/V8, 770 BHP, U.S. EPA Tier 4 Final, w/Engine Brake | 1 |
| 94 | 7000905 | | Air Cleaner, (2) Scania 770HP Tier 4f, Single Stage 8x8 | 1 |
| 95 | 7002026 | SP | Exhaust, (2) Strt Outlet, Scania Tier 4f Stainless Steel w/(2) No Smoke 2, 8x8 | 1 |
| 96 | 7001000 | | Pump, Electric Fuel Priming, w/Scania Rear Mounted Switch 8x8 | 1 |
| 97 | 7003201 | | Mudflaps, FMVSS/ECE ** | 1 |
| 98 | 7000922 | | Chassis Air, FMVSS, TAK-4 Axles 8x8 | 1 |
| 99 | 7000892 | | Fuel Tank, 150 G (568 L), Aluminum | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|--|-----|
| 100 | 7001108 | | Steering System, TAK-4 Front Axle w/Rear Steer, 120" Wide, FMVSS, 8x8 | 1 |
| 101 | 7001127 | | Central Lube System, TAK-4, Chassis Only 8x8 | 1 |
| 102 | 7002484 | SP | Acc., Remote Drains, Engine Coolant, 8x8, 1/4 Turn Valves | 1 |
| 103 | 7003109 | SP | Acc., Chassis, Fuel Filter Enclosure, 8x8 | 1 |
| 104 | 7003587 | SP | Acc., Access Panel, LH Engine Cover, 8x8 | 1 |
| 105 | 7002487 | SP | Acc., Remote Drains, Transmission, 8x8, 1/4 Turn Valves | 1 |
| 106 | 7002485 | SP | Acc., Remote Drain, Power Uniter, 8x8, 1/4 Turn Valve | 1 |
| 107 | 7002486 | SP | Acc., Remote Drain, Power Steering, 8x8, 1/4 Turn Valve | 1 |
| 108 | 7000902 | | Brakes, Disc, TAK-4 Axle, 120" Wide, No CTI, NFPA, 30 Deg Tilt, 8x8 | 1 |
| 109 | 7002963 | | Tires, Michelin 24R21 XZL, No Beadlocks 8x8 | 1 |
| 110 | 7000334 | | Tires, Spare, Michelin 24R21 XZL, Prime with Disc Brakes, No Beadlocks | 1 |
| | | | Quantity - 01 | |
| 111 | 7001476 | | Paint, Wheels, Michelin | 1 |
| | | | Paint Color, Wheels - #35 Safety Lime (FLNA 10322) | |
| 112 | 7000725 | | No Upper Ladder | 1 |
| 113 | 7002178 | SP | Acc., Treadplate, Water Tank, 8x8 | 1 |
| 114 | 7003527 | SP | Dry Chemical 550 lb (250 kg) & Halotron, 460 lb (208 kg), Non HRET, 8x8 | 1 |
| 115 | 7000718 | | Dry Chemical Fill Funnel | 1 |
| 116 | 7000721 | | Nitrogen Cylinder, 400 Cubic/Ft., Full | 1 |
| | | | Quantity - 01 | |
| 117 | 7000720 | | Spare Nitrogen Cylinder, 400 Cubic/Ft., Full | 2 |
| | | | Quantity - 02 | |
| 118 | 7003629 | SP | Carrier, Nitrogen Cylinder, Spare, w/Steel Lift Chain IPO Nylon Webbing | 1 |
| | | | Quantity - 01 | |
| 119 | 7000293 | | Argon Cylinder, 400 Cubic/Ft., Full | 1 |
| | | | Quantity - 01 | |
| 120 | 7000289 | | Argon Cylinder, Spare, 400 Cubic/Ft., Full | 2 |
| | | | Quantity - 02 | |
| 121 | 7003630 | SP | Carrier, Argon Cylinder, Spare, w/Steel Lift Chain IPO Nylon Webbing | 1 |
| | | | Quantity - 01 | |
| 122 | 7000279 | | Reservicing Kit, Halotron I, 1,000 lb (453 kg), Filled Tank & Valving | 1 |
| 123 | 7001163 | | Acc., Gauges, Nitro/Argon Cylinder Pressure, Remote | 1 |
| 124 | 7002480 | SP | Acc., Remote Drain, Halotron Tank, LH | 1 |
| 125 | 7003582 | SP | Acc., Remote Fill, Halotron, LH | 1 |
| 126 | 7003265 | SP | Cylinder Color, Argon | 2 |
| | | | Quantity - 02 | |
| | | | Argon Cylinder Color - #10 White (FLNA 4040) | |
| 127 | 7003535 | SP | Acc., Cylinder Orientation, Argon Inner, Nitrogen Outer | 1 |
| 128 | 7001498 | | Acc., Nitrogen/Argon Extended Length Hoses | 1 |
| 129 | 7002488 | SP | Lift Cradle, Steel Lift Chain IPO Nylon Webbing, (2) Cradles w/System ** | 1 |
| 130 | 7001568 | SP | Acc., Valve, Shut Off, 1/4 Turn, Halotron Tank | 1 |
| 131 | 7003264 | SP | Cylinder Color, Nitrogen | 2 |
| | | | Quantity - 02 | |
| | | | Nitrogen Cylinder Color - #837 Purple (FLNA 50653) | |
| 132 | 7000717 | | Foam System, Electronic, w/ECO Foam Test System ** | 1 |
| | | | Foam System Valve Drain Type - Ball Valve | |
| 133 | 7002493 | SP | Acc.,Lockout, Foam Fill and Foam Drain Valves | 1 |
| 134 | 7002475 | SP | Acc.,Lockout, Foam System Override, EFP | 1 |
| 135 | 7002492 | SP | LH w/Pneumatic Transfer Pump, LH Interior Fill/Drain Inlet w/Bypass | 1 |
| 136 | 7001465 | SP | Foam Fill Plugs, 1.5" (38 mm) NSFHT x Type C Male Camlock w/Blind Cap | 1 |
| | | | Quantity - 01 | |
| 137 | 7000711 | | Lights, Foam Tank Level, Left & Right Exterior, No Label | 1 |
| | | | Tank Level Lights - Amber, Amber, Amber, Red | |
| 138 | 7000249 | | Structural System, 2.5" & 5" (64 mm & 127 mm) w/Prm Pmp & Fill Frm Drft, 2K Pump | 1 |
| 139 | 7000707 | | Display, Structural, Left Side Body Compartment | 1 |
| 140 | 7000234 | | Structural/Suction Cap & Plug, 2.5"&5" (64mm & 127mm) Storz w/Beaded Chain | 1 |
| 141 | 7003583 | SP | Side Discharge, (2) LH & (2) RH 2.5" w/Strl, (1) SCBA , Halotron Fill/Drain | 1 |
| 142 | 7000225 | | Discharge Caps, 2.5" (64 mm) NSFHT Female Caps w/Link Chain | 4 |
| | | | Quantity - 04 | |
| 143 | 7003061 | SP | Tank, 4,500 G (17,034 L) Water/630G (2,384 L) Foam Roof Turret, Lt Tower | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|--|-----|
| 144 | 7000220 | | Lights, Water Tank Level, Exterior, Left/Right, 8x8 Tank Level Lights - Blue, Blue, Blue, Red | 1 |
| 145 | 7000689 | | Pump, Water, Bronze, Waterous CRQB, 2,000 gpm (7,570 lpm) | 1 |
| 146 | 7002334 | | Piping, Water Fill, LH&RH, 2.5" & 4.5" (64 mm & 114 mm), w/psi gauge 8x8 | 1 |
| 147 | 7000206 | | Plugs, Water Fill, 2.5" (64 mm) NSFHT w/Link Chain Quantity - 02 | 2 |
| 148 | 7000040 | | Caps, Water Fill, 4.5" (114 mm) NSFHT w/Link Chain Quantity - 02 | 2 |
| 149 | 7002294 | | 304 Stainless Steel | 1 |
| 150 | 7001342 | SP | Acc., Oil Drain-Fill, Remote, Water Pump Gear Case Lube | 1 |
| 151 | 7003032 | | Regulated Discharge, Primary, 125 gpm (473 lpm) w/Floor Mounted Roll-Out Tray Primary Preconnect Hose Length - 250 feet (76.2 meters) Primary Preconnect Hose Color - White Primary Preconnect Connection Type - 1.5 inch NPSH (National Pipe Straight Hose) Primary Preconnect Handline Nozzle - Arkon Assault 4863 125 gpm (473 l/min) | 1 |
| 152 | 7002501 | SP | Automatic Activation, Preconnect Handline, Legacy Striker Style | 1 |
| 153 | 7003041 | | No Preconnect Handline, Secondary ** | 1 |
| 154 | 7000642 | | No Preconnect Activation | 1 |
| 155 | 7003560 | SP | Acc., Preconnect Compartment, (2) Tilt Trays, 8x8 | 1 |
| 156 | 7002476 | SP | Acc., Preconnect Compartment, Storage Only, 8x8 | 1 |
| 157 | 7002449 | | Low Attack, Elkhart Scorpion Flow Rate, Lower Discharge - 625/1,250 gpm (2,365/4,731 lpm) Scorpion | 1 |
| 158 | 7002443 | | Williams Ranger, Non-Air Aspirating (NASP) Hydrochem, Scorpion ** | 1 |
| 159 | 7003009 | | Bumper Turret Lighting, JW Speaker 7250S, 5"x7" (127x178mm) LED Lower Discharge Light Quantity - One (1) JW Speaker model 7250S | 1 |
| 160 | 7002866 | | Elkhart Brass Scorpion Flow Rate, Upper Discharge - 625/1,250 gpm (2,366/4,732 lpm) Scorpion | 1 |
| 161 | 7002864 | | Williams Ranger, Non-Air Aspirating (NASP) Hydrochem, Scorpion | 1 |
| 162 | 7003014 | | Roof Turret Lighting, JW Speaker 7250S, 5"x7" (127x178mm) LED Upper Discharge Light Quantity - One (1) JW Speaker model 7250S | 1 |
| 163 | 7001482 | | Lower Discharge Left Side, Upper Discharge Right Side | 1 |
| 164 | 7003538 | | Platform, Roof Turret or HRET, 500 lb. Dry Chemical & 460 lb. Halotron, 8x8 | 1 |
| 165 | 7002958 | | Nozzles, Undertruck (4) Elkhart Brass 19 gpm (72 lpm) Each | 1 |
| 166 | 7000795 | | Standard Compartment Component, Gortite Aluminum Roller Shutters | 1 |
| 167 | 7000794 | | Compartment Matting, PVC Rubber Matting, All Floors and Shelves | 1 |
| 168 | 7000793 | | Rear Access, Vertical Rear Access Ladder | 1 |
| 169 | 7000554 | | Rear Body Doors, Rollup Doors With Level Lights | 1 |
| 170 | 7003542 | SP | Reel, Electric, 200' (60m) x .5" (12mm) 12/3-20A Cord, Top Mtd, w/Tilt Tool Tray | 1 |
| 171 | 7000196 | | Reel, Halotron, 150' (45m) x 1" (25mm) Hose & Nozzle w/Rollers | 1 |
| 172 | 7002929 | SP | (1) Roll-Out Floor Mount Hose Storage Tray, (1) Roll-Out Height Adjustable Shelf | 1 |
| 173 | 7000661 | | No Shelves | 1 |
| 174 | 7002590 | | Reel, Dual Agent, Swing-Out w/Roll, 100'(30m)x1"(25mm) Hose @ 60gpm(227lpm) | 1 |
| 175 | 7002477 | SP | Acc., RH Rear Compt. Aluminum Pegboard Tool Board. 8x8 | 1 |
| 176 | 7002478 | SP | Acc., RH Front Compt. Aluminum Pegboard Tool Board. 8x8 | 1 |
| 177 | 7000856 | | RFP Location, Neenah, WI | 1 |
| 178 | 0000000 | STF | Aux. Equipment, Contract Specific | 1 |
| 179 | 7003563 | SP | Aux. Equipment, Propellant Cylinder Service Wrenches. Denver | 1 |
| 180 | 7001340 | | Inland Freight, Striker 8x8, Contract Specific ** | 1 |
| 181 | 7001391 | | Manual, Operator's, (2) Hard Copy, (2) USB Flash Drive, English | 1 |
| 182 | 7001393 | | Manual, Service/Maintenance, (2) Hard Copy, (2) USB Flash Drive, English | 1 |
| 183 | 7001392 | | Manual, Parts, (2) Hard Copy, (2) USB Flash Drive, English | 1 |
| 184 | 7001223 | | Inspection, Factory Mid-construction, Dealer Responsible for Travel Quantity - 04 | 4 |
| 185 | 7001220 | | Inspection, Factory Final, Dealer Responsible for Travel Quantity - 04 | 4 |
| 186 | 7002363 | | Tilt Table Not Required | 1 |
| 187 | 7001101 | | Training, On-Site Vehicle Familiarization, No HRET, Oshkosh Representative | 1 |
| 188 | 7000003 | | Warranty, Basic, 1 Year, Vehicle, Contract Specific | 1 |
| 189 | 7001087 | | Warranty, Engine, Scania, Basic Pro-Rated 4 Year | 1 |
| 190 | 7001091 | | Warranty, Transmission, Allison, Standard 5 Year | 1 |

| Line | Option | Type | Option Description | Qty |
|------|---------|------|---|-----|
| 191 | 7001089 | | Warranty, Pump, Waterous, Basic 5 Year | 1 |
| 192 | 7001092 | | Warranty, Water Tank, UPF, Lifetime | 1 |
| 193 | 7002504 | | Warranty, Generator, Harrison, Basic 2 year/2,000 Hours | 1 |
| 194 | 7002207 | SP | 5 Year Drive Train Warranty, Contract Specific | 1 |
| 194 | 0000000 | STF | Equipment, Mounting & Installation | 1 |
| 194 | 0000000 | STF | Training, Scania Engine | 1 |
| 195 | 7001003 | | AIRPORT CHASSIS | 1 |

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VEHICLE PERFORMANCE FIGURES/MEASUREMENTS

Balances and Clearances

The vehicle weight will be distributed as equally as practical over the axles and tires. The difference in tire load between tires on any axle will not exceed 5 percent of the average tire load for that axle. The difference in load between axles will not exceed 10 percent of the load on the heaviest axle meeting NFPA 414 requirements using the 24R21 tire size.

| | |
|---|--------------------------------|
| Approach & Departure Angles | 30 degrees |
| Inter Axle Clearance Angle | 12 degrees |
| Underbody Clearance | 22.26 inches (565 millimeters) |
| Under Axle Clearance at Differential Housing Bowl | 16.5 inches (419 millimeters) |
| Wall-to-Wall Turning Circle Diameter | 99.4 feet (30.3 meters) |

Exterior Dimensions

The overall vehicle height, length, and width of the vehicle will be consistent with the rated payload and operational performance.

| | |
|---|---------------------------------|
| Overall Length | 551 inches (14,000 millimeters) |
| Overall Width (Excluding Mirrors) | 120 inches (3,048 millimeters) |
| Overall Height (Top of Handrails Fully Laden) | 150 inches (3,800 millimeters) |

Overall vehicle height and length indicated in table is with standard height handrails and rear roof access ladder equipped

Acceleration Performance

The fully laden vehicle acceleration will be from 0-50 mph (0-80 km/h) in 20 - 25 seconds depending on vehicle configuration as well as road and wind conditions. The fully laden vehicle acceleration time will not exceed 35 seconds per NFPA 414 requirements.

Top Speed Performance

The fully laden vehicle will have a minimum top speed of 71 mph (115 km/h) on a flat, level, improved (paved) surface.

Braking Performance

The brake system will meet the following performance requirements at gross vehicle weight (fully laden):

Service Brake:

| | | |
|-----------------------------------|------------------------|------------------------------|
| Stopping Distance From | 20 mph (32 km/h) | 40 feet (12 meters) Maximum |
| Stopping Distance From | 40 mph (64 km/h) | 160 feet (49 meters) Maximum |
| Hold Fully Laden Vehicle On Grade | 50% Minimum Descending | 50% Minimum Ascending |

Emergency Brake: (Depending on vehicle configuration)

| | | |
|------------------------|------------------|------------------------------|
| Stopping Distance From | 40 mph (64 km/h) | 288 feet (88 meters) Maximum |
|------------------------|------------------|------------------------------|

Parking Brake:

| | | |
|-----------------------------------|------------------------|-----------------------|
| Hold Fully Laden Vehicle on Grade | 20% Minimum Descending | 20% Minimum Ascending |
|-----------------------------------|------------------------|-----------------------|

Suspension Performance

An off-road, high mobility Oshkosh® TAK-4®, all-wheel independent suspension system will be provided resulting in no more than 0.5 g rms acceleration at the seat of the vehicle when traversing an 8 inch (24 centimeter) half round at 35 mph (56 km/h) without causing injury to the operating personnel, loss of vehicle control, or damage to the vehicle. The design will allow the vehicle to travel safely at minimum off-road speeds of 35 mph (56 km/h). The Oshkosh® TAK-4®, Independent suspension system design will allow for a minimum of 16 inches (406 millimeters) of total wheel travel and is NFPA414 and 150/522-10E certified.

Gradeability

The vehicle will be able to:

- Ascend a smooth, dry, paved road having a 20 percent grade and maintain a speed of at least 8 mph (13 km/h).
- Ascend and descend a dry, hard surface incline having a 50 percent grade at not less than 1 mph (1.6 km/h).
- Climb a vertical wall at least 18 inches (450 millimeters) high and negotiate terrain that will deflect the opposite wheels of the truck in alternately contrary directions at least 14 inches (360 millimeters).

Dynamic and Static Stability

The vehicle will meet the following stability requirements:

| | |
|---|-------------------------------|
| Side slope stability (Tilt Table Meeting SAE J2180) | 30 degrees (58 percent grade) |
| Dynamic balance (Min. Speed on 100 foot (30 meter) Radius Circle) | 22 mph (35 km/h) |
| Capable of performing NATO double lane change at speed up to | 50 mph (80 km/h) |

Environmental Conditions

The vehicle will be capable of withstanding the following conditions without detrimental effect to the operation:

- Dust particles, as encountered in desert areas
- The corrosive effects of salt fog
- Material decay from fungus and mildew
- Relative humidity up to 100 percent
- Ambient temperature ranging from 17.6 to 122 degrees Fahrenheit (-8 to 50 degrees Celsius)

- Altitude ranging from 0 to 1,968 feet (0 to 600 meters)

CHASSIS DESIGN

The vehicle frame will be designed to provide the required strength and torsional rigidity of the ARFF vehicle application. The chassis frame rail will be high strength steel alloy with a minimum yield strength of 80,000 psi (551,500 kPa) and a section modulus of 49.4 in³ (809 cm³). The main frame rails will be rectangular tube type with minimum dimensions of 12 inches (305 millimeters) by 4 inches (102 millimeters) with a minimum wall thickness of .47 inch (12 millimeters). Frames will use bolted-in crossmembers with class 10.9 metric fasteners. The minimum width to the outside of the main frame rails of an assembled chassis will be 36 inches (914 millimeters). The vehicle frame, suspension, and mounting of major components will provide for diagonally opposite wheel motion of up to 14 inches (360 millimeters) above the ground without raising the remaining wheels from the ground or causing interference. The integrity and longevity of the main frame rails will not be compromised by any welding of bracketry, suspension parts, or reinforcements.

TOWING DEVICES

Four (4) towing hooks / eyes with shackles will be attached directly to the frame rails. Two (2) will be provided at the front of the vehicle and two (2) will be provided at the rear of the vehicle.

REFERENCE PREVIOUS UNIT

This unit shall be similar to a previous ARFF unit in some aspects. The reference vehicle is: CSO125115 .

PAINT PROCESS

The vehicle shall be painted per Oshkosh Airport Products procedures and standards per PQCP-0309. All aluminum components shall be pre-treated prior to paint using an aluminum conversion coating process. All parts of the vehicle shall be cleaned, treated and primed prior to assembly and final painting. The paint applied to the vehicle shall be a durable, single color acrylic urethane.

CAB PAINT

The cab will be painted #35 Safety Lime (FLNA 10322), the fenders will be painted #35 Safety Lime (FLNA 10322), and the skidplate inserts will be painted #99 Semi-Gloss Black (FLNA 41735). Final colors and layout will be confirmed prior to vehicle construction.

BODY PAINT

The body will be painted #35 Safety Lime (FLNA 10322) , the chassis will be #35 Safety Lime (FLNA 10322) and the hubs will be painted #35 Safety Lime (FLNA 10322). Final paint colors and layout will be confirmed prior to vehicle construction.

REFLECTIVE STRIPING / GRAPHICS

Striping and lettering will be provided and installed on the vehicle. The following items will be included in the standard graphics package:

- Four (4) 16 inch (406.4 millimeter) retroreflective graphic film unit numbers; one (1) on left side and of the vehicle, one (1) on the right side of the vehicle, one (1) on the rear of the vehicle, and one (1) on the front of the vehicle

- One (1) 24 inch (609.6 millimeter) retroreflective graphic film unit number on the cab roof of the vehicle
- The airport name in up to 6 inch (152.4 millimeter) retroreflective graphic film lettering on the left side of the vehicle and on the right side of the vehicle
- Two (2) up to 24 inch (609.6 millimeter) retroreflective graphic film airport logos/insignias, one (1) on the left side and on the right side of the vehicle
- Two (2) up to 16 inch (406.4 millimeter) retroreflective graphic film fire department logos/patches, one (1) on the left side of the vehicle and on the right side of the vehicle
- An 8 inch (203.2 millimeter) retroreflective graphic film horizontal band along the left side bodywork and right side bodywork
- An 8 inch (203.2 millimeter) retroreflective graphic film horizontal band across the rear bodywork

The numbers, lettering, airport logo and/or fire department logos can have the retroreflective graphic film substituted with vinyl to align with logo complexity, marketing, airport branding requirements or end user preferences.

The graphics package will be presented to and confirmed by the end user prior to approval packet submission.

REAR CHEVRON STRIPING

There will be alternating color chevron striping located on the rear facing vertical surface of the vehicle installed on the rear fiberglass panels. The stripes will be in a "V" pattern pointing upwards with the stripes meeting at the vehicle centerline. The chevron colors will be red and yellow diamond grade retroreflective material and each stripe will be 6 inches (152 millimeters) in width.

LABELS

The vehicle will be furnished with all informational, functional and safety related labels necessary for operating the vehicle and systems as required by local requirements. The labels will be in the English language.

SWITCH LABELS

Labels will be installed above or below rocker switch banks and electronic controls to indicate the function of the switches. The labels will have a black background with white lettering in the English language. Labels will be installed on the following controls (if applicable):

Cab Interior Rocker Switch Labels

- Agent activation
- Firefighting system discharges
- AC powered lighting
- DC powered lighting
- Upper discharge functions
- Lower discharge functions
- Emergency lighting
- Cab interior lighting
- Chassis controls

- Defroster fans / heated mirror / winterization controls
- Power window controls
- Bus style door controls (if equipped)

Cab Interior Rotary Switch Labels

- Ignition / engine start
- Headlight / marker lights
- Driveline lock
- Electric mirror adjustment

Body Rocker Switch Labels

- Left structural panel function controls

FUEL CAPACITY LABEL

A label with the fuel capacity will be placed on the inside of the fuel filler door. The label will have black text and a white background stating:

FUEL CAPACITY: 165 GAL (625 L)

REMOVEABLE NUMBER PLATES

Three (3) number plates will be provided on the exterior of the vehicle painted to match the exterior vehicle paint. The number plates will have low-output LED lights to illuminate the number plates but not create too much glare. The number plates will be removeable and replaceable with another plate for the same location should the number need to be changed. The number plates will be provided in the following locations:

- The left side of the vehicle mounted to the water tank sidesheet
- The right side of the vehicle mounted to the water tank sidesheet
- The right side of the vehicle roof mounted to the cab

The number panels will have quick release pins to secure them to the mounting brackets. The quick release pins will be mechanically connected to the vehicle via coated steel cables to prevent potential FOD.

There will be a total of six (6) sets of three (3) number panels (left side, right side, roof) included with the vehicle. One (1) set of each size will be installed onto the vehicle and five (5) sets of each size will be shipped with the loose equipment.

ENGINE COVER NO STEP LABEL

A label will be provided on the left side of the engine cover on the roof of the vehicle. The label will be rectangular with a white background, red lettering stating NO STEP and a no step pictogram adjacent to the lettering. The label will be installed near the raceway cover and be easily read from the walkway over the engine enclosure.

DO NOT DRILL COMPARTMENT WARNING LABELS

A label will be provided on the rear wall of the body compartments that are adjacent to the water and foam reservoirs. The label will read "Do Not Drill" to prevent the water/foam tank from being damaged inadvertently.

UNDERCOAT RUSTPROOFING

The vehicle will have a rust proofing product applied to the interior of the chassis frame rails and square tubing of the superstructures of the vehicle made of ferrous metals where the material may be subject to corrosion from salt spray, salt fog and other external factors.

ENVIRONMENTAL CONDITIONS

The vehicle will be capable of operation in temperatures ranging from -40 C (-40 F) to 43 C (110 F).

WINTERIZATION SYSTEM

The vehicle will have an Espar compartment interior winterization system consisting of a diesel fueled heater, liquid to air heat exchangers and liquid circulating lines which will distribute heat to the lower body storage compartments. The winterization system will provide cold weather protection down to -40 C (-40 F). The heat output for the system will be minimum of 50,000 BTU/hr. The burner head will have an electronic control and diagnostic module. The burner head will feature a 24-volt DC electric ignition spark generator with electrodes, an integrated optical flame monitor and an overheat sensor. The burner will have a 24-volt DC electric combustion air blower. The diesel fuel pump will have an integrated solenoid actuated supply valve and will draw fuel from the main vehicle fuel tank. The burner exhaust will be routed to a safe location outside the vehicle.

CAB ERGONOMICS AND ACCESSORIES

Cab Features

The cab will be 3-point mounted on rubber bushings and constructed of welded aluminum extrusions, aluminum plates and bonded fiberglass panels. The design and construction of the cab will provide the best strength to weight ratio to prevent cab collapse in the event of a vehicle rollover. The cab will comply with ECE R29-3 standards/directive for occupant protection of a commercial vehicle. The cab will include gutters of sufficient size to prevent foam and water from dripping onto the windshield and side windows during turret discharge operations. The cab will have a minimum internal volume of 275 cubic feet (7.79 cubic meters) with a lateral field of vision of 254 degrees (127 degrees left and right of center), with 90 degrees upward and 25 degrees downward visibility when measured from the center of the cab. The cab ground visibility for the driver will be a minimum nearest point of 8.8 feet (2.7 meters) in front of the vehicle.

The cab will have the following features:

- Control console provided between driver and officer positions
- Dashboard console and gauges in front of driver position
- Integrated electronic control and diagnostic systems
- Interior surface coating will be a painted durable grey spatter type finish

CAB VISIBILITY

There will be a total of 7.8 m² (84 ft².) area for superior visibility of shatterproof automotive tinted safety glass installed in the cab for all windows certified to DOT and ECE 43.

The window measurements will be as follows:

1. A tinted single-piece laminated windshield 3.99 m² (42.9 ft²).
2. Tinted tempered glass upper door window with surface area of 0.66 m² (7.15 ft²).
3. Tinted tempered glass upper rear cab window with surface area of 0.41 m² (4.44 ft²).
4. Tinted tempered glass front angled lower corner window with surface area of 0.34 m² (3.7 ft²).
5. Tinted tempered glass lower door window with surface area of 0.5 m² (4.9 ft²).

CAB DOOR WINDOWS

The cab doors will be equipped with electric controlled slide type windows. There will be a control switch provided for each cab door sliding window that are accessible by the seated driver and turret operator. located on the center console.

CAB MIRRORS

The vehicle cab will be equipped with two (2) Rosco 8 inch x 17 inch (203 millimeters x 432 millimeters) door mounted combination flat and convex mirrors, one (1) located on each side of the cab. The mirrors will be heated and electrically adjustable. The horizontal rotational viewing range will be no less than 60 degrees. Electrical switches for the mirror adjustment and heating feature will be provided within easy reach of the driver.

Two (2) rectangular convex lens spotter mirrors will be provided on the A pillars of the cab structure to eliminate blind spots in front of the vehicle. One (1) mirror will be mounted on the left side of the vehicle and one (1) mirror will be mounted on the right side of the vehicle.

WINDSHIELD DELUGE SYSTEM

The cab windshield will be equipped with a deluge system. Four (4) nozzles will be spaced across the face of the cab above the windshield to distribute water. The nozzles will be constructed from brass and have a 40 degree tapered edge flat spray pattern.

The deluge system will have a 24-volt DC pump motor to draw fresh water from the vehicle water tank. Two (2) 24-volt DC valves will be incorporated in the deluge piping to supply water when activated and will automatically drain the deluge system piping when deactivated. The deluge circuit will include an in-line serviceable strainer and quarter-turn shut off valve for system maintenance. The piping drain outlet will be located behind the left front lower body compartment and will drain onto the ground.

The deluge system will be activated by a backlit momentary ON/OFF rocker switch in the cab. When switched on the windshield wipers will be activated automatically while the system is in operation. The activation switch will have a pictogram applied to the surface for identification.

CAB STEPS

There will be a heavy duty step provided below the left side and right side cab doors. The steps will include an aggressive pattern on the stepping surface to provide high traction when entering or exiting the cab. The step design will be self-cleaning so that a maximum amount of water, snow, mud or other debris can fall off or through the step. The step will be collapsible and spring loaded to allow the step to

contact obstacles and ensure that the required 30 degree angle of approach at the front of the of the vehicle and return to the default shape.

CAB DOORS

Access to the cab will be gained with a single hinged door located on each side of the vehicle that opens at least to a 90-degree angle. Woven nylon door check straps will be installed on each door to limit opening travel. The bottom of the cab door openings will include scuff plates for surface protection.

CAB DOOR INTERIOR GRAB HANDLES

The cab doors will have angled tubular grab handles with an integrated door opening mechanism. The door opening mechanism will be operable with a gloved hand and release the door latch when the interior button/lever is depressed. The door grab handles will have a durable single stage semi-gloss black paint applied to the surface.

CAB INTERIOR

The cab will be weather-tight, acoustically and thermally insulated to provide noise level not to exceed 85 dB (A) at the driver's ear position. Foam-backed black textured rubber material will cover the interior floor of the cab. The rear wall of the cab will have vinyl covered foam material to dampen noise.

CAB GRAB HANDLES

There will be grab handles covered with cushioned and slip resistant material located inside the driver's and passenger door openings to facilitate safe entry and exit from the cab. The grab handles will be placed to ensure three-point contact can be maintained.

CAB CENTER CONSOLE

The cab will have a flat top center console located in between the driver and turret operator seating positions. The upper surface of the center console will be parallel with the cab floor.

ROOF HATCH

The roof hatch will be constructed from acrylic and will be located on the left side of the cab roof above the outermost seat. The roof hatch will have two (2) manual latches to secure the hatch closed and two (2) gas shocks to hold the hatch lid in the open position.

CONSOLE MOUNTED MAP STORAGE

A storage receptacle will be installed at the rear of the center console to provide storage for maps, binders and clipboards.

FOAM SWITCH GUARD

There will be a mechanical guard provided in front of the foam activation switch in the cab.

DOOR CHECK STRAP

An additional woven nylon check strap will be installed on each cab door for a total of two (2) per door.

SUN SHADES

Two (2) sun shades will be provided in the cab.

CREW SPACE

DRIVER POSITION (CENTER)

The driver's seat will be Seats, Inc., 911 Series non-SCBA type with an integral 3-point seat belt. The seat will be air-ride adjustable, include a manual tilt seatback adjustment and a manual forward/backward slide adjustment feature. The seat cover material will be grey cloth resistant to wear and staining.

RIGHT TURRET OPERATOR SEAT POSITION

The right side turret operator/officer seat will be a Seats, Inc., 911 Series SCBA compatible with an integral red 3-point seat belt. The seatback will have a non-adjustable design and will be a slide adjustable, air-ride suspension type. The seating material will be cloth, grey in color and resistant to wear and staining.

The SCBA storage device will be an IMMI SmartDock. The SCBA holder will provide single motion insertion and hands free release of the SCBA, will use no straps and have an inertia locking feature to prevent the SCBA bottle from becoming a projectile.

LEFT INSIDE SEAT POSITION

The left inside seat will be a Seats Inc., 911 Series SCBA compatible with an integral red 3-point seat belt. The seat will have a non-adjustable design and will be fixed mounted. The seating material will be cloth, grey in color and will be resistant to wear and staining.

The SCBA storage device will be an IMMI SmartDock. The SCBA holder will provide single motion insertion and hands free release of the SCBA, will use no straps and have an inertia locking feature to prevent the SCBA bottle from becoming a projectile.

LEFT OUTSIDE SEAT POSITION

There shall be a step assembly located to the left rear of the driver seating position. The step assembly shall be constructed of formed and welded aluminum with three (3) aggressive non-slip stepping surfaces. The step assembly shall be painted to match the spatter finish interior color.

RIGHT INSIDE SEAT POSITION

There will be a storage cabinet located to the right rear of the driver seating position. The cabinet will be constructed of formed and welded aluminum and will be painted with a grey spatter type finish. The cabinet will have three (3) height adjustable shelves, four (4) 12-volt DC outlets, a clear anodized Gortite roller shutter door and white LED lighting inside the cabinet actuated by a door switch.

CAB HVAC (HEATING, VENTILATION, AIR CONDITIONING)

The cab will be heated and cooled by a dual air conditioning and heating system with two (2) separate HVAC units. The controls for the HVAC will be backlit and provided to the left of the driver seating position with:

- A rotary control for temperature control from hot to cold
- A rotary control for vent control to blend from full defrost to full vent
- A rotary control for fan speed with OFF, LOW, MEDIUM, and HIGH positions
- A button to activate air conditioning with indicator light

- A button to activate the recirculate function with indicator light

A Bergstrom HVAC unit will be incorporated into the structure of the cab dashboard and a remote Bergstrom HVAC unit will be mounted to the rear wall of the cab behind the driver seat. The dashboard HVAC unit will have an output of 22,300 BTU for cooling and 48,300 BTU for heating the remote HVAC unit will have an output of 19,000 BTU for cooling and 37,000 BTU for heating.

Air Conditioning Operation

The cab air conditioning system will be charged with HFC R134A refrigerant. The air conditioning system compressor will have a displacement of 313cc and will be driven by a serpentine belt drive mounted on the engine.

Heat Operation

The cab heating system will use a propylene glycol/water mixture. The cab heating system will be incorporated into the engine cooling system and will use coolant circulated by the engine water pump.

RADIO AND COMMUNICATIONS SYSTEMS

Radio Equipment

The vehicle will be provided with the following mobile radio equipment:

- One (1) L3 Harris XL-200M Multiband VHF 800 MHz mobile radio
- One (1) L3 Harris XL185M 800 MHz mobile radio
- One (1) Icom IC-A220 aviation transceiver with mobile mount kit, external speaker, and antenna
- Two (2) L3 Harris CH6H vehicle mounted portable radio battery chargers

The mobile radios will be installed in the center console with black conformal coat radio mounting faceplates.

Intercom System

An intercom system will be provided on the vehicle. The intercom will be a Setcom MS-1310. The system will allow for simultaneous radio traffic from two (2) separate radio sources. The left earpiece of the headset will be utilized for intercom communications and fire dispatch radio (FM) broadcast and the right earpiece of the headset will be utilized for airport radio (AM) broadcast.

The intercom system will have the following features:

- Wired to one (1) L3 Harris XL200M Multiband VHF 800 MHz mobile radio and one (1) L3 Harris XL185M 800 MHz mobile radio with selector switch for TX
- One (1) wired headset with TX/RX and intercom for the driver seating position with PTT
- One (1) wired headset with TX/RX and intercom for the turret operator seating position with PTT
- One (1) wired headset with TX/RX and intercom for the inner crew seating position with PTT

The intercom controls will be installed in the center console with black conformal coat mounting faceplates.

MAP LIGHTS

There will be two (2) 24-volt DC auxiliary map lights provided in the cab on or near the center console. One (1) light will be installed near the driver's seat and one (1) light will be installed near the officer's seat. Both map lights will each be attached to 24 inch (60.7 centimeter) long flexible mounts and will have the on/off switch located on the light head.

SIREN / PA SYSTEM

Siren Head

The vehicle will be equipped with a full function siren with public address capability. The siren will be a Whelen, Model 295SL series. The siren head will be backlit for visibility in dark or low light conditions. The siren system will include a hard wired microphone.

Siren Speaker

There will be one (1) Whelen, Model SA315 Series 100-watt speaker mounted at the lower portion of the front skidplate assembly.

CAB DEFROSTER FANS

Two (2) compact, rotary blade fans will be provided in the cab to provide additional air circulation when necessary. The fans will be located on the left and right side of the cab dashboard and will be adjustable for direction. The fans will have two (2) speeds, controlled by a toggle switch on the body of the fan. The fans will both be activated by an ON/OFF switch on the dashboard.

CAB MOUNTED FLASHLIGHTS / LANTERNS

There will be three (3) High Visibility Yellow Pelican 9415 LED lanterns with charging bases provided in the cab. Each light will have an output of 588 lumens. Two (2) will be mounted on the left side of the cab and one (1) will be mounted on the right side of the cab.

ELECTRIC/AIR HORNS

There will be dual Hadley stutter-tone air horns and a pair of high/low tone electric horns mounted underneath the cab, forward of the driver. The air horns will be activated by a switch located in the center of the steering wheel and the electric air horns will be activated by a switch at the end of the turn signal stalk.

FOOT SWITCHES

DRIVER POSITION

There will be two (2) foot switches provided in the cab at the driver seating position. One (1) foot switch will activate the vehicle air horns and one (1) foot switch will activate the siren or public address system.

TURRET OPERATOR POSITION

There will be two (2) foot switches provided in the cab at the turret operator seating position. One (1) foot switch will activate the vehicle air horns and one (1) foot switch will activate the siren or public address system.

LEFT CAB ELECTRONIC EQUIPMENT MOUNTING ARM

A Ram Mounts Severe Duty adjustable pedestal and double swing arm mount will be provided on the left side of the cab, mounted to the floor. The equipment arm will have a Ram Mounts Universal X-Grip Cradle, part number RAM-HOL-UN11U, for a 12 inch (304.8 millimeter) tablet.

A separate flush mount Kussmaul dual port USB-A and USB-C power outlet will be provided near the swing arm on the dash structure.

RIGHT CAB ELECTRONIC EQUIPMENT MOUNTING ARM

A Ram Mounts Severe Duty adjustable pedestal and double swing arm mount will be provided on the right side of the cab, mounted to the dash structure adjacent to the main display monitor. The equipment arm will have a Ram Mounts Universal X-Grip Cradle, part number RAM-HOL-UN11U, for a 12 inch (304.8 millimeter) tablet.

A separate flush mount Kussmaul dual port USB-A and USB-C power outlet will be provided near the swing arm on the dash structure.

VIDEO SYSTEMS

THERMAL IMAGING CAMERA

There will be a Teledyne FLIR, Model M364C-LR, NFPA-414 2020 compliant dual payload pan/tilt remote controlled thermal imaging camera provided on the roof of the vehicle. The thermal imaging camera will be mounted in the center of the cab structure above the windshield. The thermal imaging camera will aid the driver and crew during complete darkness, severe weather, smoky, foggy or other low visibility conditions.

The camera will have pan or azimuth movement of plus/minus 180 degrees from center and elevation movement of plus/minus 45 degrees from horizontal. The camera will have a user selectable and adjustable auto park feature and will be sealed for use in extreme outdoor environments. A mini joystick controller will be integrated into a control pad with switches for all functions provided in the center console within reach of the seated driver or officer/turret operator.

360 DEGREE NAVIGATION CAMERA

A bird's eye 360 degree camera system will be provided on the vehicle. The bird's eye view will allow the driver to see objects around the perimeter of the vehicle. The camera system will use an electronic control module (ECM) to receive picture data from four (4) wide angle color cameras placed at the front, sides, and rear of the vehicle. The control module will stitch the video feed into one (1) continuous top-down image of the area immediately surrounding the vehicle for improved scene awareness. The video from the 360 degree camera system will be displayed on the main the in-cab 12 inch (304.8 millimeter) color display.

The 360 degree camera system will default to display the bird's eye view around the perimeter of the vehicle. The image will automatically switch from the default view:

- When the turn signal switch is activated, the electronic control unit (ECM) will display the image of the camera on the respective side of which turn signal direction is activated.

- When the vehicle is shifted into reverse, the electronic control (ECM) will display the image from the rear camera to act as a back up camera during reversing operations.

FORWARD VIDEO CAMERA

A full color, compact, high resolution, shock resistant, digital camera will be installed in the cab near the windshield facing forward to capture the view in front of the vehicle. The camera will not have an audio output signal and will be for video only.

The camera will be mounted on the right side of the dashboard in front of the officer seating position.

DIGITAL VIDEO RECORDER (DVR)

A Digital Video Recorder (DVR) unit utilizing hard drive type storage with replay capability and day/date/time encoding will be provided and integrated to the camera and audio inputs as determined by the end user for simultaneous recording. The recorder will have twelve (12) inputs and will be secured and only accessible by keyed lock.

CONTROLS

All instruments, warning lights and controls relative to truck operation will be displayed to the left of the driver so that they will be useful, convenient, and visible to the driver. All instruments, warning lights and controls relative to the firefighting system will be displayed to the right of the driver for center steer so that they will be ergonomic, convenient, and visible to both the driver and the officer (turret operator). Agent activation to be clearly identified with color coded switches providing the operator immediate identification of the agents. Blue will identify water, Yellow will identify water/foam, and Purple will identify dry chemical powder.

There will be a 12 inch (304.8 mm) display provided in the center of the cab control panel to aid the driver and turret operator. The display will show pump pressure, water levels, foam levels, roof turret position as well as diagnostics with fault codes. The display utilizes the Oshkosh designed control electronics which is CAN based and uses D-Series modules. The display can be user customizable and be programmed for any language.

The following cab mounted controls will be provided as a minimum:

- Accelerator Pedal
- Air Conditioner Controls
- Brake Pedal
- Color Coded Complementary Agent / System Activation
- Rotary Differential Lock Control
- Dome Light Switch Manual / Door Activated
- Foam Concentrate Reservoir Control Valve
- Headlight Switch w/ Dimmer Control
- Heater / Defroster Controls
- Horn Control
- Master Electrical Disconnect Switch (located in engine compartment)
- Panel Lights Switch with Dimmer
- Parking Brake Control

- Power Adjustable Mirror Control
- Rotary Ignition Start/Stop Switch
- Siren Switch with Microphone
- Switches for Emergency Beacon(s) / Strobe(s)
- Switches for Exterior Lights
- Switches for Non-Emergency Amber Beacon(s) / Strobe(s)
- Tilt / Telescoping Steering Wheel Column
- Transmission Range Selector
- Turret Control
- Windshield deluge
- Windshield Wiper and Washer, column mounted
- Cup Holders
- Hand throttle

INSTRUMENTS AND WARNING LIGHTS

The following instruments and warning lights will be provided in the cab:

- Air Pressure (brake and other air-driven accessories)
- Complementary Agent Tank-Charged Indication
- Beacon / Strobe Indicator (s)
- Foam Agent Tank Level Indicator
- Water Tank Level Indicator
- Water Pump Pressure
- Low Air Pressure Warning
- Compartment Door Open Indicator
- Differential Lock Indicator
- Engine Coolant Temperature
- Engine Tachometer
- Fuel Level
- Headlight Beam Indicator
- Speedometer / Odometer
- Voltmeter
- Low Engine Coolant Audible / Visual Alarm
- Digital clock
- Low Oil Pressure / High Water Temperature Audible / Visual Alarm
- Complementary Agent System Pressure Indicator
- Two (2) 12-volt DC accessory power outlets, one (1) each side
- Two (2) 5-volt DC USB A ports, one (1) each side

LATERAL ACCELEROMETER

There will be an electronic rollover warning system provided. The system will detect "g" forces exerted on the vehicle. A display will be integrated into the vehicle dash in view of the driver and include an audible alarm. The sensor base unit will be installed in an easily accessible location within the cab.

ELECTRICAL SYSTEM

LIGHTING AND MARKING SYSTEM

The vehicle will be equipped with lighting designed and installed to be compliant with requirements of Federal Motor Vehicle Safety Standard - FMVSS 108.

CLEARANCE / MARKER LIGHTING

All clearance and marker lights will be LED type, 24-volt DC. The lights will be placed in the required locations at the front, sides and rear of the vehicle.

A minimum of four (4) amber LED side marker lights will be located on each side of the vehicle.

One (1) red LED marker light will be located on each side of the vehicle nearest to the rear.

Five (5) amber LED clearance lights will be mounted at the front of the vehicle.

A centered high mount red LED brake light will be installed at the rear of the vehicle and a series of five (5) red LED clearance lights will be mounted at the rear across the top of the bodywork.

TURN SIGNAL INDICATORS

Amber LED lights will be integrated into the headlight placed at the front bumper to function as front marker and turn signal indicator lights.

Two (2) LED light assemblies will be installed at the rear of the vehicle with integrated reverse, stop, tail and turn light functions. The amber turn signal indicators will be located at the outside edge of each assembly, the red tail/brake lights will be located in the middle and clear backup lights will be located to the inside of the housing. The turn signals will be self-cancelling by the cancel cam in the steering column.

HEADLIGHTS

There will be two (2) FMVSS/ECE compliant LED headlights installed, one (1) on each side at the front of the vehicle. The headlights will be certified for local requirements for right-hand traffic (RHT/left-hand steering). A rotary headlight activation switch will be provided on the dashboard and a high/low beam headlight dimmer switch will be provided on the steering column. The headlights will include a daytime running light (DRL) feature.

When the transmission is shifted into neutral and the parking brake is set the daytime running lights (DRL) will be deactivated automatically.

HEADLIGHT ALTERNATING FLASH

The high beam headlights will have an alternating flash emergency lighting function. An activation switch will be provided in the cab emergency lighting switch panel to control the high beam flash. The headlight flash switch will be enabled only when the ignition and master warning light switches are both in the on position. The alternating flash functions will automatically be deactivated when the headlight switch is active and the high beam headlights are activated.

GROUND LIGHTING

There will be ground lighting installed under the vehicle to illuminate the adjacent ground/work area. The ground lights will be IP 68 rated Luma Bar white LED strip lights encased in aluminum housings. There will be an ON/OFF ground lighting activation switch located in the cab and in addition, the ground lighting will only operate with the parking brake applied and transmission in neutral. The eight (8) lights will be distributed as follows:

- Two (2) under the cab doors, one (1) on each side
- Four (4) under the body compartments, two (2) on each side
- Two (2) under the rear of the vehicle, one (1) on each side aimed rearward

FOG / DRIVING LIGHTS

There will be two (2) LED driving lights and two (2) LED fog lights. The lights will be mounted one (1) of each on the left side and one (1) of each on the right side in a common recessed bezel. The fog lights will be located at the front of the vehicle directly below the headlight assemblies. The fog and drive lights will be activated by switched located on the cab dashboard to the left side of the driver.

SKIDPLATE ACCENT LIGHTS

Two (2) 24-volt DC strip lights will be installed on the front skidplates, one (1) on the left side and one (1) on the right side. The lights will operate as additional marker lights.

LICENSE PLATE ILLUMINATION

There will be one (1) license plate bracket with LED light provided on the vehicle to install a standard U.S. sized license plate. The license plate bracket with LED illumination will be installed at the left rear of the vehicle. The license plate light will be activated with the marker lights.

CAB SCENE / WORKLIGHTS

There will be two (2) 24-volt DC Rigid Industries E Series 10 in. (254 mm) LED cab worklights mounted above the windshield. The cab worklights will each have a glare shield to prevent light from entering the cab interior and will be activated from within the cab by a switch on the center console.

SCENE / WORKLIGHTS - SIDE

There will be eight (8) 24-volt DC, 30 inch (762 millimeter) LED Rigid E-Series side worklights provided on the vehicle. Four (4) lights will be installed on the left side of the vehicle and four (4) lights will be installed on the right side of the vehicle. The lights will be controlled by an on/off switch in the cab and one (1) switch, operational from ground level mounted on the side of the vehicle to control the operation of the respective lights on that side.

SCENE / WORKLIGHTS - REAR

There will be two (2) Rigid Industries 10 inch (254 mm) 24-volt DC LED worklights at the rear of the vehicle with black housings. The rear worklights will be switched from within the cab and from an external switch at the rear of the vehicle accessible from ground level. The lights will automatically illuminate when the vehicle is shifted into the reverse gear.

WARNING LIGHTS

PERIMETER WARNING LIGHTS

There will be ten (10) Whelen, 700 Series, 3 inch (76.2 millimeter) x 7 inch (178 millimeter) red LED warning lights installed around the lower perimeter of the vehicle at or near bumper height. Three (3) lights will be installed on the left side, three (3) lights will be installed on the right side, two (2) lights will be installed at the front and two (2) lights will be installed at the rear of the vehicle. The perimeter warning lights will be switched independently from upper warning lights.

STANDBY LIGHTING

There will be two (2) Whelen, Model L31HAF4, amber strobe standby beacon lights located on the roof of the vehicle. The lights will be located close to the mid-point of the water tank, one (1) on the left side and one (1) on the right side for 360-degree visibility and switched from within the cab.

FRONT UPPER WARNING LIGHTS

There will be two (2) Whelen, Freedom IV, red LED warning lightbars with clear lenses installed on the roof of the vehicle near the front of the body. One (1) light will be installed on the left side and one (1) light will be installed on the right side. The lights will be activated with the upper warning light switch in the cab.

UPPER REAR WARNING LIGHTS

There will be two (2) Whelen, Freedom IV, red LED clear lens warning lightbars installed on the roof of the engine cowling at the rear of the vehicle. One (1) lightbar will be installed on the left side and one (1) lightbar will be installed on the right side. The upper rear warning lights will be activated by a switch in the cab on the left side of the dash panel.

STANDBY LIGHTING ACTIVATION

The standby lighting will have a special activation interlock from standard. The standby lights will operate per the following conditions:

- Activate when the ignition switch is in the "ON" position and the standby light switch is in the "ON" position
- Deactivate when the upper emergency lighting is activated and the standby light switch is in the "ON" position
- Reactivate when the upper emergency lighting is deactivated and the standby light switch is in the "ON" position

The standby lights will maintain the standard "ON" / "OFF" rocker switch cover to allow the operator to deactivate lights should the need arise.

LIGHT TOWER

A Will-Burt Night Scan Powerlite Series NS 4.5-900-6 Whelen Spot/Flood 120-volt AC folding light tower will be provided on the roof of the vehicle. The horizontal surface mounted tower will be raised electrically and pneumatically.

Mounting provisions will be provided with the assembly. The installation of unit will be as follows:

- Light tower installation location: Transversely at the front of the body on the roof of the vehicle
- Floodlight and tower control location: Installed on the side of the EMS cabinet at the top, behind the driver seating position.

Design and Construction

The tower will be a series of graduated extruded aluminum tubes that nest one (1) inside another. The tower will have an extended height of approximately 15 feet (4.5 meters) above the mounting location and a stowed height of approximately 11.44 inches (29.1 centimeters) above the mounting surface. The tower will be approximately 44.56 inches (113.2 centimeters) wide by 74.44 inches (189.1 centimeters) in length. The tower will be designed to sustain the intended top load with a 125 percent safety factor and will exceed NFPA requirements of a minimum 50 mph (80 km/h) wind when in a fully raised and unguyed position. The tower will be of a compact design with a total weight of approximately 176 pounds (79.8 kilograms). The light tower will not exceed 180 pounds (82 kilograms).

The tower tubular sections will be constructed of high strength, heat-treated 6061-T6 aluminum tubes and collars. Each tube will be protected by low friction synthetic collars for smooth operation and long life. Bumpers will be designed to reduce shock on extension and retraction. All exterior surfaces will be anodized for long life and fasteners will be stainless steel for corrosion resistance.

Nesting System

The tower will have an "auto-stow" function. A double click of the mast down button will stow, retract, and shut power off to the unit. An integrated saddle assembly with synthetic, non-marring rests will be provided for the tower and flood light assembly in the nested position.

Floodlight Rotation and Tilt Operation

The tower will be equipped with a Will Burt Model RCP (remote control positioner) to control the rotation and direction of the lights in a manner that provides 360 of light coverage. The remote control positioner unit will be equipped with three (3) gear motors; one (1) for rotation and two for individual positioning of each floodlight bank (one (1) motor for left side tilting and one (1) motor for right side tilting). This feature will be designed so that the lighting may be directed in two separate locations equally and simultaneously for enhanced safety and functionality. The positioner will also rotate the floodlight assembly from zero to 350 degrees and tilt the floodlight assembly from 0 to 346 degrees.

Hand-held Remote Control

A safety yellow in color for high visibility, hand held remote control pendant, connected to a quick-disconnect, 25 foot (7.62 meter) coiled cord will be provided to control the tower. All functions of the tower will be accessible through this remote control including raising with "auto-up" ability, lowering with "auto-stow" ability, rotation and separate buttons for tilting of each floodlight bank and floodlight switching. An auxiliary power button will also be included to control optional equipment such as strobe lights or a camera that is mounted to the mast. Each button of the controller will have a corresponding LED light that provides operational feedback. An LED display that includes alphanumeric feedback will be located in the center of the controller. This display will provide operational feedback and error codes if they occur.

Pneumatic Controls

The pneumatic controls to raise and lower the tower will include an air regulator and solenoid valves. The tower will be able to be fully elevated in approximately 60 seconds. In the event of malfunction of the elevating system while the tower is in operation or being deployed, a method of limiting the rate of descent will be provided to prevent injury to personnel or damage to the equipment. The air supply for pneumatic operation of the tower will be from an external source. The installer will provide piping, shut-off valve, pressure protection valve, air compressor, auxiliary air tank(s) and additional required equipment. The complete air system will be installed in conformance to applicable NFPA and FVMSS brake standards.

Electrical Installation

The wiring harness for the floodlights, accessories, and remote control positioner will be internally routed through telescoping aluminum tubing with a highly flexible cable assembly.

24-volt DC and 120-volt AC electrical wiring will be provided with electrical connections at the tower assembly. Appropriate wiring from the circuit breaker panel for connection to the tower will be provided. The electric power to the tower and light units will automatically disconnect whenever the tower is in the nested position.

The tower operation area will be illuminated automatically by a look-up light whenever the tower is in operation. Any upward movement of the tower from the nested position will energize a red warning light in the cab and a secondary light located at the tower control area. In addition, parking brake interlocks and other equipment as required by applicable NFPA standards will be provided on the light tower installation.

Floodlight System

Six (6) Whelen Pioneer Plus™ Model # PFP2AC will be provided. The 150 watt 120-volt AC Pioneer lighthouse will incorporate Super-LED® dual flood light installed in a die-cast white powder coated aluminum housing. The PFP2AC configuration will consist of 72 white Super-LEDs with a clear optic collimator/reflector assembly and a clear non-optic polycarbonate lens. The Pioneer flood light will have 15,000 usable lumens for a total of 90,000 lumens. The lens/reflector assembly will utilize a liquid injected molded silicone gasket to be resistant to water, moisture, dust, and other environmental conditions. The hard coated lens will provide extended life/luster protection against UV and chemical stresses. The PFP2AC will be vibration resistant. The Pioneer™ PC boards will be conformal coated for additional protection. Two breathable membrane patches will be installed to the bottom of the housing to maintain a consistent internal pressure. The PFP2AC will have extended LED operation with low current consumption and low operating temperature. The fixture will measure 4.125 inches (105 millimeters) high, 14 inches (355.6 millimeters) wide and 2.5 inches (63.5 millimeters) deep.

Warranty

The tower assembly will carry a two (2) year manufacturer parts and labor warranty.

Manuals

Detailed service, parts, operating, and installation manuals will be provided by the tower manufacturer. Samples of such manuals will be provided on request. Two (2) copies of such manuals will be provided in both printed and CD ROM formats.

COMPARTMENT LIGHTING

There will be 24-volt DC Amdor white LED strip lighting provided to illuminate the interior of the compartments. The compartment lighting will be as close to the full height of the compartment opening as practical and will be switched with the opening or closing of the roller shutter door with the ignition in the "ON" position. The two (2) upper body compartments will each have two (2) 20 inch (508 millimeter) compartment lights each and the four (4) lower body compartments will have two (2) 40 inch (1,016 millimeter) compartment lights each. Each compartment will have a magnetic switch to activate and deactivate the compartment lights when the doors are opened or closed.

An indicator light in the cab will illuminate when a compartment door is not in the closed position to alert the driver. If the parking brake is released, or the vehicle shifted out of neutral an audible alarm will sound and the compartment door indicator light will flash.

POWER GENERATION

There will be a Harrison 10kW, 120/240-volt AC, 60Hz power generator on the vehicle placed in the right front lower body compartment with full and easy access for maintenance and inspection. The generator will be hydraulic type powered from an on-board PTO and hydraulic power source and be switched from within the cab. An output display and circuit breaker panel will be located adjacent to the generator. The generator will be equipped with an automatic shut-down based on the following conditions:

- Frequency Too High
- Frequency Too Low
- Invalid speed signal from integral hydraulic motor

FIXED HEIGHT SHELF

There will be one (1) fixed shelf provided in the right front lower body compartment above the hydraulic generator.

OUTLETS

There will be two (2) 120-volt AC, 20 amp NEMA 5-20R straight blade duplex receptacles provided, one (1) on each side of the vehicle mounted to the rear wall of the front lower body compartments. The outlets will have hinged weatherproof covers and be GFI protected. The receptacles will receive power from the on-board generator.

POWER STRIP POWER SUPPLY

There will be one (1) Kussmaul™, 20 amp, 120-volt AC Super auto eject shoreline inlet provided to power the two (2) 120-volt AC, 15 amp power strip outlets. The shoreline inlet will be installed on the access panel at the right rear of the vehicle. The shoreline inlet will include a yellow weatherproof flip up cover and will be labeled "CAB POWER STRIP" and "COMPARTMENT POWER STRIP".

There will be a release solenoid wired to the vehicle starter signal to automatically eject the AC connector from the shoreline inlet when the engine is cranked.

There will be a label installed near the inlet stating the following:

- Line Voltage

- Frequency
- Load(s) connected to the circuit

There will be one (1) mating connector body supplied with the loose equipment for the inlet.

Cab Power Strip

A 120-volt AC, 15 amp power strip with four (4) 15 amp straight blade connections will be mounted inside the cab EMS storage compartment at the bottom of the cabinet in the right inside crew seating position.

The power strip will receive power from the dedicated 120-volt, 20 amp Kussmaul Super auto eject at the rear of the vehicle.

Left Upper Compartment Power Strip

A 120-volt AC, 15 amp power strip with four (4) 15 amp straight blade connections will be mounted in the left upper body compartment at the mid-point of the front wall (left side when facing the compartment opening).

The power strip will receive power from the dedicated 120-volt, 20 amp Kussmaul Super auto eject at the rear of the vehicle.

POWER SUPPLIES

A 24-volt DC vehicle electrical system will be provided. The vehicle DC power will be supplied by a two (2) alternator charging system with a minimum output of 100 amps each. A warning system will be provided in the cab to indicate an alternator failure.

The electrical system will include the following:

- Four (4) group 31, 12-volt DC maintenance free, top post, flooded lead-acid batteries with a minimum of 950 CCA @ 0 degree F (each) and 190 minutes of reserve capacity @ 25 amps.
- A warning label will state that connecting incorrectly to a 12-volt DC system will cause electrical system damage.
- Color coded, heavy duty, insulated battery and ground cables with wire code numbers.
- A backlit remote voltmeter will be installed adjacent to the batteries to read the battery state of charge.
- An engine start disable switch will be provided in the left side engine compartment that will prevent the vehicle from being started from the cab during routine maintenance.
- A lockable total vehicle master electrical disconnect switch rated for full vehicle current to completely de-energize the DC electrical system after the switch.
- Unused electrical distribution connectors or components located on the walls of the upper and lower compartments will have sturdy protective coverings installed to prevent unwanted contact with stored gear.

BATTERY CHARGER

There will be a Delta Q, 120/220-volt AC, 60/50 Hz waterproof battery charger installed in the right rear engine compartment to maintain the chassis batteries. The charger will incorporate a microprocessor controller and will charge and maintain the batteries automatically.

AUXILIARY AIR COMPRESSOR

There will be an on board auxiliary air compressor provided to maintain the vehicle's air system pressure powered by the AC inlet connection. The auxiliary air compressor will be mounted on the interior of a compartment. The compressor will be the rocking piston type and will have two (2) aluminum cylinders with an inlet air filter. The air compressor drive will be a totally enclosed, 1/2 horsepower, 120-volt AC motor with capacitor start and thermal protection. The design of the air compressor will allow for minimum vibration to be transferred to the mounting surface.

ENGINE COOLANT PREHEATER

There will be two (2) 110/120-volt AC, 1500-watt engine (each) coolant preheaters with thermostats provided to heat and maintain engine temperatures of approximately 100-120 degrees Fahrenheit (38-49 degrees Celsius). There will be one (1) engine preheater installed in the cooling system of each engine. The preheaters will be connected to and powered by the shoreline inlet on the vehicle.

RECEPTACLE INLETS

There will be three (3) Kussmaul™, 20-amp, 120-volt AC shoreline inlets provided to operate the dedicated 120-volt AC circuits at right rear of the vehicle. One (1) shoreline will be connected to the battery charger and auxiliary air compressor and one (1) shoreline will be connected to each of the engine pre-heaters. The shoreline inlets will include yellow weatherproof flip up covers.

There will be a release solenoid wired to the vehicle's starter to eject the AC connectors when the engine is starting.

There will be three (3) mating connector bodies supplied with the loose equipment.

There will be a label installed near the inlets stating the following:

- Line Voltage
- Frequency
- Load(s) connected to the circuit

AUXILIARY START FEATURE

There will be 24-volt DC positive and negative posts for jump starting the vehicle provided in the right engine access compartment. The jumper studs will be located adjacent to the battery box and will have removeable color coded protective plastic covers; a red cover for the positive stud and a black cover for the negative stud.

ENGINE FAST START

Two (2) engine fast start buttons will be provided on the exterior of the vehicle. One (1) button will be installed on the left side of the cab adjacent to the cab door and one (1) will be installed at the left rear of the vehicle on the rear access panel. The buttons will be black in color, have aluminum guards to prevent inadvertent activation, and will be labeled "ENGINE FAST START".

ENGINE FAST START ACTIVATION ALARM

When either of the engine fast start buttons are activated, an alarm will sound until the ignition switch is turned to the ON position.

AIR INLET RECEPTACLE

There will be a pneumatic inlet with yellow weatherproof cover located at rear of the vehicle provided to maintain vehicle air pressure when connected to an external pressurized air source. The air inlet connection will be a quick disconnect type with a check valve installed to prevent air from bleeding out the connector when disconnected.

There will be a release solenoid wired to the vehicle's starter to automatically eject the air inlet connection when the engine is cranked. A quick release air inlet connection will be provided and shipped with the loose equipment to install on the compressed air line and the end user's facility.

AIR OUTLET RECEPTACLE

A compressed air outlet will be provided in the left upper body compartment to supply compressed air from the vehicle air reservoirs. The air outlet connector will be 0.375 inch (9.53 millimeter), size "A" female quick disconnect coupling. A 50 foot (15.24 meter) length, 0.25 inch (6.35 millimeter) inner diameter air hose will be provided with one (1) 0.375 inch (9.53 millimeter), male size "A" quick disconnect coupling and (1) ball foot air chuck. One (1) 0-150 psi dual angled foot chuck mechanical tire pressure gauge will be provided and shipped with the loose equipment.

PUMP AND ROLL

The vehicle will be capable of pump and roll operations up to 20 mph (32 km/h) on a hard, level, improved surface.

ENGINE AND ACCESSORIES

Engine

The vehicle will be equipped with two engines. The engines will be Scania DC16, 16.4-liter displacement, turbo charged, 4-stroke diesel type with 90-degree V8 cylinder configuration. The engines will be US EPA Tier 4 final emissions compliant and rated at 770 BHP (574 kW) with a peak torque of 1,950 ft-lb (2644 N-m). The engines will be equipped with electronic fuel management systems. The US EPA Tier 4 final engines will be equipped with selective catalyst reduction and exhaust gas recirculation but will not have diesel particulate filtration to meet emission standards.

An engine high idle control will be provided to maintain the engine idle at approximately 1,450 rpm when activated. The control for this system will be safety interlocked to activate only after the transmission has been placed in the neutral position and the parking brake has been set.

To supplement the conventional vehicle braking system, both engines will be equipped with an engine braking system with one ON/OFF switch located in the cab dash.

Transmission

There will be two (2) Allison, EVS-4850 Series, planetary type, fully automatic, electronic controlled seven-speed transmissions provided. The shift pad for the transmissions will be located in the cab to the left of the driver seating position with backlit switched and a gear indicator display. The transmissions will be separate from the transfer case and located at the rear for easier maintenance. The seven-speed transmissions create better gear ratios, smoother shifting, and less wear and tear on drive components. The transmission level dipstick for the left transmission will be located in the left rear

engine cover compartment and the transmission level dipstick for the right transmission will be located in the right rear engine cover compartment.

A single speed transfer case with lockable differential will be provided to supply power to both the front and rear axles. The driveline will be composed of heavy duty metal driveshafts with universal joints at each connection yoke.

Power Uniter

The vehicle driveline will include a synchronized drive component ("Power Uniter") which unites the power of the two diesel engines and two transmissions in the vehicle driveline system. During normal driving conditions, the Power Uniter will transfer and distribute power from both engines to the tandem front and rear axle sets equally. During pump and roll operation the Power Uniter will provide power from the left side, multipurpose engine and transmission to the pump. The right-side drive engine and transmission will remain connected to the vehicle driveline for motive power. A single speed transfer case will distribute motive power to the front and rear tandem axle sets. The Power Uniter will have a torque transmission capacity exceeding the maximum torque developed by the engines and transmissions and will be approved for the application and be manufactured by the chassis builder. The Digital control of the engines, transmissions and Power Uniter system will be managed through the Oshkosh Command Zone® proprietary vehicle software and distributed over the J-1939 data bus. The Power Uniter will have a temperature sensor with a high temperature warning icon in a dash monitor. There will be a power divider to allow the pump to be engaged at any speed or engine RPM and in any gear which is automatically activated for pump operation when the pump switch is engaged from the cab. When in pump mode, the pumping RPM will increase automatically only after a discharge orifice is opened, to minimize heat build-up during standby operation.

ENGINE AIR CLEANER

Each engine will be equipped with an easily replaceable canister type single stage air filter with a pleated paper element. The engine fresh air inlets will each have a bonnet installed on the intake piping to shed water and will be located on the roof of the vehicle.

EXHAUST SYSTEM

The vehicle will have a vertical stainless steel exhaust stack with a rain cap for each engine. The exhaust outlets will be located on the roof of the vehicle. Each exhaust outlet will be equipped with a Ward No Smoke 2 diesel filtration system.

FUEL PRIMING PUMP

The vehicle fuel system will be equipped with a 24-volt DC electric fuel priming pump. The activation switch will be located on the interior of the left engine compartment near the fuel filters.

MUDFLAPS

There will be a .19 inch (4.8 millimeter) thick flexible rubber mud flap provided behind each wheel well position to minimize the amount of water and road debris cast behind the vehicle by the tires. The size and positioning of the mudflaps will be FMVSS and ECE compliant.

CHASSIS AIR

The vehicle will be equipped with a Bendix, Model AD-IS, air dryer. The air dryer module will include an integrated air dryer, a reservoir, a governor, a heater and four (4) pressure protection valves. The air dryer will incorporate a spin-off replaceable desiccant cartridge.

The chassis air system will be supplied by color coded nylon tubing and will have circuit numbers printed on each section of line for easy identification. The color coding on the air lines will be as follows:

- Red will represent the primary air circuit (rear brakes)
- Green will represent the secondary air circuit (front brakes)
- Orange will represent the parking brake and cab air inlet circuit
- Yellow will represent the parking brake air delivery circuit
- Blue will designate auxiliary air circuits (air-ride seats, firefighting system air supply, chassis accessories, etc.)
- Black will represent the rear air inlet and air system drains

FUEL TANK

The fuel tanks will be constructed from formed and welded aluminum with a combined fluid capacity of 150 gallons (586 liters). The fuel tanks will have a bottom drain plug and the filler pipe will be located no higher than 60 inches (152 centimeters) from ground level. The fuel fill will be located on the right side of the vehicle behind a hinged access door with a push to open latch. The fuel tank cap will have provisions to install a lock to prevent the cap from being removed. An anti-drain vent valve will be installed on the fuel tanks to prevent fuel spillage in the event of a rollover. A fuel water separator with drain valve will be provided for the main engine.

A label will be provided near the fuel fill indicating that diesel fuel is required.

FMVSS STEERING & SUSPENSION SYSTEM

The front and rear axles will have adequate capacity to carry the fully loaded vehicle under all intended operating conditions with a GVWR of 124,000 pounds (56,246 kilograms). For vehicle handling, stability and off-runway performance, the axles will have an identical track width of 96 inches (244 centimeters).

The axles will consist of the following:

1. Front Axle - 62,000 pounds (28,123 kilograms) rating, double reduction (axle housing and wheel end), enclosed steering drive ends, bevel gear differential with driver operated differential lock.
2. Rear Axle - 62,000 pounds (28,123 kilograms) rating, double reduction (axle housing and wheel end), bevel gear differential with driver operated differential lock.

The suspension will incorporate the following design elements:

1. Upper and lower control arms will be used on each side of the axle.
2. Each axle will be equipped with an anti-roll bar for increased cornering stability.
3. Steering and non-steering axles will have an adjustable tie rod for alignment of the wheel to the center of the chassis.
4. Each wheel position will have at least one (1) coil spring and one (1) heavy-duty dual acting shock absorber.

5. All pivot and joints will be designed to meet the 20-year service life of ARFF vehicles and include only two (2) grease points per wheel and with proper Oshkosh factory alignment does not require special maintenance.

An off-road, high mobility Oshkosh TAK-4, all-wheel Independent suspension system will be provided resulting in no more than 0.5 g rms acceleration at the seat of the vehicle when traversing an 8 inch (24 centimeter) half round at 35 mph (56 km/h) without causing injury to the operating personnel, loss of vehicle control, or damage to the vehicle. The design will allow the vehicle to travel safely at minimum off-road speeds of 35 mph (56 km/h). The Oshkosh TAK-4, Independent suspension system design will allow for a minimum of 16 inches (406 millimeters) of total wheel travel.

The chassis will be equipped with power assisted FMVSS compliant steering that will permit manual steering to bring the fully loaded vehicle to a safe stop in the event of power assist failure. A tilt / telescoping steering wheel will be provided.

To facilitate a tight cornering radius, to reduce tire scrubbing on the rear tandem, and to provide maximum tire life, the rear most axle in a tandem axle configuration will be steerable and interfaced with the front axle steering by mechanical linkage. The rear steering will be active at all times regardless of vehicle speed.

CENTRAL LUBRICATION SYSTEM

An automatic lubrication system will be installed on the vehicle for the chassis. The system will include a reservoir, an electric pump, electronic control and distribution components. Lines and fittings will be routed to distribute lubrication to the appropriate bearings and wear points on the vehicle. The system will be an SKF, "KFU" compact series or approved equal and will be located in the engine compartment to be near the central maintenance area. The reservoir will have total capacity of .79 gallons (3 liters) of lubricating fluid. The pump motor will be 24-volt DC brush type with a rated speed of 1,940 RPM and will have a 3,000 hour service life minimum.

A pressure relief valve will be installed in the system to protect the pump in the event of an obstructed line. There will be an indicator light in the vehicle dash panel to illuminate in the event of a central lubrication system fault. The system electronic control will be located adjacent to the compact reservoir and pump assembly. The control will have a switch panel for operator's input and a three digit LCD display. Outputs to this display will include system preset values, functions and error codes.

REMOTE POWER STEERING DRAIN

The power steering oil reservoir will have a remote fluid drain with a manually operated drain valve. The remote drain will terminate under the vehicle and be attached to a bracket mounted securely to the chassis. The quarter turn valve will be positioned to allow for the technician to operate the valve while laying on a creeper underneath the vehicle. The end of the drain line will have a threaded connection with a plug installed to prevent accidental draining should the valve be inadvertently activated. The drain will have a label installed nearby clarifying the drain is for the power steering oil.

FUEL FILTER ENCLOSURE

A formed aluminum enclosure will be provided around the fuel filters for the main and multipurpose engines to protect them from the elements. The enclosure will have a sheet of rubber with cutouts for

the hoses at the bottom to help prevent dirt and debris from entering at the bottom. The top of the enclosure will be removable to allow servicing of the filters during maintenance operations.

REMOTE POWER STEERING DRAIN

The power unit will have a remote fluid drain with a manually operated drain valve. The remote drain will terminate under the vehicle and be attached to a bracket mounted securely to the chassis. The quarter turn valve will be positioned to allow for the technician to operate the valve while laying on a creeper underneath the vehicle. The end of the drain line will have a threaded connection with a plug installed to prevent accidental draining should the valve be inadvertently activated. The drain will have a label installed nearby clarifying the drain is for the power unit oil.

REMOTE COOLING SYSTEM DRAINS

Each engine cooling system will have a remote fluid drain with a manually operated drain valve. The remote drains will terminate under the vehicle and be attached to a bracket mounted securely to the chassis. The quarter turn valves will be positioned to allow for the technician to operate the valves while laying on a creeper underneath the vehicle. The end of the drain lines will have a threaded connection with a plug installed to prevent accidental draining should the valve be inadvertently activated. The drains will have labels installed nearby clarifying which engine the drain is for and that the drain is for coolant.

REMOTE TRANSMISSION DRAINS

Each transmission will have a remote fluid drain with a manually operated drain valve. The remote drains will terminate under the vehicle and be attached to a bracket mounted securely to the chassis. The quarter turn valves will be positioned to allow for the technician to operate the valves while laying on a creeper underneath the vehicle. The end of the drain lines will have a threaded connection with a plug installed to prevent accidental draining should the valve be inadvertently activated. The drains will have labels installed nearby clarifying which transmission the drain is for and that the drain is for transmission fluid.

ENGINE COVER ACCESS PANEL

A removable access panel on the left side the engine cover roof will be provided. The panel will extend from the left walkway handrail to the left side raceway cover and from the rear raceway cover to the handrail at the front of the engine cover. The access panel will incorporate quick release fasteners into the design to ease removal and installation.

BRAKE SYSTEM

The vehicle will be equipped with a dual air braking system including front and rear brakes with an overall vehicle tread width of 3,048 mm (120 in.) in accordance with FMVSS 121 Legislation and UNECE R13 Directive. The brakes will be disc type and equipped with automatic brake adjusters, to be clutch and worm drive type. The system will feature a dual type brake treadle valve with separate supply and delivery circuits. The system to include an all-wheel, split-circuit, powered-assisted service brake, a modulated emergency brake, and a parking brake.

There will be a 6S-6M electronic antilock brake system with a sensor and modulator at each wheel controlled by an electronic control unit (ECU). The ECU will monitor wheel speed during braking and modulate the brakes when excessive wheel slip or lockup is detected. The ECU will blend the feedback

from steering wheel ends to reduce steering wheel pull during an ABS event. There will be provision for ABS diagnostics provided.

The brake system will have the following features:

1. A Bendix AD-IS, automatic air-drying system downstream of the compressor.
2. Air brake chamber for each brake with self-adjusting mechanisms.
3. Drain on all reservoirs controlled from one (1) common location on the exterior of the vehicle.
4. Three (3) quarter-turn air drain valves will be located on the side of the vehicle below the left rear lower body compartment.
5. Visual and audible low air pressure warning device.
6. A manual parking brake valve will be installed in the cab within easy reach of the driver.

The brake system will meet the following design requirements:

1. Capacity to increase air pressure in the supply and service reservoirs from 85 to 100 psi (552 to 690 kPa) when the engine is operating at the vehicle manufacturer's RPM in less than 25 seconds.
2. Capacity for buildup of tank pressure from 0 psi (0 kPa) to the pressure required to release the spring brakes within 15 seconds relying solely on vehicle air compressor.
3. Have a volume 12 times the total combined brake chamber volume at full stroke.

The brake system will meet the following performance requirements at gross vehicle weight (fully laden):

1. Service Brake: (Depending on truck configuration)
 - A. Stopping Distance from 20 mph (32 km/h) : Maximum 33 feet (10 meters)
 - B. Stopping Distance from 40 mph (64 km/h) : Maximum 121 feet (37 meters)
 - C. Hold Fully Loaded Vehicle: Minimum 50% Grade Ascending & Descending
2. Emergency Brake: (Depending on truck configuration)
 - A. Stopping Distance from: 64 km/h (40 mph): Maximum 288 feet (86 meters)
3. Parking Brake:
 - A. Hold Fully Loaded Vehicle: Minimum 20% Grade Ascending & Descending

WHEEL AND TIRE ASSEMBLY

The vehicle will be equipped with Michelin, Model XZL, size 24R21 all-terrain radial tires. The tires will be tubeless type with full width steel belting and will be non-directional mounted on steel wheels.

SPARE TIRE

The quantity of spare tire and wheel assemblies included with the vehicle and shipped loose will be one (1) Each spare tire and wheel assembly will be composed of one (1) new and unused Michelin, Model XZL 24R21 tire and one (1) new wheel assembly. Each spare tire and wheel assembly will be interchangeable with any wheel position on the vehicle.

WHEEL PAINT COLOR

The wheels will be painted #35 Safety Lime (FLNA 10322)

UPPER MOUNTED EQUIPMENT

TOP MOUNTED LADDER

No ladder or vehicle mounted ladder storage brackets will be provided.

WATER TANK TREADPLATE WALKWAY

Diamond patterned aluminum panels will be fastened to top of the vehicle water tank in place of the standard adhesive backed grip tape. The panels will provide a durable, high grip walking surface and will be mechanically connected to the water tank structure with screws.

FIREFIGHTING SYSTEM

COMPLEMENTARY AGENT SYSTEMS

DRY CHEMICAL SYSTEM

Agent Container and Components

There will be a 550 pound (250 kilogram) capacity dry chemical extinguishing system provided. The powder vessel will be capable of holding potassium based, sodium bicarbonate or other commercially available dry chemical fire extinguishing agents. The weight held in the powder vessel will be dependent on the density of the powder chosen by the end user. The system will include piping, valves, fittings, components necessary for the storage and discharge of dry chemical complementary agent. The container will be constructed and stamped in accordance with ASME Code for Unfired Pressure Vessels. An over pressure safety valve will be integrated into the system.

The system will include the following:

- Quick acting agent system activation controls will be easily accessed by the seated driver and at least one (1) other crew position. Similar controls will be located near the agent handline (if equipped).
- Cab mounted pressure indicators will be installed that, when the system is activated, will allow the vehicle operator to determine the propellant reservoir pressure as well as the system operating pressure.
- There will be system clean out / blowdown provisions utilizing the propellant for purging dry chemical agent from all discharge piping and hose after use, saving the remaining dry chemical powder in the vessel.
- There will be a feature to "fluff" the dry chemical powder within the storage vessel to prevent caking. The procedure will not require the system to be opened or discharge any powder.
- A 24-volt DC electric winch will be provided to lift and lower the nitrogen cylinder from the ground level to the stored position. The design will be such that it will allow the operator to perform the nitrogen cylinder servicing without the need for any heavy lifting.
- Remote LED bar graph type pressure gauges will be provided in the cab on the firefighting display to indicate system operating pressure and the propellant cylinder pressure.

Propellant, Propellant Containers and Components

The propellant gas will be dry nitrogen. All propellant gas cylinders and valves will comply with United States Department of Transportation (DOT) requirements (if provided with the vehicle from the

manufacturer). The propellant gas cylinder(s) will be stored vertically and will be easily loaded and removed with the assistance of the integrated lifting device and cylinder guide. One (1) propellant cylinder cradle will be supplied with the system for vehicle storage of one (1) cylinder.

A lifting cradle constructed from formed and welded aluminum will be provided. The lifting cradle will be utilized as part of the propellant cylinder storage within the compartment. After the lifting cradle is moved into the storage position there will be a bracket installed to retain the cradle. The cradle will remain installed in the vehicle until the propellant cylinder requires service or replacement.

CLEAN AGENT SYSTEM

Agent Container and Components

There will be a clean agent extinguishing system provided. The clean agent system vessel will have a 460 pound (208 kilogram) storage capacity for Halotron fire fighting agent. The system will include all piping, valves, fittings, other components necessary for the storage and discharge of clean agent. The design of the clean agent vessel and the piping and valving will be done according to all applicable ASME code for Unfired Pressure Vessels. An over pressure safety valve will be integrated into the system.

The system will include:

Quick acting agent system activation controls will be easily accessed by the seated driver and at least one (1) other crew position. Similar controls will be located near the agent handline (if equipped).

- Cab mounted pressure indicators will be installed that, when the system is activated, will allow the vehicle operator to determine the propellant reservoir pressure as well as the system operating pressure.
- There will be system clean out / blowdown provisions utilizing the propellant for purging dry clean agent from all discharge piping and hose after use, saving the remaining clean agent in the vessel.
- A 24-volt DC electric winch will be provided to lift and lower the argon cylinder from the ground level to the stored position. The design will be such that it will allow the operator to perform the argon cylinder servicing without the need for any heavy lifting.
- Remote LED bar graph type pressure gauges will be provided in the cab on the firefighting display to indicate system operating pressure and the propellant cylinder pressure.

Propellant, Propellant Containers and Components

The propellant gas will be dry argon. All propellant gas cylinders and valves will comply with United States Department of Transportation (DOT) requirements (if provided with the vehicle from the manufacturer). The propellant gas cylinder(s) will be stored vertically and will be easily loaded and removed with the assistance of the integrated lifting device and cylinder guide. One (1) propellant cylinder lifting cradle will be supplied with the system for vehicle storage of one (1) cylinder.

A lifting cradle constructed from formed and welded aluminum will be provided. The lifting cradle will be utilized as part of the propellant cylinder storage within the compartment. After the lifting cradle is

moved into the storage position there will be a bracket installed to retain the cradle. The cradle will remain installed in the vehicle until the propellant cylinder requires service or replacement.

DRY CHEMICAL FILL FUNNEL

There will be one (1) dry chemical fill funnel provided and shipped loose with the vehicle. The funnel will measure approximately 18 in. (457 mm) high, 17 in. (432 mm) in diameter at the top opening and 3.75 in. (953 mm) at the bottom opening.

NITROGEN PROPELLANT CYLINDER

There will be one (1) full 400 ft³. (11,327 liter) when pressurized to 2,640 psi (182 bar) Nitrogen cylinder(s) provided and mounted in the truck with a pressure gauge and removable carrier. All propellant gas cylinders and valves will comply with United States Department of Transportation (DOT) requirements. Propellant gas cylinder(s) will be stored vertically and must be easily loaded and removed with the assistance of an integrated lifting device and cylinder guide.

SPARE NITROGEN CYLINDER

There will be two (2) full 400 ft³. (11,327 liter) when pressurized to 2,640 psi (182 bar) dry nitrogen propellant gas cylinder(s) with pressure gauge provided and shipped loose with the vehicle.

SPARE NITROGEN CYLINDER CARRIER

There will be one (1) spare nitrogen cylinder carrier(s) shipped loose with all parts necessary to make ready and secure a filled nitrogen cylinder for use in the vehicle.

PROPELLANT LIFTING CRADLE CHAINS

The spare auxiliary agent nitrogen propellant cradle(s) will have the standard nylon lift webbing replaced with hardened steel 2-link chain sling assemblies. Each assembly will have one (1) center master link for lifting with the winch hook and two (2) link chains bolted to each side of the cradle assembly.

ARGON PROPELLANT CYLINDER

There will be one (1) full 11,327 liter (400 ft³.) when pressurized to 182 bar (2,640 psi) Argon cylinder(s) provided and mounted in the truck with a pressure gauge and removable carrier. All propellant gas cylinders and valves will comply with United States Department of Transportation (DOT) requirements. Propellant gas cylinder(s) will be stored vertically and must be easily loaded and removed with the assistance of an integrated lifting device and cylinder guide.

SPARE ARGON PROPELLANT CYLINDER

There will be two (2) full 400 ft³. (11,327 liter) when pressurized to 2,640 psi (182 bar) Argon cylinder(s) with pressure gauge provided and shipped loose with the truck.

SPARE ARGON CYLINDER CARRIER

There will be one (1) spare argon cylinder carrier(s) shipped loose with all parts necessary to make ready and secure a filled argon cylinder for use in the vehicle.

PROPELLANT LIFTING CRADLE CHAINS

The spare auxiliary agent argon propellant cradle(s) will have the standard nylon lift webbing replaced with hardened steel 2-link chain sling assemblies. Each assembly will have one (1) center master link for lifting with the winch hook and two (2) link chains bolted to each side of the cradle assembly.

HALOTRON RESERVICING KIT

A Halotron reservicing kit will be provided which will include one (1) 1,000 lb. (453 kg) capacity vessel filled with Halotron agent. The valving, hoses and necessary components required to transfer the Halotron agent from the reservicing vessel to the vehicle Halotron agent vessel shall be provided.

NITROGEN AND ARGON CYLINDER ORIENTATION

The propellant cylinder installation will be reversed from the standard layout. The argon propellant cylinder will be installed in the innermost cradle position and the nitrogen propellant cylinder will be installed in the outermost cradle position.

PAINTED NITROGEN CYLINDERS

The two (2) nitrogen propellant cylinders will be painted purple in place #837 purple (FLNA 50653) of the standard red color.

PAINTED ARGON CYLINDERS

The two (2) argon propellant cylinders will be painted #10 white (FLNA 4040) in place of the standard red color.

CLEAN AGENT REMOTE FILL

A remote fill connection will be provided for the clean agent system in the left front lower body compartment. The fill connection will be a quick connect type with a quarter-turn valve with "T" handle and a remote mechanical clean agent gauge adjacent to the connection. The connection, gauge and valve handle will have written text labels.

Extended length hoses will be supplied for the argon and nitrogen propellant cylinders to enable easier cylinder changes. Hoses will be approximately 83" in length.

PROPELLANT LIFTING CRADLE CHAINS

The auxiliary agent propellant cradles will have the standard nylon lift webbing replaced with hardened steel 2-link chain sling assemblies. Each assembly will have one (1) center master link for lifting with the winch hook and two (2) link chains bolted to each side of the cradle assembly.

HALOTRON TANK SHUTOFF VALVES

Quarter turn shutoff valves will be provided on both Halotron tank connections. The valves will allow for the Halotron tank to be isolated should servicing of the Halotron system be required.

REMOTE NITROGEN AND ARGON PROPELLANT PRESSURE GAUGES

Two (2) remote gauges shall be provided to display the Nitrogen and Argon cylinder pressures. The pressure gauges shall allow crew members to easily determine the state of charge while the cylinders are in the stored positions on the vehicle.

HALOTRON TANK DRAIN VALVE

A remote quarter turn drain valve and quick disconnect connection will be provided on the Halotron tank in the left front lower body compartment. The valve will have a "T" handle and will be in the horizontal position when closed and will be in the vertical position when open. The handle will be clearly labeled as the the Halotron reservoir drain.

WATER AND FOAM SYSTEMS

ELECTRONIC FOAM PROPORTIONER (EFP) SYSTEM

The vehicle will be equipped with an electronic foam proportioning (EFP) system capable of metering firefighting foam at a 3% ratio within +/- 0.1% in accordance with NFPA. The system will also have provisions to easily select and change the foam proportioning rate to operate with 1%, 3%, 6%, or 8% foam concentrates. The foam proportioning rates will be selectable by the operator using the center console mounted 12 inch (304.8 millimeter) color display in the cab.

The main foam system drain will have a quarter-turn ball valve drain.

OSHKOSH ECO-EFP™ FOAM MEASUREMENT SYSTEM

A secondary surrogate foam testing system will be provided to measure the foam proportioning system performance from every discharge on the vehicle without necessitating the actual discharge of foam into the environment. The system will measure discharge flow rates for each discharge on the vehicle. The system will be fully on-board, integrated into the vehicle plumbing and the electronic foam proportioning system. It will measure both the solution and foam fluid flow rates using only water.

The system will have ability to archive foam test data for all individual discharges and provide a time and date stamp for up to (3) three years of data. An electronic display will be placed near the water pump the left rear lower body compartment. The display will provide access to view or control system settings, diagnostics functions, current and historical data and system test function. A USB port will provided to download digital data.

FOAM FILL AND DRAIN LOCKOUT

There will be a mechanical lockout provided on the foam tank fill valve and foam tank drain valve. The valves will be locked in the closed position by removeable pins with steel cable lanyards.

FOAM SYSTEM OVERRIDE LOCKOUT

There will be a mechanical lockout provided on the foam proportioning override valve handle. The lockout will have a removeable quick release pin with a coated steel cable lanyard to hold the override valve handle in the closed position.

FOAM TRANSFER PUMP

There will be a Yamada, Model NDP-20, pneumatic diaphragm foam transfer pump permanently mounted in the left rear lower body compartment. The foam transfer pump will have the capability to fill or drain the vehicle foam concentrate tank. The foam transfer pump will share the primary inlet/drain connection on the left side of the vehicle and will have a selectable valve to bypass the foam transfer pump in the compartment.

FOAM SYSTEM PIPING

There will be one (1) 1.5 inch (38 millimeter) NSFHT threaded combination foam reservoir fill/drain connection provided on the left side of the vehicle. The connection will be located on the interior of the left rear lower body compartment adjacent to the foam transfer pump to prevent exposure to freezing temperatures.

FOAM FILL/DRAIN CONNECTION

The foam fill/drain connection(s) will include one (1) 1.5 in. (38 mm) NSFHT to 1.5 in. (38 mm) Camlock male type "C" adapter(s) and mating 1.5 in. (38 mm) Camlock type "C" blind cap(s) with link chain to retain the cap(s) when removed.

FOAM TANK LEVEL LIGHTS

There will be four (4) LED foam tank level indicator lights provided on the upper exterior of the left side and right side of the vehicle. The level lights will be vertically stacked and will include the following colors top to bottom:

amber, amber, amber, red

STRUCTURAL FIRE FIGHTING SYSTEM AND CONTROL PANEL

There will be a Class "A" structural firefighting system capable of 1,000 gpm (3,785 lpm) discharge with fill from draft feature and priming pump provided. All primary pump suction, controls and operator panel will be located in the left rear lower body compartment with a roll-up door for easy access. One (1) 6 inch (152 millimeter) NPT male pump suction inlet connection equipped with a .25 inch (6.35 millimeter) strainer will be installed in the left rear lower body compartment. A mating cap will be provided that will be capable of withstanding pressures of 500 psi (34.5 bar). A manually operated 2.5 inch (64 millimeter) pump suction inlet connection will be installed in the left rear lower body compartment. The pump suction inlet connection types will be described later in this specification.

STRUCTURAL PANEL DISPLAY

A pump operator's station with LCD display and switch panel will be provided in the left rear lower body compartment. The panel will include at a minimum the following gauges:

- Engine tachometer gauge
- Pump discharge pressure gauge
- Pump suction pressure gauge
- Engine oil pressure gauge
- Engine coolant temperature gauge
- Water tank level gauge
- Foam tank level gauge

The following functions and devices will be provided as part of the structural panel:

- Manually adjustable pilot relief valve with strainer
- A mechanical switch to control the operation of the priming pump (if equipped)
- Structural panel activation switch
- Water tank valve open / closed switch

- A means of selecting water or foam induction for discharge
- Pressure governor / Engine RPM control
- Increase / Decrease hand throttle or system pressure switch
- Preset / Idle switch
- Panel illumination
- Flush mode activation switch
- Red emergency engine shutdown switch

STRUCTURAL PUMP SUCTION INLETS

LARGE DIAMETER INLET

The left large diameter pump suction inlet will have a 5 inch (127 millimeter) Storz connection with blind cap. The blind cap will have a beaded chain tether.

SMALL DIAMETER INLET

The small diameter pump suction inlet will have a 2.5 inch (64 millimeter) Storz coupling with a blind cap. The blind cap will have a beaded chain tether.

DISCHARGE PIPING

There will be four (4) unregulated, manually operated, 2.5 inch (64 millimeter) structural discharges provided. Two (2) will be located in the left front lower body compartment and two (2) will be located in the right front lower body compartment. The discharges will have NSFHT threads and will each be equipped with pressure gauges and bleeder valves. Storage for one (1) SCBA cylinder will be provided on both left and right side front lower body compartments in the discharge panel adjacent to the discharges.

DISCHARGE CAPS

The four (4) 2.5 inch (64 millimeter) discharges will have NSFHT blind caps and link chain lanyards.

WATER TANK

There will be a water and foam tank constructed of UV resistant Polypropylene material provided. The minimum tank capacity will be 4,500 gallons (17,034 liters) of water and 630 gallons (2,384 liters) of foam concentrate with a top-fill opening of at least 27 inches (689 millimeters) for water and 23 inches (584 millimeters) for foam. Both reservoirs will be vented with overflow directed to the ground. The tank will be fitted with longitudinal and transverse baffles, anti-swirl baffles, a sump and isolation valve.

WATER TANK LEVEL LIGHTS

There will be four (4) LED water tank level indicator lights provided on the upper exterior of the left side and right side of the vehicle. The level lights will be vertically stacked and will include the following colors from top to bottom:

blue, blue, blue, red

WATER PUMP AND PUMP DRIVE

The water pump will be a Waterous, model CRQB (also commonly referred to as Model CR), single stage centrifugal design that meets all requirements of ICAO, NFPA 414 as well as FAA Advisory Circular 150/5220/10E. The pump will have a rated capacity of at least 2,000 gpm (7,511 lpm) at an

operating pressure of 250 psi (17 bar) with suction vacuum at the manifold inlet of 9 IN-Hg. The pump gearbox will be driven by a driveline from the truck power divider. The pump and pump transmission will have the ability to run continuously without overheat issues in ambient temperatures up 122 degrees Fahrenheit (50 degrees Celsius). The pump body will be vertically split on a single plane for easy removal of the entire impeller assembly including the bronze wear rings.

The pump will be constructed of the following materials:

- Pump Body: Lead Red Brass, UNS C83600, 30,000 psi tensile strength.
- Impeller: Silicon brass, UNS C87500, 60,000 psi tensile strength.
- Impeller Shaft: 17-4 stainless steel, 135,000 psi tensile strength.
- Wear Ring: High leaded tin bronze, UNS C93200, 35,000 psi tensile strength.

The water pump will be gravity primed from the vehicle water reservoir. The vehicle will have a water piping system allowing the pump to remain primed while the water pump is not engaged. This reduces the time to discharge water when a discharge is opened providing immediate operations and a quicker response to a user input.

The pump drive will be through a power divider to allow the pump to be engaged at any speed and in any gear, which is automatically activated for pump operation when the water pump switch is engaged from the cab.

When in pump mode, the pumping RPM will increase automatically only after a discharge orifice is opened, to minimize heat build-up during standby operation.

A pressure relief protection system will be provided to prevent over pressurization of the water piping system.

An automatic pump overheat protection system will be provided that will discharge to the ground. The pump body and gearbox will be painted in a durable red primer. The entire pump will be bench tested at the original manufacturer to include 400 psi pressure test and capacity test. A test certificate will be provided with the vehicle.

PIPING, COUPLING, CONNECTIONS AND VALVES

WATER FILL PIPING

There will be one (1) 2.5 inch (64 millimeter) NPT male and one (1) 4 inch (101.6 millimeter) NPT male water fill inlet provided on the left side of the vehicle and one (1) 2.5 inch (64 millimeter) NPT male and one (1) 4 inch (101.6 millimeter) NPT male water fill inlet provided on the right side of the vehicle. The water fill piping will be sized to permit filling in no more than 2 minutes from an 80 psi (5.5 bar) supply source. The water fill connection types for each will be defined later in this document.

The water fill piping will be constructed of welded passivated stainless steel with victaulic and threaded connections where necessary. All components in the water fill piping will be manufactured from stainless steel, brass or other corrosion resistant materials. There will be a pneumatically operated brass butterfly valve with a remotely operated pneumatic switch near the water fill valve to control the

supply of water to the tank. Each inlet will have a .75 inch (19 mm) drain port with a quarter-turn valve. The drains will each extend through the compartment floor and drain onto the ground below the body.

The left and right side water fill connections will each have one (1) glycerin filled 3.5 inch (89 millimeter) diameter round mechanical gauge reading from 0 to 200 psi (0 to 1,400 kPa) to monitor pressures within the piping during filling operations.

WATER FILL CAPS

The water fill will be provided with two (2) 2.5 inch (64 millimeter) NSFHT swivel and a 2.5 inch (64 millimeter) NSFHT blind male plug with link chain lanyard.

WATER FILL CAPS

The water fill will be provided with two (2) 4.5 inch (114.3 millimeter) NSFHT male adapter and a 4.5 inch (114.3 millimeter) NSFHT blind cap with link chain lanyard.

WATER/FOAM PIPING MATERIAL

The water and foam system piping material will be 304 stainless steel.

WATER PUMP DRIVE OIL DRAIN/FILL

A remote oil drain and oil fill port will be provided on the water pump drive case. The drain will allow for the used drive case oil to be drained under the vehicle through a bulkhead in the compartment floor. The drain connection will incorporate a removeable threaded oil drain plug. A fill port with removable cap will be provided on the water pump drive case. The fill port will allow for the new oil to be poured into the case vertically through a funnel for ease of maintenance.

PRECONNECTED HANDLINES / CROSSLAYS

PRIMARY REGULATED HANDLINE

There will be a primary regulated side discharge outlet provided in the lower portion of the left front lower body compartment adjacent to the vertical divider toward the back of the compartment. The discharge will be housed in an aluminum enclosure painted with a spatter finish to match the interior of the compartment. The primary regulated discharge will include 250 feet (76.2 meters) of white 1.75 inch (44.5 millimeter) woven soft jacketed hose in 50 foot (15.2 meter) sections with 1.5 inch (38 millimeter) NPSH (National Pipe Straight Hose) connections. The bezel color for the primary regulated discharge will match the hose color for easy identification.

The primary regulated side discharge will have a water/foam discharge of 125 gpm (473 l/min) at 100 psi (6.9 Bars) and will meet the following minimum performance parameters per NFPA 1900:

- Straight stream cast distance of 65.6 feet (20 meters)
- Dispersed pattern cast distance of 19.7 feet (6 meters)
- Dispersed pattern width of 14.8 feet (4.5 meters)

A Arkon Assault 4863 125 gpm (473 l/min) pistol grip nozzle will be provided on the end of the handline.

The primary regulated side discharge hose sections and nozzle will be shipped with the loose equipment.

PRIMARY PRECONNECT ACTIVATION

The primary preconnected handline will have automatic activation with a control switch located in the cab and in the left front lower body compartment near the handline outlet. An electro-mechanical safety interlock switch with a tether will be provided that will only allow charging of the handline after all the hose has been deployed from the hose tray. An indicator light will be provided in the cab to alert operators when the crosslay hose is fully deployed from the primary preconnected hose tray. Throttle ramp up for the pumping RPM will be accomplished automatically when the handline discharge nozzle is opened. An override throttle control will be provided for the initial charging of the primary preconnected hose should the throttle not ramp up automatically due to a kink in the soft jacketed hose or flow through the handline being too low.

SECONDARY CROSSLAY

No secondary crosslay handline will be provided.

CROSSLAY COMPARTMENT

The crosslay compartment will be configured as an open area for transverse storage of equipment and tools.

CROSSLAY COMPARTMENT

The crosslay compartment will be configured as a storage area for transverse storage of equipment and tools.

Left Side Tilt Tray

There will be a full-width, fixed height tilt down tray provided on the left side of the crosslay compartment. The roll-out tray will have a capacity of 500 lbs. (227 kg) with provisions for locking the shelf in place when stowed and bumpers to limit shelf travel in the fully deployed position. The latch will have a cable installed for one (1) handed use to deploy and stow the tray. The tray will have interior dimensions of approximately 16 inches (406 millimeters) in width and 100 inches (2,540 millimeters) in depth. The tray will be constructed of .188 inch (5 millimeter) thick formed aluminum and aluminum extrusions with welded corners. The mounting and tray will be painted with a mulitspec paint to match the compartment interior.

A PAC Trac toolboard will be installed in the center of the tilt down tray that is adjustable side to side. The toolboard will have an approximate height of 10 inches (254 millimeters) and a length of 57 inches (1,448 millimeters). The toolboard will have a natural aluminum finish as provided by the manufacturer.

Right Side Tilt Tray

There will be a full-width, fixed height tilt down tray provided on the right side of the crosslay compartment. The roll-out tray will have a capacity of 250 lbs. (113 kg) with provisions for locking the shelf in place when stowed and bumpers to limit shelf travel in the fully deployed position. The latch will have a cable installed for one (1) handed use to deploy and stow the tray. The tray will have interior dimensions of approximately 16 inches (406 millimeters) in width and 14 inches (356 millimeters) in depth. The tray will be constructed of .188 inch (5 millimeter) thick formed aluminum and aluminum extrusions with welded corners. The mounting and tray will be painted with a mulitspec paint to match the compartment interior.

LOWER DISCHARGE

LOW ATTACK BUMPER TURRET

There will be a front bumper mounted Elkhart Brass Scorpion turret installed on a low attack boom. The lower discharge will have water/foam discharge rates of 625/1,250 gpm (2,365/4,731 lpm) with a minimum straight stream cast distance of 230 feet (70 meters).

The bumper turret will have the following design and performance features:

TURRET SWEEP ASSEMBLY

The turret sweep assembly will consist of two (2) swivel joints allowing the turret to sweep in both horizontal and vertical planes. The horizontal axis rotation will allow the turret discharge to be directed at least 90 degrees to either side of center for a minimum of 180 degree horizontal sweep. The elevation axis will allow the nozzle to be elevated at least 45 degrees above the horizontal and be depressed to discharge agent within 30 feet (9 meters) of the front of the vehicle with the boom in the fully raised position.

The turret assembly will be equipped with an auto leveling feature to maintain a consistent turret discharge angle regardless of the position of the boom mechanism during raising or lowering operations. Both the horizontal and vertical drive motors will be permanent magnet type, 24-volt DC electric gear motors and will have a clutch mechanism and/or limit switches to prevent damage to the motors at rotation limits. The motors will be sealed to NEMA 4 requirements.

CONTROLS

An electronic joystick control will be provided in the cab located within easy reach of the driver and turret operator/officer seating positions with integrated switches for the following:

- Water/Foam discharge activation with LED indicator light (momentary or maintained)
- Water/Foam discharge rate with LED indicator light, if applicable
- Auxiliary agent activation with LED indicator light, if applicable
- Nozzle pattern from straight stream to fully dispersed (fog pattern)

The joystick fore/aft and left/right inputs will be used to control the movement of the turret position on the X and Y axes. The turret movement speed in the horizontal and vertical planes will be proportional to the amount of input angle applied to the joystick.

A switch panel will be installed directly behind the joystick with rocker switches for the following functions:

- Turret deploy/stow
- Turret oscillate activation
- Turret mounted floodlight activation, if applicable
- Low attack boom up/down movement activation

The rocker switches will be backlit and will be dimmable in tandem with all other cab control switch backlighting. The normal backlighting color will be white and should a malfunction occur, the switch

backlighting color will change to red to indicate there is a fault with the control or turret for the lower discharge.

LOW ATTACK BOOM DESIGN

The low attack assembly will be capable of being lowered from the stored position near bumper height to the fully lowered position with the centerline of the turret discharge approximately 24 inches (610 millimeters) above the ground. The low attack boom will utilize a 24-volt DC motor to drive a hydraulic pump when actuated. The hydraulic pump will power two (2) hydraulic cylinders to lower and raise the boom assembly. A linear potentiometer and a proximity switch will be used to determine and communicate the position of the low attack boom during operation with the vehicle firefighting system.

The turret assembly will be attached to the front bumper of the vehicle and will be mounted onto the low attack boom. The turret mounting and boom will be adequately reinforced to sustain all anticipated loads and reaction forces when the bumper discharge is activated. The design will allow the turret and nozzle to be stored in a position providing minimum protrusion from the front of the vehicle to maintain a 30 degree angle of approach.

LOWER DISCHARGE NOZZLE

NASP HYDROCHEM NOZZLE

A Williams Ranger hydrochem nozzle will be provided on the lower discharge with variable pattern control and an automatic flow mechanism. The auto flow mechanism will maintain consistent discharge pressure and flow whether in the straight stream or fully dispersed (fog) pattern. The nozzle will be a non-air aspirating (NASP) type with 24-volt DC powered electric infinitely variable pattern actuation for straight stream or fog pattern selection.

To maximize distance and accuracy of dry the chemical discharge, the dry chemical powder will be entrained within the water stream. The dry chemical agent discharge rate of the nozzle will be a minimum of 16 pounds (7 kilograms) per second.

The nozzle patterns will meet or exceed all performance requirements defined in the latest edition of NFPA-414.

LOWER DISCHARGE LIGHTING

There will be one (1) J.W. Speaker, model 7250S 24-volt DC LED spotlight(s) provided on the bumper turret. The spotlight(s) will be mounted to a bracket above the top of the turret and nozzle of the lower discharge.

The J.W. Speaker light will have a spot beam pattern with an output of 3,715 raw lumens and an output of 2,174 effective lumens. The light housing will be constructed of black polycarbonate and the lens will be clear polycarbonate.

The spotlight(s) will follow the bumper turret movements on the vertical and horizontal axes and will be controlled by a switch bank located near the bumper turret joystick.

UPPER MOUNTED DISCHARGE

ROOF TURRET

There will be a high volume Elkhart Brass Scorpion turret installed on the roof of the vehicle. The upper discharge will have a water/foam flow discharge rate of 625/1,250 gpm (2,366/4,732 lpm) with a minimum straight stream cast distance of 230 feet (70 meters).

The turret will include the following design and performance features:

TURRET SWEEP ASSEMBLY

The nozzle sweep assembly will consist of two (2) separate swivel joints allowing the nozzle to sweep in both the horizontal and vertical planes. The horizontal rotation axis will allow the nozzle to be directed at least 135 degrees to either side of center for a minimum of 270 degrees of horizontal sweep. The vertical elevation axis will allow the nozzle to be elevated at least 45 degrees above horizontal and be depressed 15 degrees below horizontal.

Both horizontal and vertical drive motors will be permanent magnet type, 24-volt DC electric gear motors and will be with a clutch mechanism and/or limit switches to prevent damage to the motors at rotation limits. The motors will be sealed to NEMA 4 requirements.

CONTROLS

An electronic joystick control will be provided in the cab located within easy reach of the driver and turret operator/officer seating positions with integrated switches for the following:

- Water/Foam discharge activation with LED indicator light (momentary or maintained)
- Water/Foam discharge rate with LED indicator light, if applicable
- Auxiliary agent activation with LED indicator light, if applicable
- Nozzle pattern from straight stream to fully dispersed (fog pattern)

The joystick fore/aft and left/right inputs will be used to control the movement of the turret position on the X and Y axes. The turret movement speed in the horizontal and vertical planes will be proportional to the amount of input angle applied to the joystick.

A switch panel will be installed directly behind the joystick with rocker switches for the following functions:

- Turret deploy/stow
- Turret oscillate activation
- Turret mounted floodlight activation, if applicable

The rocker switches will be backlit and will be dimmable in tandem with all other cab control switch backlighting. The normal backlighting color will be white and should a malfunction occur, the switch backlighting color will change to red to indicate there is a fault with the control or turret for the upper discharge.

TURRET BODY DESIGN

The turret body assembly will be made from hard anodized Elk-O-Lite aluminum alloy for long life and corrosion resistance. The turret assembly and mounting will be adequately reinforced to sustain all anticipated loads and reaction forces when discharging. The design will allow the turret to be stowed in compact a position.

UPPER DISCHARGE NOZZLE

NASP HYDROCHEM NOZZLE

A Williams Ranger hydrochem nozzle will be provided on the upper discharge with variable pattern control and an automatic flow mechanism. The auto flow mechanism will maintain consistent discharge pressure and flow whether in the straight stream or fully dispersed (fog) pattern. The nozzle will be a non-air aspirating (NASP) type with 24-volt DC powered electric infinitely variable pattern actuation for straight stream or fog pattern selection.

To maximize distance and accuracy of dry the chemical discharge, the dry chemical powder will be entrained within the water stream. The dry chemical agent discharge rate of the nozzle will be a minimum of 16 pounds (7 kilograms) per second.

The nozzle patterns will meet or exceed all performance requirements defined in the latest edition of NFPA-414.

UPPER DISCHARGE LIGHTING

There will be one (1) J.W. Speaker, model 7250S 24-volt DC light emitting diode (LED) spotlight(s) provided on the roof turret. The spotlight(s) will be mounted to a bracket above the top of the turret and nozzle of the upper discharge.

The J.W. Speaker light will have a spot beam pattern with an output of 3,715 raw lumens and an output of 2,174 effective lumens. The light housing will be constructed of black polycarbonate and the lens will be clear polycarbonate.

The spotlight(s) will follow the roof turret movements on the vertical and horizontal axes and will be controlled by a switch bank located near the roof turret joystick.

JOYSTICK LOCATION

The turret control joysticks will be located on top of the center console between the driver and turret operator seating positions. The lower discharge joystick and switch panel will be mounted on the left side of the center console, nearest the driver and the upper discharge joystick and switch panel will be mounted on the right side of the center console, nearest the turret operator.

UNDERTRUCK NOZZLES

There will be four (4) undertruck nozzles provided to discharge water/foam beneath the vehicle as well as the inner sides of the wheels and tires spaced in a pattern from the front axle to the rear axle of the chassis. The nozzles will be brass construction and will be capable of flowing 19 gpm (72 lpm) each with a total flow of 76 gpm (288 lpm). The undertruck nozzles will be activated by a switch in the cab.

BODY COMPONENTS

COMPARTMENTS

The body compartments will be weather-tight, vented and drained to allow collected water to run out under the vehicle. Each compartment will be equipped with Gortite brand roller shutter type doors. The doors will have replaceable aluminum slats with an anodized finish. The door lift bar will be constructed from round stainless steel and will have adequate room to be operated with a gloved hand. The spring loaded compartment door roller mechanism will be 3 inches (7.62 mm) in diameter to provide maximum interior space.

The vehicle will have adequate compartment space to enclose the firefighting systems and storage of rescue equipment. The body construction will include one (1) upper body compartment and two (2) lower body compartments per side for a total of three (3) on the left and three (3) on the right. The lower compartments will have minimum door opening sizes of 50 inches (127 cm) in height and 62 inches (157.4 cm) in width.

The total compartment space will be = 303.33 ft³. (8.59 m³)

The left side compartment interior dimensions will be the following:

1. Left side upper: 27 inches (685.8 mm) high x 30 inches (762 mm) wide x 28 inches (711.2 mm) deep = 13.125 ft³. (.37 m³)
2. Left side front lower: 50 inches (1,270 mm) high x 63 inches (1,600.2 mm) wide x 38 inches (965.2 mm) deep = 69.27 ft³. (1.96 m³)
3. Left side rear lower: 50 inches (1,270 mm) high x 63 inches (1,600.2 mm) wide x 38 inches (965.2 mm) deep = 69.27 ft³. (1.96 m³)

The right side compartment interior dimensions will be the following:

1. Right side upper: 27 inches (685.8 mm) high x 30 inches (762 mm) wide x 28 inches (711.2 mm) deep = 13.125 ft³. (.37 m³)
2. Right side front lower: 50 inches (1,270 mm) high x 63 inches (1,600.2 mm) wide x 38 inches (965.2 mm) deep = 69.27 ft³. (1.96 m³)
3. Right side rear lower: 50 inches (1,270 mm) high x 63 inches (1,600.2 mm) wide x 38 inches (965.2 mm) deep = 69.27 ft³. (1.96 m³)

The compartments will be fabricated from formed, welded and riveted aluminum sheet material. The interior of the compartments will be chemically pre-treated and painted with a durable grey spatter type textured finish.

COMPARTMENT MATTING

The vehicle will have matting placed in the bottom of each body compartment and the bottom of each shelf. The matting will be extruded PVC type or approved equivalent. The matting will be impervious to water or foam. The matting will afford some amount of protection for the floor finish and keep objects from direct contact with the shelving and compartment floor. The matting will allow water to flow to any drains or lowermost part of the compartment floor.

REAR ACCESS LADDER

There will be a sturdy vertical ladder attached at the center of the vehicle at the rear of the vehicle to provide access to the roof. The ladder will have a folding design so the lower most section can be stowed out of the way. The folding section will have a positive latching system with latches on both sides to keep the ladder safely in place. The ladder will be constructed from high-grip knurled aluminum material.

HANDRAILS

There will be extruded aluminum slip-resistant handrails or guardrail at all steps, walkways, and elevated workstations.

RUNNING BOARDS, STEPS, AND WALKWAYS

Running boards, step surfaces, ladder rungs, walkways, and catwalks will have anti-skid treads.

REAR ENGINE ACCESS DOORS

Walk-in access to the engine, cooling system and electrical components will be provided on each side of the vehicle by large, vertical roller shutter type doors. The doors will have aluminum slats with an anodized finish. The individual door slats will be replaceable. The opening lift bar will be constructed from stainless steel and will be an easy to open with a gloved hand. An audible alarm will activate in the cab when doors are opened and vehicle is shifted out of neutral or the parking brake released.

LEFT UPPER COMPARTMENT

Tilt Down Tray

There will be one (1) fixed height, tilt-down, slide out tray provided in the left upper body compartment. The tray will incorporate a vertical aluminum pegboard toolboard. The toolboard will be as deep and as tall as practical and will be mounted to shelf tracks within the tilt tray to allow for lateral adjustability. The toolboard and tray will be painted with a multispec paint to match the compartment interior.

The tray will be constructed of .188 inch (5 millimeter) thick formed aluminum and aluminum extrusions with welded corners. A pull cable will be provided to release the tray from the stowed position for one-handed operation and two (2) spring loaded latches will secure the tray in the stored position. The weight capacity of the tray will be 250 pounds (113 kilograms).

Cord Reel

There will be an electric cord reel provided in the left upper body compartment mounted to the ceiling equipped with 200 feet (60 meters) of 12/3 SO cable. The cord reel will be wired through a 120-volt, 20 amp GFCI circuit breaker and receive its power from the generator. A four-way roller guide will be provided for the cord reel to prevent the cord from chafing or kinking. The cord will be equipped with a rubber ball stop to prevent the cord from pulling through the roller guides during rewinding operations. The cord reel will have a 24-volt DC electric rewind motor and provisions for manual rewind. The manual rewind handle will be securely stored in the compartment near the cord reel.

RIGHT UPPER COMPARTMENT

HALOTRON REEL

There will be a Halotron hose reel floor mounted in the right upper body compartment equipped with 150 feet (45 meters) of 1.0 inch (25.4 meter) diameter booster hose. The hose reel will include a 24-volt DC electric rewind motor with manual rewind provisions and a tension device to prevent the unreeling of the hose. Roller guides will be provided to assure ease of deployment when hose is taken off the reel.

The handline nozzle will be capable of 5 - 7 pounds per second (2.3 -3.2 kilograms per second) of discharge rate of Halotron with a minimum of straight stream pattern of 25 feet (7.5 meters). A control at the reel will allow charging of the dry chemical to the handline and charging of the Halotron tank. A blow down control will be provided in the cab.

LEFT FRONT LOWER COMPARTMENT

Floor Mounted Hose Storage Tray

There will be one (1) floor mounted, roll-out tray provided in the left front lower body compartment. The shelf will be able to lock in place when in the fully stowed or fully deployed position. The tray will have a bottom that slopes downward from front to rear and will be designed to accommodate no less than 200 feet (61 meters) of 1.75 inch (44.5 millimeter) soft jacketed hose in an accordion configuration.

Height Adjustable Shelf

There will be one (1) height adjustable, roll-out shelf provided in the left front lower body compartment. The shelf will be able to lock in place when in the fully stowed or fully deployed position. The tray will be designed to accommodate no less than 50 feet (15.24 meters) of 1.75 inch (44.5 millimeter) soft jacketed hose in a reverse horseshoe configuration. A vertical divider will be placed in the shelf with an inside dimension of 12 inches (304.8 millimeters) to the outer wall of the shelf. The divider will be located on the left side of the tray when facing the compartment opening.

The front of the floor mounted tray and height adjustable shelf will be approximately 2 inches (51 millimeters) shorter than the end of the tray slides when stowed to allow room for the stored hoses to not contact the inside of the compartment roller shutter door.

RIGHT FRONT COMPARTMENT

No shelving will be provided in the right front lower body compartment.

Right Rear Compartment

Swing Out Dual Agent Hose Reel

There will be a swing out dual agent hose reel for dry chemical and water/foam discharge provided in the right rear lower body compartment. The reel will be equipped with 100 feet (30 meters) of 1 inch (25 millimeter) twinned dual agent booster hose. The reel will have detents to allow the reel to lock fully stowed in the compartment, deployed 45 degrees out toward the front of the vehicle or deployed 90 degrees out toward the front of the vehicle. The hose reel will be equipped with a 24-volt DC electric rewind motor and manual rewind provisions. The manual rewind handle will be mounted to storage brackets near the hose reel. The Williams "Hydro-Chem" pistol grip nozzle will be capable of

discharging 60 gpm (227 lpm) of water/foam solution with a minimum cast distance of 80 feet (24 meters) and a dry chemical discharge rate of 5 - 7 pounds (2.3 - 3.2 kilograms) per second. The wet agent discharge will be controlled prior to the nozzle by a manually operated, quarter-turn ball valve in the compartment. An electronic signal will ramp the vehicle to pump speed any time the reel wet agent discharge is opened when the water pump is engaged unless the vehicle is in structural firefighting mode (if equipped with a structural panel). A switch will be provided at the reel for charging of the dry chemical tank and reel powder supply valve. Blow down controls for the wet agent will be provided at the reel and blowdown for the dry chemical discharge will be controlled from the cab. Roller guides will be provided at the sides and bottom of the hose reel to assure ease of deployment when hose is taken off the reel. A tension device will be installed to prevent the unreeling of the hose.

RIGHT FRONT LOWER COMPARTMENT TOOL BOARD

A tool board will be installed on the upper portion of the back wall in the right front lower body compartment. The tool board will be sized to fit the space available from the breaker box to the rear (left side) of the compartment and as tall as practical. The tool board will be fabricated from flat peg board aluminum and mounted on stand off brackets to allow space for tool mounting hardware. The tool board will have a raw aluminum finish.

RIGHT REAR LOWER COMPARTMENT TOOL BOARD

A tool board will be installed on the upper portion of the back wall in the right rear lower body compartment. The tool board will be sized to fit the space available from the rear of the auxiliary air compressor to the propellant cylinder storage area and as tall as practical. The tool board will be fabricated from flat peg board aluminum and mounted on stand off brackets to allow space for tool mounting hardware. The tool board will have a raw aluminum finish.

AUXILIARY EQUIPMENT

To make propellant cylinder changes more convenient the following wrenches will be supplied with the vehicle:

One (1) 1/2" reversible ratcheting combination wrench. Gearwrench model 86645.

One (1) 1-1/8" long pattern combination wrench. Gearwrench model 81734.

Four (4) mounting clips will be provided. The clips will be shipped loose for mounting by the dealer or end user.

MANUALS

The manuals provided will be in a commercial format utilizing primarily line art for parts identification/assembly drawings and a combination of line art and photographs for service and operations related information. Manuals will be identified with a title page to distinguish them from one another.

WEB BASED SUPPORT

A 24-hour web-based parts and service system will be accessible via an internet browser. Features of this website will include the following:

- A user-specific, secure login

- Access to digital copies of service bulletins and technical instructions
- Access to digital copies of vehicle-specific operator and service manuals, schematics, service diagrams, and parts books
- An aftermarket parts catalog with live inventory level information
- A customer support contact page

OPERATOR'S MANUAL

Two (2) hard copies and two (2) digital copies on USB flash drive of the vehicle operator's manual will be provided in the English language. The operator's manual will provide all information required for the safe, efficient operation of the vehicle fire extinguishing systems, equipment, special attachments or auxiliary support equipment. The operator's manual will include:

- Drawings and descriptions of locations and functions for all controls and instruments
- Safety information consistent with NFPA and OSHA safety standards
- All operational checks, inspection procedures, and adjustments prior to putting the vehicle into service upon receipt from the manufacturer
- Disabled vehicle towing procedure
- Tire changing procedure
- Tie-down procedures/lashing for vehicle transport via lowboy trailer
- Step by step procedures and descriptions to operate the vehicle, firefighting systems, and auxiliary equipment
- Draining, flushing, re-servicing, etc. post operation procedures
- Operator daily maintenance inspection checklist and basic troubleshooting procedures
- Periodic and preventative maintenance schedule in hours, miles, time period, etc.

The operator's manual will contain line art drawings of the left side, right side, front, and rear of the vehicle exterior showing basic dimensions and weights. The weights provided will be total vehicle and individual axle weights when unladen (no agent, occupants or equipment).

SERVICE AND MAINTENANCE MANUAL

Two (2) hard copies and two (2) digital copies on USB flash drive of the service and maintenance manual will be provided in the English language. The manual will cover vehicle maintenance, troubleshooting and repair procedures ranging from minor to major services. The manual will identify all special tools and testing equipment for inspection, servicing and maintenance. The manual will contain:

- Performance specifications
- Tolerances
- Fluid capacities
- Current, voltage and resistance data
- Test procedures
- Illustrations and exploded views of assemblies
- Table of contents
- Alphabetical index
- Preventative maintenance schedule
- Required periodic maintenance schedule

- Lubrication points and service intervals

A set of the following schematics will be included with the service and maintenance manual:

- Full vehicle electrical diagrams in color
- Full vehicle water/firefighting system/plumbing diagrams
- Full vehicle pneumatic diagrams in color
- Full vehicle hydraulic diagrams in color

PARTS MANUAL

Two (2) hard copies and two (2) digital copies on USB flash drive of the parts manual will be provided in the English language. The parts manual will provide the necessary information to locate and identify the parts and quantities of parts/hardware of vehicle assemblies and components. The parts manual will contain:

- Exploded views of parts/assemblies/subassemblies/special equipment
- Drawings with reference numbers for part identification
- Description and quantity of each component used in an assembly
- Size, thread information, and other information of non-standard hardware (bolts, nuts, washers, etc.)
- Size, thread information, torque specifications and other information of non-standard fittings, lubricants or special components
- A numerical index

MID-CONSTRUCTION INSPECTION

A mid-construction inspection is required. four (4) representatives will be able to travel to the factory location. The dealer will coordinate and be responsible for all travel and lodging expenses.

FINAL INSPECTION

A final inspection is required. four (4) representatives will be able to travel to the factory location for an inspection. The dealer will coordinate and be responsible for all travel and lodging expenses.

VEHICLE FAMILIARIZATION TRAINING

On-site vehicle familiarization training will be provided by an Oshkosh Airport Products representative.

ALLISON TRANSMISSION WARRANTY

A five (5) year Allison transmission will be provided.

DRIVETRAIN WARRANTY

A five (5) year drivetrain warranty will be provided for the power divider and transfer case assemblies.

Notwithstanding anything to the contrary herein, Oshkosh makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Oshkosh, with respect to all such parts, components, attachments and accessories,

Oshkosh will assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Oshkosh which, in the sole judgment of Oshkosh, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and lightbulbs. Oshkosh assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Oshkosh.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced

(a) without prior written approval of the Oshkosh Customer Service Department; or

(b) at a facility which has not been approved by Oshkosh as to technical capability.

Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Oshkosh may void this warranty.

TRAINING, SCANIA ENGINE

Scania engine training will be provided by Scania dealer training center in Nebraska.

Training will consist of four (4) days for a total of four (4) maintenance technicians.

- Hotel, four (4) night
- Scania engine training
- One (1) Software program that includes one year subscription
- One (1) tool kit

LOOSE EQUIPMENT (includes mounting)

LOOSE EQUIPMENT

| Quantity | Item | Description |
|----------|---|--|
| 1 | iPad Pro 12.9" (latest generation) | Best Buy |
| 1 | GDS Locking Vehicle Dock for Apple iPad Pro 12.9" 3rd- 5th Gen (RAM-GDS-DOCKL-V2-AP24CPU) OR latest model to match iPad | Ram Mounts |
| 1 | RAM-HOL-ROTO1U Rotoview mount (99-125447) | Ram Mounts |
| 1 | DGS Hardwire USB Type-C Power Delivery Charger (RAM-GDS-CHARGE-V3FC-1U) | Ram Mounts |
| 1 | Latest Edition of Emergency Response Guidebook | Grainger |
| 2 | Vortex Optics - Diamondback HD 10 x 50 | Scheels |
| 2 | Traffic vests – Vizguard Spiewak yellow/red – Denver Fire – Lg. adjustable | Spiewak website S912 yellow red 006 303-810-8624 |
| 1 | 1 pr – Raptor Rescue Shears | Leatherman on line |
| 1 | TNT tool – TN635 6.5lb head, 35" length, 11.5 lbs. | Leatherheads Tools |
| 1 | Tire pressure gauge | Grainger 33W452 |
| 1 | Fleco C16 cable cutter | America.Felco.Com |
| 1 | Halligan – Pro Bar 36" 1pc Drop Forged | Fire Hooks PB-36 |
| 1 | Paratech - TITAN Crash Axe - 22-000120 | LN Curtis |
| 1 | 8-Pound, 36" Pick Head Axe w/Fiberglass Handle | Fire Hooks LPA-8 |
| 1 | Pry bar – 1" x 40" | Amazon Hexagonal Bar (1000M) |
| 1 | Crowbar - 36" | Fire Hooks GNPB-36 |
| 1 | Large bolt cutter – 36" length | Fire Hooks BC-36 |
| 1 | Small bolt cutter – 18" length | Fire Hooks BC-18 |
| 1 | Set of four 5-inch spanner wrenches | Red Head Brass SW2 26.39 x 4 |
| 2 | 20 Oz Black Rubber Mallet with 13-inch hardwood handle | Ebay Vaughn New |
| 2 | 2 1/2" NH Spare Hose Gaskets | Kochek G225A |
| 2 | 5-inch pressure Storz Gaskets | Kochek G508 |
| 2 | 1 1/2" NPSH Spare Hose Gaskets | Kochek G156 |
| 1 | Raytek temp. gun | RAYMT6U Global Test Supply online |
| 2 | Stinger flashlights (Streamlight Stinger DS LED HL) | Steamlight 75432 Light Only |
| 2 | Mounted Stinger flashlight chargers | Streamlight 75105 |
| 2 | Vulcan 180 LED Lantern - (Streamlight) | Streamlight 44311 With Truck Charger |
| 1 | Double male | Elkhart M-327A 2-1/2" double male adaptor (M-327-A 2.5 MNH x 2.5 MNH rocker lug Elk-O-Lite Adapters - Double Male, Hose to Hose) (PN 10720001) |
| 1 | Double female | Elkhart F-327A 2-1/2" double female adaptor (Adapter Double female Elk-O-Lite 2.5F x 2.5F rocker lug)(PN01405501) |
| 1 | 2 1/2" to 1 3/4" plate reducer | Elkhart A-327A Plate Reducer (A-327-A ELKHART Adapters A-327-A 2.5 FNH x 1.5 MNH rocker lug Elk-O-Lite Adapters - Female to Male, Hose to Hose must be NPSH threads on 1.5in Male) (PN11300LL1) |
| 1 | 5-inch supply line-(COPRO Dealer 303-219-6013) | 5" MegaFlo Breather 33' Storz I Reflect Couplings, Permatek Yellow, Stenciled with 1" black stripe at center point and the following numbering. INQUIRE FOR HOSE NUMBERING SEQUENCE |
| 1 | 3-inch supply line. Quoted by Mackenzie Gilson 11-15-2024 | #FC30X50CR25NLEZ, AAH 3x50' CPLD 2.5NH WHITE CONQUEST POLY DJ HOSE EACH SECTION WILL HAVE THE FOLLOWING MARKINGS: A 1/2" THICK SOLID LINE AT MIDPOINT OF HOSE AROUND THE CIRCUMFERENCE SEQUENTIAL HOSE NUMBERING AT BOTH ENDS OF THE HOSE, TO BE NUMBERED 18" FROM THE COUPLING ON THE HOSE IN BLOCK LETTERING 1" HIGH. THE SAME NUMBER WILL BE STAMPED ON BOTH COUPLINGS OF THE HOSE. NUMBER SEQUENCE: INQUIRE FOR NUMBERING SEQUENCE |

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| | | KEY FIRE HOSE #DP17-TRU, 1.75" TRU ID POLYESTER DOUBLE JACKET FIRE HOSE, RUBBER LINED WITH 1.5" ALUMINUM COUPLINGS NPSH, 50' LENGTH COLOR - White with 1/2" red TRACER stripe down the middle of one side of the hose KEY FIRE HOSE DOES NOT PROVIDE A 1" thick line at midpoint of hose around the circumference of the hose. Sequential hose numbering marked at both ends of the hose, male and female, to be numbered up 18 inches from the coupling on the hose in block lettering approximately 1" high. Key Hose Coupling Stamping on BOTH COUPLINGS ; Numbering: INQUIRE FOR HOSE NUMBERING SEQUENCE |
| 1 | Pre-connect – 250' of 1 3/4". The hose Tracer will be what ever color Key is using. It cant be specified Stamping is included in hose cost | |
| 1 | 1 1/8" open-end wrench | Home Depot Husky Tools |
| 1 | 24" Rubber Wheel Chocks, Reflective Strip - Pair (JHF-2001083) - SEE RQ-00106300 for supplier info | https://www.mutualscrew.com/product/24-rubber-wheel-chocks-reflective-strip-184616.cfm?source=froogle&gad_source=1&gclid=EA1aIQobChMI5_fsrYXfiQMVeUB_AB0ijQZEEAQYASABEgIkiPD_BwE |
| 1 | 18" Rubber Wheel Chocks, Reflective Strip -Pair (JHF-2001082) | https://www.mutualscrew.com/product/18-rubber-wheel-chocks-reflective-strip-184615.cfm?source=froogle&gad_source=1&gclid=EA1aIQobChMI4a-a24TfiQMVA1N_AB1zkhGNEAQYAIBEGliUfD_BwE |
| 1 | TIC in wall mounted charger – Bullard NXT Pro (NFPA compliant) | XT Wireless truck mount charger. |
| 2 | Seek FirePRO 300 Handheld Thermal Imagers | the fire store |
| 1 | DeWalt Cordless tool bag – 20V 6-tool combo kit DCK661D1M1 | Contents: Home Depot |
| 1 | Drill - DCD771 20V MAX* 1/2 in. Cordless drill/driver | Home Depot Husky Tools |
| 1 | Impact drill - DCF885 20V MAX* 1/4 in. Cordless impact driver | Home Depot |
| 1 | Circular saw - DCS393 20V MAX* 6-1/2 in. Cordless circular saw | Home Depot |
| 1 | Angle grinder - DCG412 20V MAX* 4-1/2 in. Cordless grinder | Home Depot |
| 1 | Reciprocating saw - DCS381 20V MAX* Cordless reciprocating saw | Home Depot |
| 1 | Oscillating tool - DCS356 20V MAX* XR® Brushless cordless 3-speed oscillating multi-tool | Home Depot Tool Only |
| 1 | 0 - DCB 203 20V Max Li-ion 2.0Ah battery | Home Depot |
| 1 | 0 – DCB204 20V Max Li-ion 4.0Ah battery | Home Depot |
| 1 | 0 – DCB112 Charger | Home Depot |
| 1 | Dewalt FlexVolt battery - 20V/60V Max FlexVolt 9AH (2pk) | Home Depot PN DCB609-2 |
| 1 | DCB112 Charger | Mounted in rig |
| 1 | DeWalt 18-inch Large heavy Duty Contractor Tool Bag | https://www.amazon.com/Dewalt-Large-Heavy-Contractor-Packaging/dp/B009L33NA6/ref=asc_df_B009L33NA6/?tag=hyprod-20&linkCode=df0&hvadid=692875362841&hvpos=&hvnetw=g&hvrand=15144718764748407400&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9028806&hvtargetid=pla-2281435180938&mcid=eb2b1a0d5a7a3d42bf5add12dcb7233a&hvocij=15144718764748407400-B009L33NA6-&hvexpln=73&th=1 |

EXHIBIT D



CITY PO EXHIBIT
City and County of Denver
Fleet Management
Vendor Supplied Information Data

City Unit(s) # _____

(City Use Only)

ENTER CITY PURCHASE ORDER NUMBER: _____

Example PO-00003584

The following forms and information are REQUIRED for new vehicle deliveries. If documents are not with vehicle, then vehicle delivery will be refused.

Copy of entire Purchase Order (all pages)

Original MSO (Manufacturers Statement of Origin) – is required for all vehicles except off road and construction equipment. May receive one for some off road equipment if manufacturer issues one.

Name of purchaser:

City and County of Denver

Address:

201 W. Colfax Ave. Dept. 304

Denver, CO 80202

Secured Dealer Bill of Sale (DR2407) – IN STATE ONLY – Required for on the road vehicles Such as cars, pickup[s], vans and any vehicle under 16,000 GVWR. Not needed if odometer Section is filled out and signed on MSO. Not required on vehicles over 16,000GVWR LBS.

Application for Title and Registration (DR2395) – Required for all on-road vehicles and trailers.

Verification of Vehicle Identification Number (DR2698) – Required for all vehicles coming from an out of state dealer, incomplete vehicle. I.E. Cab and Chassis.

Statement of Fact (DR2444) – Required on all vehicles with modifications to the cab and chassis. Such as a body crane, auxiliary engine, etc. The statement of fact must include the modifications made and include VIN numbers of chassis and equipment.

Special Mobile Machinery Form (DR2689) – Required on all off road and Construction equipment I.E. Front end loaders, tractors, skid steer loaders, Mowers, air compressors, motor graders, etc.

Weight slip required – (on all incomplete vehicles that are made into complete vehicle) – and all off road equipment and construction type equipment. (Front end loaders, sweepers, graders, air compressors, rollers, etc.).

Temporary License Plate – Required for all on-road vehicles. Not required for off-road Equipment.

Original Dealer Invoice – Required for all vehicles on and off the road.

Receipt or Contract for Optional Warranty – Only if spec or called out on P.O.

Shop and Parts manuals (as required) (CD or electronic form preferred) – Only if spec or show as a line item of P.O.

Standard Sales Tax Receipt for Vehicle Sales (DR0024) – IN STATE ONLY – Required for purchases to disclose the purchase amount to the state.

Dealer Signature: _____ Date: _____