

Alexis Fire Equipment Company Alexis, IL

Gentlemen:

We hereby propose to furnish, after your acceptance, approval, and proper execution of the accompanying contract, the fire apparatus as follows:

One (1) Alexis/HME Demo Mini Evo

As per specifications attached herewith.

TOTAL APPARATUS.....\$*

* Does not include any applicable taxes. Any local or state tax, if applicable, must be added to the above price.

This proposal is made subject to your acceptance within thirty (30) days from date of same. If acceptance is delayed beyond that period, we will, upon request, advise you of any increase in said amount which may be occasioned by causes beyond our control.

Respectfully submitted, ALEXIS FIRE EQUIPMENT COMPANY

By:

"QUALITY HAS NO SUBSTITUTE"



PAYMENT TERMS

The balance of the contract plus any contract alterations shall be payable upon the delivery of the finished unit.

Upon payment, the Alexis Fire Equipment Company shall furnish the purchaser a "Statement of Origin" or the necessary validated documents required for title application.

Additional payment terms available upon request.



SERVICE CENTER:

The Alexis Priority-One service team is staffed with factory trained mechanics ready to meet your service requirements. Our staff is continually working on maintaining updated EVT and ASE certification.

The Alexis Service Team is available 24 hours a day, 7 days a week for your service emergencies. We use the latest paging system for fast, efficient and reliable service.

Our service facility covers an area of approximately 14,000 square feet.

The Alexis Service Team can assist you in fire apparatus service, ambulance service, aerial device maintenance, generator and rescue tool maintenance and service, and air pack inspections. Our staff can provide our customers with a complete apparatus training program, meeting the latest training requirements.

Alexis is a single source warranty center for the following manufacturers: HME, Spartan Motors, RK Aerials, Darley, Hale, and Waterous.

Our service team has over 50 years of cumulative experience in the fire service industry. In addition, they are backed by our fabrication, electrical, and paint and finish departments. This combination of training and hands-on experience offers true reliability and dependability.

Alexis keeps detailed documentation of all repair, maintenance, and inspection performed by our personnel. With time and manpower at such a premium among many fire departments, why not allow the Alexis Service Team to set up and maintain records for your fleet?

The Alexis Service Team is committed to providing prompt and courteous service, quality products and fair pricing.

Business: <u>Alexis Fire Equipment Company</u> Contact Person: <u>Barb Lafferty</u> Location: <u>109 East Broadway Alexis, IL 61412</u> Phone: <u>800-322-2284</u>



DELIVERY:

To insure proper break-in of all drive train components while under warranty, the finished apparatus shall be delivered to the purchaser under its own power.

The apparatus shall be covered by comprehensive and liability insurance during the delivery period. The purchaser shall assume the insurance obligation on acceptance. At that time, the purchaser shall present to the manufacturer's agent a certificate of verification, showing liability, comprehensive, and collision insurance coverage.

A qualified representative shall remain in the department a sufficient length of time to demonstrate the operation, care and maintenance of the equipment to one (1) shift of personnel.



GENERAL INFORMATION:

LOCATION

The Alexis Fire Equipment facilities are located at 109 East Broadway, Alexis, Illinois 61412. We maintain a complete stock of parts and services available around the clock. We also propose to maintain parts and service for a minimum period of twenty (20) years on each apparatus which is manufactured.

NOTATION

The fact that the Alexis Fire Equipment Company is family owned and has been in the fire apparatus business since 1947 further assures the customer of our ability to manufacture quality fire apparatus by reinforcing our history and background in the field.

COMMERCIAL CHASSIS SUPPLIED BY OTHER THAN APPARATUS MANUFACTURER

A commercial chassis is being supplied by the Fire Department or HME sales representatives company. The chassis shall be shipped directly to the apparatus manufactures facility by the chassis manufacturer.

FORD F-550 CAB & CHASSIS

4x4 SD Crew Cab XL

4 side doors

Powertrain

Powerstroke 6.7L V-8 OHV direct diesel injection 32 valve intercooled turbo diesel engine * 320 amp dual alternator * 750 amp (total) 78 amp hours (Ah) (total) battery dual batteries with run down protection * 6-speed electronic SelectShift automatic transmission with overdrive, lock-up, driver selection * Part-time four-wheel drive with manual transfer case shift, manual locking hubs * Limited slip differential, driveline traction control * 4.88 axle ratio * Stainless steel exhaust

Steering and Suspension

Hydraulic power-assist re-circulating ball steering * 4-wheel disc brakes with front and rear vented discs * Firm ride suspension * Mono-beam non-independent front suspension * Front anti-roll bar * Front coil springs * HD front shocks * Rigid rear axle * Rear leaf suspension * Rear anti-roll bar * HD rear leaf springs * HD rear shocks * Front and rear 19.5" x 6.00" argent steel wheels * LT225/70SR19.5 BSW AS front and rear tires

Safety

4-wheel anti-lock braking system * Dual airbags, passenger side front-impact cancellable airbag, seat mounted driver and passenger side-impact airbags, curtain 1st and 2nd row overhead airbags * Front height adjustable seatbelts * SecuriLock immobilizer, panic alarm, security system

Comfort and Convenience

23007-0001

109 EAST BROADWAY - ALEXIS, ILLINOIS 61412 - P 800.322.2284 - F 309.482.6127 - SALES@ALEXISFIRE.COM

Air conditioning, underseat ducts * AM/FM stereo, clock, seek-scan, in-dash mounted single CD, MP3 decoder, 6 speakers, fixed antenna * Cruise control with steering wheel controls * Power door locks with 2 stage unlock, keyfob (front doors) keyless entry * 2 12V DC power outlets, retained accessory power * Analog instrumentation display includes tachometer, oil pressure gauge, engine temperature gauge, turbo/supercharger boost gauge, transmission fluid temp gauge, engine hour meter, exterior temp, systems monitor, trip odometer * Warning indicators include oil pressure, engine temperature, battery, lights on, key, low fuel, door ajar, service interval, brake fluid * Steering wheel with tilt and telescopic adjustment * Power front windows and vented rear windows with light tint, driver 1-touch down * Variable intermittent front windshield wipers * Passenger side vanity mirror * Day-night rearview mirror * Interior lights include dome light with fade, front reading lights, illuminated entry * Full overhead console with storage, glove

box, front cupholder, instrument panel bin, driver and passenger door bins, rear door bins * Upfitter switches

Exterior Features

Side impact beams, front license plate bracket, fully galvanized steel body material * Black fender flares * Black side window moldings, black front windshield molding * Black door handles * Black grille * Trailer harness * Driver and passenger power remote black heated convex spotter folding manual extendable trailer outside mirrors with turn signal indicators * Black bumpers with front tow hooks * Aero-composite halogen headlamps * Additional exterior lights include cab clearance lights, underhood light, remote activated perimeter/approach lights

Warranty

Basic	36 month/36,000 miles
Powertrain	60 month/60,000 miles
Corrosion Perforation	60 month/unlimited mileage
Roadside Assistance	60 month/60,000 miles
Diesel Engine	60 month/100.000 miles

Dimensions and Capacities

Output	300 hp @ 2,800 rpm
Torque	660 lbft. @ 1,600 rpm

GVWR	19,500 lbs.
Front GAWR	
Rear GAWR Weight	14,706 lbs.
Towing capacity	16,000 lbs.
0 1 9	

Turning radius	26.2'
Fuel tank	40.0 gal.

Emissions

50 State Emissions System

Powertrain

Engine: 6.7L OHV Power Stroke Diesel V8 Dual 78 AH Batteries. Includes clean idle decal and intelligent oil life minder. GVWR: 19,500 lb Payload Plus Upgrade Package Includes upgraded frame, upgraded springs and low deflection/high capacity. Increases max RGAWR to 14,706.

XL Value Package

Radio: AM/FM Stereo w/Single CD/MP3: Includes clock, 4-speakers and auxiliary audio input jack



Cruise Control; XL Decor Group

Power Equipment Group

Accessory Delay; Power Locks; Remote Keyless Entry; Perimeter Anti-Theft Alarm; Power Front Side Windows : Includes driver side 1-touch down.; Manual Telescoping Trailer-Tow Mirrors : Includes power heated glass, heated convex spotter mirror and integrated clearance lights/turn signals.; SecuriLock Anti-Theft Ignition. Deletes passenger-side lock cylinder.

Low Deflection Package

Includes 2-inch spacer blocks. Recommended for rear-biased loading, such as wrecker/retriever applications.

Fleet Options

XL Decor Group Snow Plow Prep Package

Interior Colors For : Primary w/XL (Super/Crew)

AS Steel

Interior and Seating

Full cloth headliner, full vinyl/rubber floor covering, plastic/rubber gear shift knob, chrome interior accents. Center armrest, cupholder and storage.

Seating capacity of 5

Driver Position

40-20-40 split-bench front seat with adjustable head restraints, center armrest with storage 4-way adjustable driver seat includes lumbar support Vinyl faced front seats with vinyl back material

Officer Position

4-way adjustable passenger seat Vinyl faced front seats with vinyl back material

Crew Seating Positions

60-40 folding rear split-bench seat with fold-up cushion, 2 fixed rear head restraints Vinyl faced rear seats with carpet back material

WHEELS

The wheels shall be steel, factory finished in an argent color.

STAINLESS WHEEL LINERS

The front and rear axles shall be equipped with stainless steel wheel liners.

TIRE PRESSURE MONITORING DEVICE



Each tire installed on the apparatus shall be equipped with a tire pressure monitoring device. The device shall consist of a valve stem cap to with an LED tire alert to indicate tire pressure conditions. The LED will flash when the tire drops 8 psi below the factory setting.

DRIVELINES

Universal joints and driveshafts shall be modified for midship pump installation using SPICER 1480 series or equal. The driveshaft slip joints shall be coated to reduce sliding friction and thrust under high torque loads. Shafts shall be balanced to prevent vibration.

GRILLE GUARD

The front of the chassis shall have a bright finished center grille guard.

CAB SIDE ENTRANCE STEPS

Beneath the cab doors a powered step shall be mounted. The step assembly shall be rated for 600 pounds on each side. The steps shall be retracted when the doors are closed, providing additional ground clearance.

ELECTRONIC SIREN

A Whelen electronic siren control, model 295SLSA1 full feature with 17 Scan-Lock siren tones including Radio Rebroadcast, Public Address, Manual, Wail, Yelp, Air Horn, Electronic Mechanical Siren tones and Piercer tones and hard wired microphone, shall be provided.

SIREN SPEAKER

Behind the grille there shall be a Whelen model SA315 100 watt siren speaker.

CAB PAINT

The cab on the vehicle shall be painted by the factory at Ford.

BATTERY CHARGER

A PRO MARINER / ON BOARD SOLUTIONS, 1240, advanced electronic 4-step battery charger/power supply with a 40 amp output shall be installed, under the driver's seat.

Since shoreline power is not always stable the charger shall be equipped with Auto-Ranging AC Input to automatically accept global voltages of 90 VAC to 270 VAC at 45-440 Hz.

Field Selectable - Use with lead/acid or gel batteries (AGM factory option). Select length of absorption charge cycle based on size of batteries.

In the 4-step charging system the charger will provide the following sequence.



Step 1: Fast Charge - Charger will deliver its maximum amperage rating to the connected batteries for the fastest charge (current regulation mode) until battery voltage is raised to 14.6V (lead acid factory setting). At this time, the ProTech will shift to step 2.

Step 2: Absorption Charge - Maximizes charge and holds voltage (voltage regulation mode) at 14.6V (lead acid factory setting) for 1 to 4 hours (selectable based on battery size), while letting the batteries determine the amount of amps they can accept. This mode creates activity in the batteries, reducing sulfate buildup, and conditions the batteries for an extended life. After the programmed 1 to 4 hours have elapsed, the ProTech will shift to step 3.

Step 3: Float Mode - A precision 13.3V (lead acid factory setting) finishing voltage that maintains each battery (step-down voltage regulation mode), which is perfect for short or long storage periods and will never overcharge your batteries. ProTech will deliver its full rated output for house loads including: lighting, electronics and pumps.

Step 4: Recycle - If there are very large loads on the battery while the charger is on, the unit will recycle to the first step, ensuring that batteries stay fully charged.

One-Year Warranty - Includes lifetime repair guarantee. Certified to - UL Marine 1236/SA

The charger shall be mounted on the ceiling of the L1 compartment.

SHORELINE AUTO-EJECT

A KUSSMAUL Super Auto Eject, model 091-55-20-120, with a yellow weatherproof cover shall be provided.

The Super Auto Eject is to be completely sealed to prevent internal contamination of the working components.

The internal switch arrangement of the Super Auto Eject shall be designed to close and open the 120-volt AC circuit after the mating connector is inserted and before the connector is removed. This design shall prevent arcing at the connector contacts to provide long life.

The electrical connection shall be provided as a 120-volt AC - 20 amp type using a NEMA 5-20P connector.

The autoeject shall be mounted high on the front exterior wall of the L1 compartment.

HYDRA TECHNOLOGY

The pump module must employ Hydra Technology. Due to the design a pump module manufactured with Hydra Technology is compact in size; massive in performance.

Each component in the module must undergo a selection and placement analysis staff engineers. Utilizing advanced 3D software the engineers goals must provide component placements for ergonomics with a completed module that produces maximum water flow with optimum versatility. Only after the complete analysis and build of the module in the computer can the build of the hardware in the shop begin.

Pump module design beginning with a foundation; cage framework assemblies that are precision manufactured from strong corrosion free heavy wall stainless steel tubing. This framework mounts to the truck frame through a mounting design complimented with iso-mount elastomer cushions. The result shall be a mounting system that



allows for the twisting movement of the truck frame without undue stress loading of the pump module.

Next assembled shall be the stainless side panels. Brushed, mirror polished or power coated the stainless steel side panels provide strength and durability. Precise engineering allows each panel to be laser machined before assembly; instead of drilling holes technicians shall spend their time on assembly techniques that provide installations that breeze through strict quality assurance.

A thorough review of the valve control placements on a control module shall result in a neat and orderly layout. Open the access door on a side control module and peer inside. The horizontal control rods appear neat and orderly. The appearance is only a portion of the requirement. The same neat and orderly appearance after countless hours of engineering design and ergonomic study provide a smooth trouble free linkage for valve operation. Another by product of the low profile control rod placement is the ability to offer ladder through the tank storage designs.

On a top control module mount valve controls are attached to the valves through high performance stainless steel aircraft type cable assemblies. Cables eliminate the inefficiencies of control rods connected to a valve. Operate a cable controlled top panel and you will feel the difference; smooth and precise across the full valve operation.

The gauge panel door shall be an expansive double wall stainless door supported by a 3/8 inch diameter hinge pin. The double wall door provides unsurpassed strength and gauge protection while thwarting the casual attempt of tinkering. Authorized servicing of the components within the door is simplified with a bolt on access panel.

Inside the access door; there shall be a clean well build appearance. Stainless steel piping, stainless steel panels, and a stainless steel framework all to provide years of trouble free service. Pipe threads are not allowed on plumbing larger than 1-1/2 inch in diameter. The pump module design shall employ Victaulic coupling connections in the pump module to save time when servicing a component. Installation of components without the use of pipe threads allows for "drop-out" maintenance of critical components without disassembly of entire piping systems. Drop in valves and manifolds with Victaulic couplings are only the start of the serviceability designed into this pump module.

Apparatus taking exception to any portion of this requirement will not be acceptable.

PUMP COMPARTMENT

For durability the pump compartment shall be constructed entirely of brushed stainless steel.

PUMP SERVICE ACCESS

The intake panels on the sides of the pump module shall be fastened with quick release latches to provide access to the pump at the intake piping area.

The floor of the crosslays shall be removable for access to the top of the pump module.

PUMP CONTROL PANEL

All pump controls and gauges shall be located at the left (street) side of the apparatus and properly identified. The layout of the pump control panel shall be ergonomically efficient and systematically organized.



All push-pull valve controls shall have quarter turn locking control rods with chrome plated zinc tee handles. Guides for the push-pull control rods shall be chrome plated zinc castings securely mounted to the pump panel. Push-pull valve controls shall be capable of locking in any position. The control rods shall pull straight out of the panel and shall be equipped with universal joints to eliminate binding.

PUMP PANEL IDENTIFICATION TAGS

The identification tag for each valve shall be recessed in the face of the control handle. All discharges shall have color-coded metal identification tags, with each discharge having its own unique color scheme. Color-coding shall include the labeling of the outlet and the drain for each corresponding discharge.

PUMP PANEL FINISH

All stainless panels used in the construction of the pump house shall have a brushed finish.

CONTROLS AND GAUGES

The following shall be provided on the pump and gauge panels in a neat and orderly fashion. The gauge panel shall include the following:

PRESSURE GOVERNOR, MONITORING, and MASTER PRESSURE DISPLAY

Fire Research InControl series TGA400-A00 pressure governor and monitoring display kit shall be installed. The kit shall include a control module, intake pressure sensor, discharge pressure sensor, and cables. The control knob shall be 2" in diameter with no mechanical stops, have a serrated grip, and a red idle push button in the center. It shall not extend more than 1-3/4" from the front of the control module. Inputs for monitored information shall be from a J1939 databus or independent sensors. Outputs for engine control shall be on the J1939 databus or engine specific wiring.

The following continuous displays shall be provided:

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

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



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

High Battery Voltage Low Battery Voltage (Engine Off) Low Battery Voltage (Engine Running) High Transmission Temperature Low Engine Oil Pressure High Engine Coolant Temperature Out of Water (visual alarm only) No Engine Response (visual alarm only)

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

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

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

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

PRESSURE GAUGES

Each line pressure gauge shall be mounted immediately above the control for the corresponding valve. The individual line *pres*sure gauges for the discharges shall be 2-1/2" in diameter with white dial face gauges with black lettering and markings. The gauges shall be a compound style gauge with a vacuum/pressure range of 0 - 400 psig.

The gauges shall be fluid filled with pulse and vibration dampening Interlube to lubricate the internal mechanisms to prevent lens condensation and to ensure proper operation to -40 degrees F. The cases shall be temperature compensated with an internal breathing diaphragm to permit fully filled cases and to allow a rigid lens with a distortion free viewing area. The gauge accuracy for the gauge shall be plus or minus 2% mid-scale, plus or minus 3% balance, per ANSI B40.1, Grade 1A.

To prevent internal freezing and to keep contaminants from entering the gauge, the stem and bourdon tube shall be filled with low temperature oil and be sealed from the water system using an isolating diaphragm located in the stem. A bright metal bezel shall be supplied for resistance to corrosion and to protect the lens and case from damage.



All line pressure gauges shall be mounted adjacent to the corresponding discharge control tee handles.

LED GUAGE LIGHTING

The 2-1/2" pressure gauges shall be equipped with LED back lighting.

PUMP PANEL LIGHTING

The pump operator's panel shall be supplied with a LED light system. LED strip lights with a stainless steel hood shall be mounted across the top of the pump panel gauges and controls.

LED strip lights with a stainless steel hood shall be provided on each side of the pump module above the side panels.

All pump module lighting shall illuminate when the parking brake is engaged.

WATER TANK INDICATOR

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

The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, and a data link to connect remote indicators. Low water warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.

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

PUMP MANUFACTURER AND MODEL

The pump shall be a Hale DSD model midship pump.

PUMP CONSTRUCTION AND ASSEMBLY

The entire pump, both suction and discharge passages, shall be hydrostatically tested to a pressure of 600 PSI. The pump shall be fully tested at the pump manufacturer's factory to the performance specs as outlined by the latest NFPA Pamphlet No. 1901. Pump shall be free from objectionable pulsation and vibration.



The pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI. All moving metal parts in contact with water shall be of high quality bronze or stainless steel. Pump body shall be vertically split on a single plane for easy removal of entire impeller assembly including wear rings and bearings without disturbing piping or the mounting of the pump in chassis. Pump shaft to be rigidly supported by three bearings for minimum deflection. The bearings shall be heavy-duty, deep groove ball bearings in the gearbox and they shall be splash lubricated.

Pump impeller shall be hard, fine grain bronze of the mixed flow design; accurately machined, hand ground, and individually balanced. The vanes of the impeller intake eyes shall be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.

Removable, non-corrosive material clearance rings shall be provided.

The pump shaft shall be heat-treated, electric furnace, corrosion resistant stainless steel. Pump shaft must be sealed with double-lip oil seal to keep road dirt and water out of gearbox.

PUMP TRANSMISSION

The pump transmission shall be assembled and tested at the pump manufacturer's factory. Pump transmission shall be of sufficient size to withstand up to 16,000 lbs. ft. of torque in road operating conditions. The pump transmission shall be designed with ample capacity for lubrication reserve and to maintain the proper operating temperature.

The transmission drive shafts shall be of heat-treated chrome nickel steel and at least 2-3/4 inches in diameter on both the input and output drive shafts. They shall withstand the full torque of the engine. All gears drive and pump, shall be of highest quality electric furnace chrome nickel steel. Bores shall be ground to size and teeth integrated, shaved, hardened and ground to give an extremely accurate gear for long life, smooth quiet running, and higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrust.

The pump ratio shall be selected by the apparatus manufacturer to give maximum performance with the engine and transmission selected. If gearbox is equipped with a power shift, the shifting mechanism shall be a heat-treated, hard-anodized aluminum power cylinder, with stainless steel shaft. An in-cab control for rapid shift shall be provided that locks in road or pump.

Three green warning lights shall be provided to indicate to the operator when the pump has completed the shift from Road to Pump position. Two green lights to be located in the truck driving compartment and one green light on pump operator's panel adjacent to the throttle control. All lights to have appropriate identification/instruction plates.

PUMP RATING AND TEST REQUIREMENTS

The pump shall be of a size and design to mount on the chassis rails of commercial and custom truck chassis, and have the capacity of 1500 gallons per minute (U.S. GPM), NFPA 1901 rated performance. The pump shall deliver the percentage of rated discharge at pressures indicated below:

100 percent of rated capacity at 150 pounds net pressure



70 percent of rated capacity at 200 pounds net pressure 50 percent of rated capacity at 250 pounds net pressure 100 percent of rated capacity at 165 pounds net pressure

The entire pump shall be assembled and tested at the pump manufacturer's factory. The pump shall be driven by a driveline from the truck transmission. The engine shall provide sufficient horsepower and RPM to enable pump to meet and exceed its rated performance.

ALTITUDE REQUIREMENTS

The apparatus shall be designed to meet the specified rating at 0 to 2000' altitude.

PRIMING PUMP

The priming pump shall be a positive displacement vane type, oil-less, electrically driven, and conform to standards outlined in NFPA 1901. One priming control shall both start the priming motor and open the priming valve.

PNEUMATIC PUMP SHIFT

The pump shift shall be air operated and shall incorporate an air double action piston to shift from road to pump and back. A manual or electric operated pump shift mechanism is not acceptable. The pump shift switch shall be mounted in the cab and identified as "AIR PUMP SHIFT" and include instructions permanently inscribed on the pump shift switch plate. The in-cab operating valve uses a spring loaded locking collar to prevent it from accidentally being moved.

The pump shift control assembly shall incorporate an indicating light system, which will notify the operator when the shift has been completed to PUMP and when the chassis transmission is in correct pumping gear.

The switch that activates the lights must be mounted on the pump transmission and positioned so that the pump shift arm activates the switch only when the shift arm has completed its full travel into PUMP position. An additional indicator light shall be provided adjacent to the throttle control at the pump operator's panel to indicate a completion of the pump shift.

MECHANICAL SEAL

The fire pump shall be provided with a mechanical pump seal. One (1) only required on the suction, inboard, side of the pump. The mechanical seal shall be two inches in diameter and shall be spring loaded, maintenance free and self-adjusting. Mechanical seal construction shall be a carbon sealing ring, stainless steel coil spring, Viton rubber boot, and a tungsten carbide seat with Teflon backup seal.

ANODE SYSTEM



To reduce the effect of galvanic action the pump shall be equipped with two alloy (2) anodes. One anode is to be installed on the inlet (suction) side of the system and one anode is to be installed on the pressure (outlet) side of the system.

The anode brass cap is to be drilled with a 1/8" diameter hole to provide an indicator when the anode alloy element is to be replaced.

SUCTION PRESSURE RELIEF VALVE

Task Force Tips model #A1820 pressure relief valve shall be provided. The valve shall have an easy to read adjustment range from 90 to 300 PSI in 90, 125, 150, 200, 250, 300 PSI increments. For corrosion resistance the cast aluminum valve shall be hardcoat anodized with a powder coat interior and exterior finish. The valve shall be configured for either a Waterous or Hale pump, and have a 2" male NPT threaded discharge outlet. The unit shall be covered by a five-year warranty.

The discharge side of the intake relief valve shall be plumbed to the right side below the running boards, away from but, visible to the pump operator, and shall terminate with an unthreaded pipe. The adjustment control shall be located behind the street side pump panel.

MASTER DRAIN

The apparatus shall be equipped with a Class 1 Manual Master Pump Drain for draining of the lower pump cavities, volute and selected water-carrying lines and accessories. The all brass and stainless steel construction allows for operation up to 600 psi.

PUMP CERTIFICATION TEST

The pump shall undergo pump test with line and/or low voltage requirements of NFPA 1901 prior to delivery of the completed apparatus. The certificate shall be furnished with the apparatus on delivery.

FIRE PUMP WARRANTY

Standard 5 year warranty (Parts and Labor for the first two years, parts only years 3 - 5) See Hale warranty for full details.

ELECTRONIC PUMP MANUALS

Two (2) sets of electronic fire pump service and operation manuals shall be provided with the completed apparatus.



LEFT SIDE STEAMER INLET

There shall be one (1) steamer inlet furnished on the left side pump panel. The suction inlet shall have 6" NST thread. The suction inlet shall have a removable strainer provided inside the external inlet.

LARGE DIAMETER CAP

A six (6) inch chrome plated cap with long handles shall be supplied. The cap shall be capable of withstanding 500 PSI and be trimmed with the apparatus manufacturer's logo in the center of the cap.

RIGHT SIDE STEAMER INLET

There shall be one (1) steamer inlet furnished on the right side pump panel. The suction inlet shall have 6" NST thread. The suction inlet shall have a removable strainer provided inside the external inlet.

LARGE DIAMETER CAP

A six (6) inch chrome plated cap with long handles shall be supplied. The cap shall be capable of withstanding 500 PSI and be trimmed with the apparatus manufacturer's logo in the center of the cap.

LEFT SIDE INTAKE

There shall be an intake located on the left (street) side of the pump and shall contain:

A 2-1/2" intake shall be provided. The inlet shall have a 2-1/2" quarter-turn swing-out valve. The inlet shall be provided with a 2-1/2" NST female swivel that extends through the pump panel.

The inlet valve shall have a swing type control handle located adjacent to the valve.

One (1) 2-1/2" chrome plated rocker lug plug with chain shall be supplied.

LEFT SIDE DISCHARGE #2

The second from the forward discharge on the left (street) side of the pump panel shall contain:

A 2-1/2" discharge shall be provided. The discharge outlet shall have a 2-1/2" quarter-turn swing-out valve. The discharge shall be provided with chrome plated 30-degree discharge elbow with 2-1/2" NST male threads that extends through the pump panel.

DISCHARGE CAP

One (1) chrome plated, Class 1, 2-1/2" rocker lug cap with lug vent and chain shall be furnished.



RIGHT SIDE FRONT DISCHARGE

The forward discharge on the right (curb) side of the pump panel shall contain:

A 3" discharge shall be provided. The discharge outlet shall have a 3" quarter-turn swing-out valve. The discharge shall be provided with chrome plated 30-degree discharge elbow with 3" NST male threads that extends through the pump panel.

DISCHARGE CAP

One (1) chrome plated, Class 1, 3" rocker lug cap with lug vent and chain shall be furnished.

RIGHT SIDE REAR DISCHARGE

The second from the forward discharge on the right (curb) side of the pump panel shall contain:

A 4" discharge shall be provided. The discharge outlet shall have a 4" quarter-turn swing-out valve. The discharge shall be provided with chrome plated straight discharge with 4" NST male threads that extends through the pump panel.

Control of the outlet shall be accomplished using an electric controller. There shall be an LED indicator on the controller to indicate the valve position.

STORZ ADAPTER

One (1) 4" NST Female swivel thread 30-degree down to 5" Storz hard coated aluminum adapter shall be provided. (ref. TFT AH1ST-NP)

One (1) 5" Storz cap and chain with a suction gasket shall be provided. (ref. TFT A01ST)

PUMP CROSSLAYS

There shall be two (2) hose storage crosslay areas mounted on top of the pump module. They shall be arranged in a double stack design with a divider in the center. Each hose storage area shall be provided with dimensions of 9" wide x 57" deep x 13" tall [4 cu. ft. each].

DISCHARGE VALVES

There shall be one (1) discharge outlet in each hose storage compartment.

The discharge outlet shall have a 2" quarter-turn swing-out valve with a push pull type control handle adjacent to the valve. The discharge shall be provided with a swivel head with 1-1/2" NH male threads that extend through the hose compartment floor.

CROSSLAY HOSE GUIDES

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Brushed stainless steel hose guides shall be provided on the left and right side of each hose bed.

CROSSLAY HOSEBED COVER

A vinyl coated nylon hosebed cover shall be provided over the crosslay hosebeds.

The vinyl crosslay cover shall be Midnight Black in color.

ELKHART BALL VALVES

All discharge ball valves shall be manual control 1/4 turn Elkhart heavy duty swing out valve with stainless steel ball unless specified otherwise.

TANK TO PUMP

The tank to pump piping shall be capable of delivering water to the pump at a rate of five hundred (500) gallons per minute. This flow shall be sustained while pumping to a minimum of 80% of the certified tank capacity with the apparatus on level ground.

The tank to pump line shall run from the pump to the front face of the water tank and down into the tank sump. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing. The tank to pump line shall be 3" I.D. piping with a 3" ball valve.

TANK REFILL

A 2" tank refill line shall be provided using a 2" quarter-turn full flow ball valve controlled from the pump operator's panel with a manual locking handle. The tank refill shall be plumbed with high pressure flexible piping and high pressure flexible piping stainless steel couplings.

FOAM SYSTEM, DIRECT INJECTION

Fire Research TurboFoam model TFC226-030 direct injection foam proportioning system shall be installed. The system kit shall include a control module, a foam concentrate pump assembly with an electric motor, a discharge flow sensor with mount for a 3.0" pipe, check valves, foam concentrate strainer, cables, and instruction plates including operations, system diagram, and specifications.

The system shall provide the following capabilities:

Foam concentrate pump:	2.6 GPM
Maximum injection pressure:	400 PSI
	<u>A Foam Program</u>
Proportioning ratio:	0.1 to 1.0 %

The microprocessor controlled system shall automatically maintain a selected foam percent mixture at the pump discharge regardless of water flow fluctuations. It shall monitor the water flow through the discharge and control the flow rate of foam concentrate from the foam tank. The pump shall inject concentrate under pressure into the

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discharge side of the pump to create the correct foam solution. Foam concentrate percent shall be displayed. Discharge flow rate, total water flow, and total foam concentrate flow shall be displayed with the push of a button.

The control module shall be pump panel mounted, waterproof, and have dimensions not to exceed 4 1/4" high by 4 1/4" wide by 1 7/8" deep. The push button controls, digital display, and LED indicators shall be located on the front of the control module. A USB port shall be accessed from the rear.

The foam pump assembly shall have an overall length less than 19 1/2", width less than 10", and a height less than 8 7/8". The components of the assembly shall be mounted to a base and include a pump control box, a pump with an electric motor, a pressure relief valve, and a calibration bypass valve. The pump shall be a triplex plunger pump constructed of a die-cast body with cooling fins, a forged brass head, solid ceramic plungers, and viton seals. The pump shall have a custom electric washguard motor specifically designed for wet environments. The 1/2 hp pump motor shall operate at 12 volts DC and draw 55 amps.

LOW TANK LEVEL SWITCH

A low tank level switch shall be installed in the foam concentrate tank. The low tank level sensor shall be connected to the foam proportioning system to provide protection against dry running of the foam pump. The low tank level sensor shall be mounted on the side of the foam concentrate tank. The low tank level sensor and electrical connections shall be sealed to prevent infusion of foam concentrate into the wiring and possible short circuit of the tank level sensor.

FOAM SYSTEM

The foam system will operate as a Class A system.

SINGLE TANK FOAM TANK REFILL SYSTEM

A truck mounted 12-volt foam tank refill system shall be provided and installed on the apparatus. The refill system shall provide the ability to automatically refill the foam tank from the ground without carrying foam solution up to the foam cell in the hosebed.

The refill system shall be activated by an on/off rocker switch provided on a control panel installed on the pump panel. The foam refill system will automatically shut off when the foam tank is full. The refill system quick connection shall be located beneath the pump panel running board to prevent foam from spilling onto the running board during connection operations.

System features:

- Weather proof on/of rocker switch with integral green power on indicator light
- Red refill PUMP ON indicator light
- Automatic tank fill shutoff, vertical or side mount float switches
- Thermally protected 12-volt motor
- Relay operated motor power circuit
- 5 gpm capacity @ 8 foot lift
- Self priming pump, can run dry and re-prime itself automatically

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- Composite pump head with Buna-N diaphragm
- All corrosion resistant components
- Compatible with Class A or Class B foam concentrates
- Quick connect inlet hose with wand
- Suction inlet strainer

FOAM SYSTEM OUTLETS

The foam system shall be distributed into the following discharge outlets:

Two (2) 1-1/2" crosslays The left side 2-1/2" discharge The right side 3" discharge

PURCHASE INTENT

The apparatus being purchased is expected to have an 18 to 20 year service life. Based on this requirement, the department is extremely concerned that the apparatus remains structurally sound and the outward appearance remains in a "like new" condition, with minimal maintenance and upkeep, throughout the intended service life.

Aluminum apparatus bodies and differing construction designs will be reviewed and considered ONLY if the builder / manufacture provides in the respondent specifications adequate proof that procedures and materials employed in the design prevent corrosion over the intended service life. Burden of proof is on the bidder and final determination of acceptability will be solely determined by the department.

The entire body design shall be of a laser machined, bolted design to allow for ease of removal for repair or replacement, without cutting welds.

APPARATUS BODY DESIGN AND CONSTRUCTION

The apparatus body shall be built of stainless steel and shall be designed exclusively for Fire Service use. The overall body width shall be 95 inches wide. All metal work shall be free of sharp edges, objects or corners. No exceptions are allowed to this requirement.

The body design shall be fully tested with proven engineering and test techniques such as finite element analysis, stress coating, and strain gauging. Engineering and test techniques shall have been performed with special attention given to fatigue life and structural integrity of compartments and body support system.

The apparatus body shall be designed with the use of parametric modeling engineering software to ensure proper design of panel cuts and alignment of holes in mating parts. The entire apparatus body shall be a precision laser machined, bolted construction, properly reinforced with integral flanges eliminating the need for additional structural shapes. Hose body fabrications shall be free of all internal projections which might injure personnel or fire hose.

MODULAR BODY REQUIREMENTS

The body shall be completely modular in design allowing transfer of body components to a new chassis in the event of an accident or wear. Body components shall be removable from chassis without cutting or bending. The modular design shall also facilitate ease of repair or replacement of major or minor body parts. The mounting of the apparatus body shall be separate and distinct from the water tank mounting and the pump module mounting.

All body panels are to be laser machined on a CAM controlled laser to ensure accuracy (+/- .010"). This shall greatly enhance assembly and matching of repair parts. The body compartment floors, rear walls and roof areas shall be constructed of 12-gauge stainless steel. The vertical front and rear walls are designed with 14-gauge stainless steel. These front and rear walls are designed as a structural beam with the inclusion of the design.

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Interior stainless steel panels shall be #4B finish to eliminate the need for high maintenance painted surfaces in the compartments. All exterior stainless steel panels shall have #4B finish.

The entire body shall be fabricated using precision holding fixtures to ensure accurate dimensions. Body front and rear vertical flanges shall be triple broken, providing a mounting area for rear hand rails. Major body components shall consist of right and left body sides, and rear facing compartments.

COMPARTMENT ROOF CONSTRUCTION

Each compartment top shall have a bolt in 12-gauge stainless roof section for supporting roof loads of up to 500 pounds per square foot without permanent roof deformation. The stainless roof sections shall attach the compartment rear wall and compartment vertical sides through a fastened joint creating a full perimeter compartment attachment of the stainless roof section.

COMPARTMENT INTERIOR FINISH

For better interior visibility, to reflect light better, ease of maintenance and prevent the masking of poor welds and questionable workmanship the interior of the body compartments shall remain uncoated.

BEVELED REAR TAILBOARD

A rear tailboard 8" deep shall be provided at the rear from "Laser Grip" stainless steel. The tailboard shall provide recessed for the rear ICC marker lights. It shall be bolted to the rear support structure. The corners of the rear bumper shall be beveled back to reduce the rear bumper swing of the vehicle.

CHASSIS FRAME EXTENSION

There shall be a rear three (3) inch x four (4) inch x 1/4 inch wall ASTM A-500 grade B rectangular tubing frame extension to provide frame support for the rear of the apparatus body.

Two vertical mounting plates are to be welded to the tubing to provide a drop frame connection to the truck chassis. This extension assembly is to be bolted to the truck chassis with eight (8) 1/2 grade 8 bolts with hardened flat washers to form an integral part of the truck frame assembly.

RECEIVER HITCH

There shall be a Class IV receiver hitch assembly as an integral part of the chassis rear frame extension that is located at the rear of the apparatus below the rear step.

EXTENSION PAINT FINISH

The rear frame extension assembly and hitch assembly is to be black powder coated prior to installation.



COMPARTMENT DESIGN AND CONSTRUCTION

All compartments shall be manufactured from 12-gauge stainless steel with the vertical front and rear corner walls from 14-gauge, shall be of sweep out design and shall be bolted together. Stainless recessed round head bolts and stainless aircraft style "ESNA" nuts shall be applied with proper torque rating for each fastener. This type of construction shall greatly enhance the strength and ease of parts replacement in the event of damage and future modifications. Wherever possible, body bolts shall be hidden from plain view for appearance and ease of apparatus cleaning.

COMPARTMENT VENTILATION

Each compartment shall be provided with a laser cut louver to provide adequate ventilation.

VENT FILTRATION

There shall be filters provided for compartments L1, L3, R1, R3 and RR1. The protective louver covering the filer shall be removable to allow for filter changing.

The filter shall be 100% virgin nylon fiber in an open web design that is USDA approved. The filter shall be chemically treated with Dimethyl Benzyl Ammonium Saccharinate to aid in the reduction of bacteria and fungi.

Compartment Body - 400 gallon - Mini Pumper

WATER TANK CAPACITY

The water tank shall be rectangular shaped, and shall have a capacity of 300 US gallons.

TANK LID & FILL TOWER

The tank shall have a combination vent and fill tower. The fill tower shall be constructed of 1/2" thick Polyprene & Mac226 and shall be a minimum dimension of 8"x 8" outer perimeter. The tower shall be located in the center front the tank unless otherwise specified by the purchaser. The tower shall have a 1/4" thick removable Polyprene & Mac226; screen and a Polyprene & Mac226 hinged-type cover. Inside the fill tower, there shall be a combination vent overflow pipe. The vent overflow shall be a minimum of schedule 40 pipe with a minimum ID of 4" that is designed to run through the tank, and shall be piped behind the rear axle beneath the tank.

The tank cover shall be constructed of recessed 1/2" thick Polyprene & Mac226, stress relieved, UV stabilized material. A minimum of two lifting dowels shall be drilled and tapped to accommodate the lifting eyes.

OVERFLOW AND VENT PIPE

The fill tower shall be fitted with an integral 4" ID, Schedule 40 PVC combination overflow/vent pipe running from the fill tower through the tank to a 4" coupling flush mounted into the bottom of the tank to allow water to overflow beneath the chassis.

The water tank manufacturer shall be either APR or UPF selected by the apparatus builder.

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BODY MODULE CAPACITIES AND HOSEBED HEIGHT

The total capacity of the body module exterior compartments shall be 139 cubic feet.

The total capacity of the body hosebed shall be approximately 40 cubic feet.

The hosebed shall be approximately 44" from the bumper.

The body shall have an overall length of 108".

INTERNAL FOAM TANK

A minimum fifteen (15) gallon foam concentrate tank shall be furnished as an internal component of the booster tank. Mounted to the left side of the fill tower in the hosebed area. The foam tank shall be equipped with a pressure/vacuum vent cap.

The foam tank shall be plumbed to the on board "Class A" foam system. A drain valve shall be provided at the lowest point of the foam tank. The foam tank shall drain shall directly to the surface below the apparatus without contacting other body or chassis components. The following labels shall be attached to the foam tank:

"CLASS A FOAM TANK FILL" "WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM"

APPARATUS BODY HOSEBED

The hose bed shall be constructed in such a manner that will prevent damage to fire hose. The hosebed shall comply with the current NFPA requirements. The interior of the hosebed shall be free of projections such as nuts, sharp edges or brackets that may damage hose. The hosebed and walls shall be manufactured from stainless steel. No exceptions to this requirement are allowed.

An aluminum extrusion shall be installed over the rear opening of the hosebed to protect the body from wear. The hosebed bottom shall be fitted with removable slatted, ribbed 6" heavy-duty extruded aluminum floorboards.

HOSEBED COVER

A black vinyl hosebed cover shall be provided and designed to cover the entire main hosebed area. The cover shall be installed with "stretch cord type" fasteners along each side of the hosebed. A weighted flap shall be incorporated into the rear edge of the cover.

The hosebed cover rear flap shall have a positive locking device to meet the requirements of NFPA.

LEFT SIDE COMPARTMENT DIMENSIONS

FORWARD OF WHEEL WELL



There shall be one (1) rescue style, full height, full depth compartment ahead of the rear wheels. The compartment dimensions shall be 35-1/2" wide x 57" high x 22" deep with the door closed. The door opening shall be 26-1/2" wide x 49-1/2" tall.

ABOVE WHEEL WELL

There shall be one (1) high side full depth depth compartment centered over the rear wheels. The compartment dimensions shall be 44" wide x 40" high x 22" deep with the door closed. The door opening shall be 42" wide x 34-1/2" tall.

REAR OF WHEEL WELL

There shall be one (1) rescue style, full height, full depth compartment behind the rear wheels. The compartment dimensions shall be 23-1/2" wide x 57" high x 22" deep with the door closed. The door opening shall be 19" wide x 49-1/2" tall.

ROLLUP DOOR CONSTRUCTION - LEFT SIDE

All left side compartments shall be provided with Gortite roll up doors. The roll up doors shall be constructed of double sided aluminum extrusions connected with a ball and socket joint. The extrusions shall be 1-3/8" wide x 3/8" thick and shall be painted to match the job color. A flexible EDPM extrusion shall be provided between each slat to insure a weather tight seal. Aluminum extrusions shall be individually replaceable without disassembling the entire door by removing push out clips on each end.

Side channels for each door to ride in shall be provided with santoprene seals to prevent dirt and moisture from entering the exterior compartment. A single piece top drip rail shall be provided with a santoprene seal to prevent dirt and moisture from entering the compartment when the door is fully closed. The bottom of each door shall also be provided with a santoprene seal. All nonmetallic parts shall be glass filled nylon.

The left side door latches shall be non-locking stainless steel lift bars and shall be provided with a magnetic door ajar switch system.

FENDER SIDE SKIRTS

There shall be stainless steel fender side skirts located in the area of the rear wheels. The design of the fender sides shall be a minimal length to provide maximum compartment space in the apparatus.

FUEL FILL - SIDE BODY

The fuel fill shall be located in the rear fender area on the left side of the apparatus body. The spring loaded fuel fill door shall have "Diesel Fuel" laser cut in the face of the door.

BODY FENDERS - POLISHED

The apparatus body fenders shall be made from 16 gauge polished stainless steel and shall be rolled, die stamped and fully removable. The stainless steel fenders and stainless fender liners shall be fastened with stainless bolts and ESNA nuts to the outer fender panel.



REAR AXLE MUD FLAPS

Two (2) black, anti-sail, mud flaps shall be mounted behind the rear wheels.

RIGHT SIDE COMPARTMENT DIMENSIONS

FORWARD OF WHEEL WELL

There shall be one (1) rescue style, full height, full depth compartment ahead of the rear wheels. The compartment dimensions shall be 35-1/2" wide x 57" high x 22" deep with the door closed. The door opening shall be 26-1/2" wide x 49-1/2" tall.

ABOVE WHEEL WELL

There shall be one (1) high side full depth depth compartment centered over the rear wheels. The compartment dimensions shall be 44" wide x 40" high x 22" deep with the door closed. The door opening shall be 42" wide x 34-1/2" tall.

REAR OF WHEEL WELL

There shall be one (1) rescue style, full height, full depth compartment behind the rear wheels. The compartment dimensions shall be 23-1/2" wide x 57" high x 22" deep with the door closed. The door opening shall be 19" wide x 49-1/2" tall.

ROLLUP DOOR CONSTRUCTION - RIGHT SIDE

All right side compartments shall be provided with Gortite roll up doors. The roll up doors shall be constructed of double sided aluminum extrusions connected with a ball and socket joint. The extrusions shall be 1-3/8" wide x 3/8" thick and shall be painted to match the job color. A flexible EDPM extrusion shall be provided between each slat to insure a weather tight seal. Aluminum extrusions shall be individually replaceable without disassembling the entire door by removing push out clips on each end.

Side channels for each door to ride in shall be provided with santoprene seals to prevent dirt and moisture from entering the exterior compartment. A single piece top drip rail shall be provided with a santoprene seal to prevent dirt and moisture from entering the compartment when the door is fully closed. The bottom of each door shall also be provided with a santoprene seal. All nonmetallic parts shall be glass filled nylon.

The left side door latches shall be non-locking stainless steel lift bars and shall be provided with a magnetic door ajar switch system.

REAR COMPARTMENT DIMENSIONS

There shall be one (1) full height compartment at the rear of the body. It shall have approximate dimensions of 48" wide x 33-1/2" high x 42" deep. The door opening shall be 45-1/2" x 24" tall.

ROLLUP DOOR CONSTRUCTION - REAR

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The rear compartment shall be provided with a Gortite roll up door that shall be constructed of double sided aluminum extrusions connected with a ball and socket joint. The extrusions shall be 1-3/8" wide x 3/8" thick with satin anodized finishing. A flexible EDPM extrusion shall be provided between each slat to insure a weather tight seal. Aluminum extrusions shall be individually replaceable without disassembling the entire door by removing push out clips on each end.

Side channels for the rear door to ride in shall be provided with santoprene seals to prevent dirt and moisture from entering the exterior compartment. A single piece top drip rail shall be provided with a santoprene seal to prevent dirt and moisture from entering the compartment when the door is fully closed. The bottom of the door shall also be provided with a santoprene seal. All nonmetallic parts shall be glass filled nylon.

The rear door latch shall be a non-locking stainless steel lift bar and shall be provided with a magnetic door ajar switch system.

REAR BODY REFLECTIVE CHEVRON STRIPING

The rear-facing vertical surfaces of the rear taillight panels and the rear body inset area beside the full height rear door(s), visible from the rear of the apparatus, including the rear compartment door(s), shall be equipped with six (6) inch wide retroreflective striping in a chevron pattern sloping downward and away from the centerline of the vehicle at an angle of 45 degrees.

Each stripe in the chevron shall be a single color alternating between red (3M #-82) and yellow (3M # -81).

HARD SUCTION TRAYS - LEFT SIDE

Two (2) stainless steel hard suction trays shall be installed on the top of the compartment on the left (driver's) side of the apparatus.

Each tray shall be designed to accommodate hard suction hose in a nine (9) foot length. The suction shall be held in place with straps attached to the tray with footman loops.

Compartment Top Ladder Group - 8-Fold, 8-Roof, 14-2 Sec

ROOF LADDER

One (1) 8' Duo-Safety model 775-A, aluminum channel rail roof ladder with folding roof hooks shall be provided with the apparatus.

ATTIC LADDER

One (1) 8' Duo-Safety model 585-A aluminum folding attic ladder shall be provided with the apparatus.

EXTENSION LADDER



One (1) 14' two-section Duo-Safety model 1000A solid beam, aluminum extension ladder shall be provided with the apparatus.

APPARATUS COMPARTMENT LIGHTING

Two (2) LED, armor protected, strip lights shall be provided one (1) each side of the compartment at the door frame for each body compartment. Each body door shall have an automatic compartment light switch.

FOLDING STEPS

Three (3) folding steps shall be provided on the left rear of the apparatus body.

The folding step(s) shall include an integrated LED light beneath each step. This light shall illuminate when the apparatus ground lights are activated. The bottom of the step and step mounting shall include white reflective material to aide in locating the step when the vehicle ground lights are not activated.

APPARATUS ICC MARKER LIGHTING AND REFLECTORS

Three (3) red LED clearance lights shall be supplied, mounted in the rear of the apparatus.

ICC lighting utilized and lighting positions shall be in conformance with FMVSS 108.

There shall be a diamond shaped amber reflector mounted on each front corner of the apparatus body and a diamond shaped red reflector mounted on each rear corner of the body.

REAR STOP/TAIL/TURN/BACKUP LIGHTS

The rear of the apparatus shall be equipped with Whelen 600 Series lights. The top light in the assembly shall be a red LED stop/tail light, Whelen model 60BBTC. The middle light set shall be an amber LED lamp with a populated arrow shape, Whelen model 60A00TAR and the lower lights shall be clear Halogen backup lights, Whelen model 60J000CR.

A one-piece bright finished trim shall be mounted around the rear stop/tail/turn and backup lights on each side of the apparatus.

BACK-UP ALARM

A solid state electronic backup alarm shall be installed on the rear of the apparatus and wired to the backup light circuit.

One (1) license plate mounting and LED light shall be provided. The light and bracket shall be located on the rear of the apparatus.

ROOF MOUNTED LIGHTBAR



A Whelen Justice, 56" light bar system shall be supplied and permanently mounted on the lightbar mounting support on the front of the body. This light bar system shall be supplied with:

all clear lens covers

four (4) corner red LIN6 LED lightheads

two (2) JDCR red CON3 Super-LED lightheads in the outboard positions

two (2) JDCC white CON3 Super-LED lightheads in the second forward positions

two (2) JDCR red CON3 Super-LED lightheads in the third forward positions

two (2) rear facing JDCA amber CON3 Super-LED lightheads in the outboard positions

FRONT WARNING LIGHTS

Two (2) Whelen, model LINZ6R, LED warning lights with aluminum bezels shall be mounted on the front brush guard facing forward.

FRONT INTERSECTION LIGHTS

Two (2) Whelen, model LINZ6R, LED warning lights with aluminum bezels shall be mounted on each side of the front brush guard.

BODY SIDE WARNING LIGHTS

Two (2) Whelen, model LINZ6R, LED warning lights with aluminum bezels shall be mounted on each side of the body in the forward wheelwell area.

REAR UPPER LEVEL WARNING LIGHTS

Two (2) Whelen, model LINZ6 Super-LED red warning lights with clear lens and chrome bezels shall be mounted on the upper rear of the apparatus.

Two (2) Whelen, model LINZ6 Super-LED red warning lights with clear lens and chrome bezels shall be mounted on the upper rear sides of the apparatus.

REAR WARNING LIGHTS

Two (2) Whelen warning lights, 600 Series, Super-LED light heads shall be mounted on the rear of the apparatus below the taillights at the lower outermost corners with a Whelen chrome plated flange.

The light heads shall include an internal flasher with 14 flash patterns, steady-burn and Hi/Low power. The warning lights shall be programmed for Hi-power with the same flash pattern for both the right and left intersection light head.

Both warning light lenses shall be red in color.

LEFT FRONT QUARTZ LIGHT

The following light shall be provided mounted on the left front corner of the body:

Fire Research Spectra LED Scene Light model SPA100-Q20 lamphead shall be provided. The lamphead shall have eighty four (84) ultra-bright white LEDs, 72 for flood lighting and 12 to provide a spot light beam pattern. It shall operate at 12 volts DC, draw 18 amps, and generate 20,000 lumens of light. The lamphead shall have a unique lens that directs flood lighting onto the work area and focuses the spot light beam into the distance. The lamphead angle of elevation shall be adjustable at a pivot in the mounting arm and the position locked with a round knurled locking knob. The lamphead shall be no more than 5 7/8" high by 14" wide by 3 1/2" deep and have a heat resistant handle. The lamphead and mounting arm shall be powder coated. The LED scene light shall be for fire service use.

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Fire Research -ON option switch shall be installed on the lamp head. The weatherproof on-off toggle switch shall be mounted on the lamp head.

The light head shall be mounted on a side mount push up telescopic pole. The light pole shall be anodized aluminum and have a knurled twist lock mechanism to secure the extension pole in position. The extension pole shall rotate 360 degrees. The outer pole shall be a grooved aluminum extrusion and qualify as an NFPA compliant handrail. The pole mounting brackets shall have a 3 1/2" offset. Wiring shall extend from the pole bottom with a 4' retractile cord.

RIGHT FRONT QUARTZ LIGHT

The following light shall be provided mounted on the right front corner of the body:

Fire Research Spectra LED Scene Light model SPA100-Q20 lamphead shall be provided. The lamphead shall have eighty four (84) ultra-bright white LEDs, 72 for flood lighting and 12 to provide a spot light beam pattern. It shall operate at 12 volts DC, draw 18 amps, and generate 20,000 lumens of light. The lamphead shall have a unique lens that directs flood lighting onto the work area and focuses the spot light beam into the distance. The lamphead angle of elevation shall be adjustable at a pivot in the mounting arm and the position locked with a round knurled locking knob. The lamphead shall be no more than 5 7/8" high by 14" wide by 3 1/2" deep and have a heat resistant handle. The lamphead and mounting arm shall be powder coated. The LED scene light shall be for fire service use.

Fire Research -ON option switch shall be installed on the lamp head. The weatherproof on-off toggle switch shall be mounted on the lamp head.

The light head shall be mounted on a side mount push up telescopic pole. The light pole shall be anodized aluminum and have a knurled twist lock mechanism to secure the extension pole in position. The extension pole shall rotate 360 degrees. The outer pole shall be a grooved aluminum extrusion and qualify as an NFPA compliant handrail. The pole mounting brackets shall have a 3 1/2" offset. Wiring shall extend from the pole bottom with a 4' retractile cord.

ALUMINUM SHELVES - ADJUSTABLE



Four (4) adjustable aluminum shelves shall be provided with one (1) each installed in R1, L1, R3 and L3 compartments. The shelves shall have a flange 1-1/2" deep with a minimum material thickness of .190". Each shelf shall be adjustable in height and held in place by four (4) extruded uprights.

ALUMINUM SHELVES - ADJUSTABLE

Two (2) adjustable aluminum shelves shall be provided with one (1) each installed in R2 and L2 compartments. The shelves shall have a flange 1-1/2" deep with a minimum material thickness of .190". Each shelf shall be adjustable in height and held in place by four (4) extruded uprights.

ALUMINUM SHELF - ADJUSTABLE

One (1) adjustable aluminum shelves shall be provided and installed in the RR1 compartment. The shelf shall have a flange 1-1/2" deep with a minimum material thickness of .190". The shelf shall be adjustable in height and held in place by four (4) extruded uprights.

ALUMINUM TRAYS - PULL OUT

Four (4) heavy duty pullout trays shall be installed and shall be equipped with slides and a gas shock to hold the tray in both the in and out positions and shall be made from .190" aluminum with a maximum capacity of 250 pounds. One (1) each are to be installed on the floor of the L1, L3, R1 and R3 compartments.

WHEEL CHOCKS

One pair of heavy duty, extruded aluminum wheel chocks measuring 8" high x 7" wide x 11.8" long shall be provided with the apparatus. Worder 7HY HD Yellow Handled Extrusions are the requested chocks. The wheel chocks shall have a bright yellow powder coat finish for high visibility, safety and corrosion resistance. No exception shall be allowed to these requirements.

Two chock holders shall be provided and mounted one on each side of the apparatus just ahead of the rear tires below the front body compartment.

REFLECTIVE SAFETY STRIPE

A 1" x 4" x 1" wide 3M brand Scotchlite reflective stripe shall be affixed to the perimeter of the vehicle. The striping shall be placed up to 60" above ground level and shall conform to NFPA reflectivity requirements. At least 60% of the perimeter length of each side and width of the rear, and at least 25% of the perimeter width of the front of the vehicle shall have reflective stripe.

REFLECTIVE STRIPE COLOR

The apparatus body striping shall be white reflective.

The smaller accent stripe(s) shall be white reflective.

WATER TANK WARRANTY

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The water tank is to be free from defects in material and workmanship for the normal service life of the apparatus in which the water tank is installed.

If a tank has a defect in material or workmanship covered by the warranty, the tank manufacturer shall repair at their cost, by authorized personnel or authorized third parties. The tank manufacturer shall make an effort to effectuate repair within 48 hours following initial notification of a covered defect. The tank manufacturer shall make a reasonable effort to repair tank at most convenient location to end user.

The tank manufacturer shall reimburse all reasonable costs associated with rendering the tank accessible for repair, including, but not limited to, removal and reassembly of the hose bed floor.