



Ford Cab & Chassis

Unit is to be installed on a Ford F550, Crew Cab, 4 x 4.

GVWR : 19,500 lb
Front Axle : 7,000 lbs
Rear Axle : 13,500 lbs
Skid plates (Front & Rear on the under carriage)
Rear and Front Stabilizer suspension bar
Extra Heavy Service Suspension Package
Ambulance Prep.

The power train should consist of the following :
Ford Power stroke V8, 6.4 L Turbo Diesel Motor
5 Speed TorqShift Automatic transmission
Part-time four wheel drive
4 x 4 inside cab Shift on the fly
Dual Alternators with combined output of 320 AMPS

Interior requirements are as follows (XL package) :
Black floor mats in place of carpeting
Upfitter switches (4)
2-Heavy duty vinyl bucket seats instead of bench seats
Air conditioning with high output fresh air heater
Am/Fm Stereo with digital clock



Exterior requirements are as follows (XL Decor package):

The chassis shall be painted by the chassis manufacturer according to the chassis manufacturer's factory standards. The body builder shall not repaint the chassis. Cab to be Ford Fire Red (F1) with clear coat.

Chromed front bumper

New design front lights

Argent grill

Dual front tow hooks

Mirrors, manually telescoping trailer tow with manual glass and two-way fold

The chassis exhaust system shall be extended to the rear of the right rear wheel.

The tires should be a maximum traction mud / snow tire

The wheel base should be 176.2" wheelbase

Wheels to be primed grey

Major Standard Features :

Two (2) front tow hooks

Axle – Front Monobeam with coil spring suspension

Battery – 750 CCA 78-AH

Brakes – Anti-lock System (ABS)

Engine hour meter

Engine Block Heater

Exterior cargo light – Back of cab

Front and rear stabilizer bars

Fuel tank – 40 gallon capacity

Grab handles – Driver and front passenger

Power steering

Roof clearance lights

Solar tinted glass

Steering damper

Windshield wipers – interval

Two (2) dash mounted auxiliary power ports

Safety & Security :

Airbag – Driver and front passenger

Belt-Minder safety belt reminder

BlockerBeam – includes valance air dam

Passenger airbag deactivation switch

Ford Warranty :

3 years 36,000 miles bumper to bumper

5 years 60,000 miles Transmission

5 years 100,000 miles motor

The Fire Apparatus shall meet all the requirements of the NFPA 1906 standard while stationary on a grade of 10 percent in any direction.

A permanent plate or label, stating the maximum number of personnel allowed to ride on the apparatus, shall be provided and installed in clear view of the driver.



Safety Kit

A transportation safety kit (first aid, 2.5 lb. Extinguisher & triangles) will be provided.

Stainless Steel Side Step Bars

One (1) set of 3" diameter stainless steel side step bars. Steps to be marine grade 304 prime stainless steel polished to a mirror finish with molded plastic step pad. Step area is compressed, rather than a cut out hole, to enhance strength and prevents interior corrosion. Lifetime Limited Warranty

Plastic step pad shall be covered with a Stainless Steel non-slip texture cover. Brand to be RealWheels model #RW420-2.

Outer wheel inserts

The front and rear wheels shall be dressed with polished, stainless steel wheel liners, hub covers and lug nut covers. Brand to be Realwheels.

Inside Doors Reflective

All driving and crew compartment doors shall have at least 96 in² of reflective material affixed to the inside of each door.

Lettering & Stripping

Door logo shall be installed and match the existing apparatus. The Apparatus number shall be applied on all four corners of the vehicle. 4" Reflective 3M stripping shall be applied on the Cab & the truck bed as per NFPA.

At least 50 percent of the cab and body length on each side, at least 50 percent of the width of the rear, and at least 25 percent of the width of the front of the apparatus shall have the reflective material affixed to it.

Stripping to be applied at the direction of the Fire Department.

Engine Speed Control Device

An automatic engine speed control device shall be installed to allow an increase in the engine speed when the apparatus is parked. (NFPA 1906, 5.2.1.4 requirement)

An interlock shall prevent the operation of this engine speed control device unless the parking brake is fully engaged and the transmission is in neutral or park, or unless the engine speed control device is used with chassis engine driven components, in which case it shall be interlocked with the engagement of those components.

Winch (8,000#) & Brush Guard

There shall be a 8000 lbs. WARN model #26502 M8000 Thermometric removable electric winch. As per NFPA 1906 (13.2.2), the winch shall have a minimum wire rope length of 125 ft (38m) with a large latched hook. The wire rope will be 5/16" in diameter and shall be constructed of aircraft wire rope and galvanized to help resist corrosion.

Feature of the winch will include a 3 stage planetary gear system for fast line speed, cam action clutch disengages planetary gear system for free spooling and automatic load holding brake for strength and reliability.

There shall be a winch carrier to mount the winch with a Warn 2" front receiver mounted directly on cab & chassis frame without drilling. A rear mounted Class Four trailer hitch shall be securely attached to the chassis frame. Front & rear hitches shall include the 7-pin wiring trailer harness. Front and Rear Warn Quick Connectors and battery power leads to connect the winch shall be run to each of these locations for mounting of the winch. Dust Cover to be installed front and rear.

A remote with 25' (7.6m) of cable shall be supplied (NFPA 1906, 13.3.1.1 requirement).

In addition, this system includes a Warn Trans4mer Chrome heavy duty grille/bush guards which wraps to the outside of the headlights.



CET Flat Bed Body

One (1) custom Fire Application aluminum flat bed body, 108" long x 94-5/8" wide. The aluminum plate used in construction is .100" 3003-H22 polished aluminum alloy treadplate.

Body sub-frame is made from 6061-T6 aluminum tubes and channels. Sub-frame crossmembers are installed every 16". The channel is 1-1/2" wide x 3" high x 3/16" thick. The body crossmembers shall extend the full width to support the compartment framing and shall be welded to the sub-frame main members.

The Body sub-frame main members consist of 6061-T6 Aluminum square tubing of 2" wide x 6" high x 3/16" thick.

The perimeter shall be made with 1/8" thick forged 3003H14 Aluminum. Forged aluminium brings a strong design that was specially made to embed emergency lighting & designed to fit properly a 4" reflective stripping.

The body shall be attached to the chassis rails with a minimum of four (4) heavy duty "U" bolts. The body shall be separated from the chassis by 3/8" Teflon. Attachment of the body and sub-frame will allow the body to resist from all distortion and off road operational condition.

The body is a modular design to allow removal from the chassis for major repair or mounting on a new chassis. Isolating material between the body and the chassis to be installed

All welding shall be done electrically using 5356 aluminum welding wire.

Rear vertical skirt will be made from 1/8" 3003-H22 polished aluminum alloy treadplate.

Rear skirt to include Signal, brake, reverse lights, D.O.T., license plate & NFPA steps.

Rear rubber mud flaps are provided. A bracket attached to the side of the muffler pipe end is installed to prevent any damaged that can occur to the mud flap.

Two (2) heavy duty tow eyes shall be installed at the rear of the body (NFPA 1906 requirement). The tow eyes will be fastened directly to each rear chassis frame rail. Hardware shall have a clear and unobstructed access. Front tow hooks shall be supplied by the Cab & Chassis OEM.

Stepping height from the ground to the first step shall not exceed 24".

Access handrails shall be provided where steps for climbing are located.

An angle of approach and an angle of departure of at least 20 degrees shall be maintained at the front and the rear of the vehicle when it is loaded.

All welds shall be free of harmful defects such as cracks, porosity, undercuts, voids, and gaps. There shall be no weld burn through. Fillets shall be uniform and smooth. There shall be no damage to adjacent parts resulting from the welding.

This will be no exception to the body specifications. Pre-built commercial flat bed bodies are not acceptable.



Upper Compartments

All compartment will be made with .125 mil bright polished diamond tread aluminum.

All compartment seams is sealed with a pliable automotive body caulking. All dissimilar metals will be protected with suitable isolating materials.

Door openings shall be fitted with solid neoprene weather strip completely sealing the perimeter of the compartment door opening.

All door lock mechanisms shall be fully enclosed within the door panels to prevent fouling of the lock in the event equipment inside into the lock area.

All compartments shall be of sweep-out type with no lip at bottom edge for easy cleaning.

All compartments floors will be covered with Plastic Tiles. The tiles shall be black with yellow angled leading edges.

The compartment doors is latched with recessed, polished stainless steel handles and locks.

All compartment interiors will be Zolatone 20-72 scratch resistant finish. Color to be light grey.

There shall be a set of tracks for future installation of adjustable shelf(s) in each compartment. These tracks shall be installed vertical on the walls of the compartment(s) and shall offer a multitude of height adjustment possibilities.

R1 – L1 Compartments

Two (2) 60" long x 32" high x 22" deep compartments with one (1) roll-up door each. Compartments located behind the chassis, one (1) each side of the water tank.

R2 – L2 Compartments

Two (2) 36" long x 32" high x 22" deep compartments with one (1) roll-up door each. Compartments located behind the chassis, one (1) each side of the water tank at rear of the flat bed

Each compartments will have at least one (1) 12" long clear light tube. Each light tube to have a minimum brightness of 28,000 – 30,000 cd/m² with an expected lifetime of 30,000 hrs.

Lower Compartments

All compartment will be made with .125 mil bright polished diamond tread aluminum.

All compartment seams is sealed with a pliable automotive body caulking. All dissimilar metals will be protected with suitable isolating materials.

The overlap aluminum compartment doors shall be securely attached to the body with a full stainless steel hinge. Door openings shall be fitted with solid neoprene weather strip completely sealing the perimeter of the compartment door opening. Drop down door shall be installed with heavy duty retaining cables.

All compartments floors will be covered with Plastic Tiles. The tiles shall be black.

All door lock mechanisms shall be fully enclosed within the door panels to prevent fouling of the lock in the event equipment inside into the lock area.



The compartment doors is latched with recessed, polished stainless steel handles and locks.

All compartments shall be of sweep-out type with no lip at bottom edge for easy cleaning.

All compartment interiors will be Zolatone 20-72 scratch resistant finish. Color to be light grey.

R1 – L1. Two (2) 24" long x 12" high x 14" deep compartments under body behind the chassis, one (1) each side of the truck bed. One (1) 12" tube light is included in each compartment.

Right Side Storage Tray

A Storage Tray made from aluminum diamond plate shall be supplied and installed on top of the right side bed compartments.

Dimension of the Storage Tray to be full length and width of the top compartment or transverse bed with an maximum height of 8".

The area shall be designed to prevent the accumulation of water and allow for ventilation to aid in drying hose in the storage area. Black Turtle Tiles to be installed and bolted on the floor.

Red canvas with snaps shall be installed on top of the Storage Tray along with rear or side protective net.

Left Side Storage Tray

A Storage Tray made from aluminum diamond plate shall be supplied and installed on top of the left side bed compartments.

Dimension of the Storage Tray to be full length and width of the top compartment or transverse bed with an maximum height of 8".

The area shall be designed to prevent the accumulation of water and allow for ventilation to aid in drying hose in the storage area. Black Turtle Tiles to be installed and bolted on the floor.

Red canvas with snaps shall be installed on top of the Storage Tray along with rear or side protective net.

Rear Bumper

A rear step bumper will be constructed of 3/16" aluminum and bolted to the body sub frame from the bottom, and equipped with a non slip, self draining, grated surface in the center section.

Color

Color finishes will be one colour red on painted surfaces and aluminum for remaining components chosen by the District Chief

Other item included

Medium Kochek Wheel Chocks with storage bracket.

One (1) transportation safety kit (first aid, 2.5 lb. Extinguisher & triangles) will be provided.



Electrical components

A 12 volt electrical system is supply. The built in emergency light switch panel have a master switch plus individual switches for selective control. The switch panel is located in the cab on the driver's side to allow for easy access. The switches on the dashboard are lighted rocker type.

The wiring is secured in place, readily accessible and protected against heat, water and physical damage.

The complete electrical system is separated from the chassis wiring system except for a power supply connection at chassis battery. It is also protected by bolt-on type automatic circuit breakers.

All wiring will be run in heat and moisture resistant plastic convoluted split loom.

Grommets will be used where conductors or loom pass through metal.

Switches, relays, terminals, and connectors shall have a direct current (dc) rating of 125 percent of maximum current for which the circuit is protected.

Conductor insulation will conform to S.A.E. requirements. All circuit are protected by automatic reset circuit breakers.

All wiring furnished will conform to the national Electric Code.

All circuits will be wired in conformance with S.A.E. J1292, Automobile wiring standard.

All wiring will be function worded schematically.

A set (2) of electric diagram will be remit upon delivery.

Clearance, marker, license plate lights and reflectors will be furnished per D.O.T.

LED Signal, brake and reverse lights will be High Quality Grote Automotive lights recessed mount into rear aluminum skirt area of body per FMVSS 108 and CMVSS 108 requirements. Light to be LED Oval with chromed housing.

Two (2) LED Amber marker/clearance lights with chrome housing and clear lens will be installed on the front side of the bed, one (1) each side. Two (2) LED Red marker/clearance lights with chrome housing and clear lens will be installed on the rear side of the bed, one (1) each side. Three (3) LED Red marker/clearance lights with chrome housing and clear lens will be installed at the rear center of the bed. Amber & Red reflectors shall be installed around the perimeter of the bed as per DOT requirement.

License plate light shall be an Eon light with SS polish case that has a light output equivalent to a 10 watt halogen lamp. Eon light to have a 50,000 hr LED life.

One (1) back-up alarm that meets the type D (97 dba) requirements of SAEJ994 shall be provided at the rear of the apparatus. It will activate when the transmission is placed in reverse.

Compartment Lights switches

One (1) switch per compartment shall be installed so the compartment light(s) shall come on only when compartment door is open.



Door Ajar

One (1) door ajar warning light shall be provided and installed in the consol to indicate an open body compartment door. The light shall be properly marked with a sign "Warning Door Ajar".

Scene lights

Two (2) Rear Unity scene light provided and mounted on the top of the rear water tank to illuminate the bed area. One (1) to be Floodlight, one (1) to be Spotlight. Switch to be located inside the cab.

Two (2) side step lights (one each side) to illuminate the tailboard step when clearance lights are on.

Ground lights

Two (2) ground lights shall be installed at the entry of the cab, one (1) on each side.

Lighting designed to provide illumination on areas under the driver and crew riding area exits shall be switchable but activated automatically when the exit doors are opened.

Two (2) ground lights shall be installed below the side bed, one (1) on each side.

Two (2) ground lights shall be installed below the rear steps, one (1) on each side.

These ground lights will be illuminated at any time the chassis parking brake is activated.

Lights to be white oval LED w/28 diodes ea. with bracket.

Console

One CET aluminum fire application custom consol installed between seats with rocker switch. To be quickly identified and visible to the driver and passenger while seated, the rocker switches shall be installed on the top face of the console designed with a 40 deg. angle. This area shall be able to hold at least two rows of rocker switch. All switches shall be rocker style internally lighted and appropriately identified by panel mounted legends.

The first lighted rocker switch to be a red Master Optical Warning switch.

A master body disconnect automatic switch, normally open contacts, shall be provided to disconnect all electrical loads not provided by the chassis manufacturer. The starter solenoids shall be connected directly to the batteries.

Master battery disconnect that shut off the electronic board of the Cab & Chassis shall not be installed causing electronic failure and voiding Cab & Chassis warranty

All rocker switch to have a green "On" indicator that is visible from the driver's position shall be provided.

The console also have an area to accommodate a two way radio and two portable radios (supplied by A/H Fire Department).

A voltmeter shall be mounted on the console to allow direct observation of the system voltage.

All electrical components like breaker, relays, wiring etc. will be installed inside this customized consol and protected with an aluminum box. This consol will be design to easily gain access to those breaker, relays, wiring, etc.

Controls and switches that are expected to be operated by the driver while the apparatus is in motion shall be within convenient reach for the driver.

Console to be painted black herculiner bed liner style.



Emergency lighting

One (1) NFPA Code 3 Super LED Lightbar. Lightbar to be mounted on top of the Cab & Chassis.

1 x Traffic advisor module integrated into the rear of the light bar with control module installed inside cab on the console.

For Blocking Right-of-Way Mode of operation, white Super LED Inner lights (2) shall be turned off when parking brake is applied.

Mounted on front bush bar, Two (2) Whelen M4 series Linear Super LED, red with red lens, each with a chrome flange.

Mounted each side of the chassis, Two (2) Whelen M4 series Linear Super LED, one (1) each side, red with red lens with a chrome flange,

Mounted each side of the body, Two (2) Whelen M4 series Linear Super LED, one (1) each side, red with red lens with a chrome flange,

Mounted in the rear lower section of the body two (2) Whelen M4 series Linear Super LED, two (2) red with red lens, each with a chrome flange.

Mounted in the rear upper section of the body two (2) Whelen M4 series Linear Super LED, two (2) red with red lens, each with a chrome flange.

Siren & Speaker

One (1) Whelen, model # 2955LSA1, 100 watts electronic siren amplifier with PA and switch control center to be provided and installed.

One (1) Whelen, 100 watt speaker, to be provided and mounted into the light bar.

CET Fire Pumps Mfg Drop-In-Unit

Tank

The tank shall be equipped with a combination vent/overflow and manual fill tower. The fill tower shall have a 8" x 8" x 8" square drop-on type cover. The cover shall be fastened to the tower with a teather to prevent loss. The tower shall be located in the right rear corner of the tank. There shall be a vent / overflow installed inside and to the extreme rear of the tower approximately 2" down from the top. This vent / overflow shall be of a standard schedule 40 polypropylene pipe with minimum ID of 3". The vent / overflow shall be piped internally toward the front and exit out the front tank wall with a 1/2" extension past the front tank wall. The tank cover shall be constructed of 1/2" thick PT2E polypropylene, black in color, UV stabilized.

Tank will be baffles in accordance with NFPA bulletin 1901 requirements, latest version.

Tank Capacity

The tank shall have a capacity of 300 imperial gallon (360 U.S. gallons) of water. The tank shall be covered by the ALL OUT No Fault Life Time Warranty.



Sump

The floor of the tank shall be manufactured from 3/4" PT2E polypropylene. There shall be one (1) sump as standard per tank. The sump shall be integral to the tank floor and be a minimum of 3/8" deep recessed into the floor. The sump shall not be visible from or protrude through the bottom of the tank.

Tank Outlets

There shall be two standard tank outlets located in the same vertical plane on the driver side rear wall of the tank. One (1) 2-1/2" female NPT tank to pump suction fitting and one (1) 1-1/2" female NPT tank fill fitting with flow deflector.

1" Tank Drain

There shall be a 1" tank drain to the rear side of the tank with a brass plug.

Tank Mounting Blocks

The cover shall incorporate two (2) booster reel mounting blocks that shall be to accommodate two (2) each sliding nut fasteners. These 4" large mounting blocks shall be welded to the covers running from the rear edge of the tank forward.

Skid Base

There shall be a full width skid base manufactured of 3/4" PT2E polypropylene welded to the tank. This base shall be 48" wide by 96" long and shall extend 34" past the tank in the rear to allow for pump mounting. The pump mounting area shall be supported by 1/2" PT2E polypropylene gussets 15" high by 32" long. The gussets shall be equipped with 2" holes to assist in lifting the unit. The mounts shall allow for the truck to be secured directly to a truck bed without the need for any skid frame work underneath.

Mounting

The Drop-In-Unit shall be mounted in a manner that allows access to the engine, pump, and auxiliary systems for routine maintenance. The Drop-In-Unit shall not be welded or otherwise permanently secured to other components.

CET Pump, PFP-18hpHND-1D

The pump shall be a CET PFP-18hpHND-1D single stage centrifugal pump, bolted directly to the engine, with a 4" NPT suction inlet, and a 2.5" NPT discharge outlet. The volute and pump head shall be a lightweight, high strength, seawater resistant, aluminum alloy. The impeller shall be a bronze enclosed type for maximum efficiency, fully machined and balanced. The engine crankshaft shall serve as the pump shaft, with the impeller mounted directly on the crankshaft. The shaft seal shall be self-adjusting, self lubricating, mechanical type. The pump shall be equipped with a brass drain cock. The pump shall be equipped with an exhaust venturi type primer capable of 20' lift for fast positive priming.

The pump shall be capable of a maximum discharge volume of 425 us gpm (354 imperial gallon) at 25 psi at the pump discharge port, and a maximum discharge pressure of 100 psi while pumping 100 us gpm (83 imperial gallon) at the pump discharge port.

Engine

The pump shall be driven by a 2 cylinder, gasoline engine powered, 18 horsepower V-twin overhead valve engine. The engine shall be air cooled, 12 volt electric start and recoil rope starter as a back up system.

An external fuel tank shall be provided for the pump motor. It will be large enough to run the pump motor for one (1) hour at its rated capacity and pressure as per NFPA. Tank will be mounted with ease of filling in mind.

The engine shall be connected to the main battery of the truck with a quick disconnect adaptor.



Pump Controls

A control panel shall be supplied and installed on the pump. The controls shall consist of a master switch, start button, 2.5" diameter discharge pressure gauge, FRC electronic water tank level and one work light. The Throttle lever, choke control and a low oil pressure warning light are part of the engine configuration.

The performances are base on a maximum altitude of 500ft and any higher elevation will lower the pump performance. The standard engine performance drop are 3% for every 1000 ft

Centerline of any control shall be no more than 72 in. vertically above the ground or platform that is designed to serve as the operator's standing position.

The pump / engine shall be isolation mounted onto a steel base plate.

Plumbing and Valves

Intake and discharge piping shall not interfere with the routine maintenance of the pump, engine, or auxiliary systems and shall not unduly restrict the servicing of these components.

Suction Piping

All piping shall be schedule 40 steel piping, painted red. The suction piping shall consist of a 2.5" tank to pump line with a 2.5" flexible rubber hump hose to minimize flex and vibration between the pump and the tank. RIGID PIPING SHALL NOT BE ACCEPTABLE. Between the tank and the pump there shall be a 2-1/2" Fire Type, quarter turn swing out valve with a handle. This valve shall remain open to pump from the tank. This pipe shall have a tee into the suction side of the pump, and shall continue to the rear of the truck for overboard suction.

For ease of operation, a push/pull control rod shall be installed with a cast brass "Tee" handle for the inlet located between the tank and the pump.

The overboard suction connection shall have a 4" NST male adapter w/cap with retaining cable. To draft, the tank to pump valve shall be closed, a suction hose connected to the overboard suction connection and placed in a static water supply, and the primer activated.

Discharge Piping

All piping shall be schedule 40 steel piping or high pressure flexible hose. A 2.5" X 2.5" square steel manifold shall be piped directly to the discharge outlet of the pump. Attached to this discharge manifold, by means of welded steel pipe nipples, shall be all the discharge valves. All piping shall be painted red to match the pump.

Tank Fill

There shall be a 2-1/2" valve piped from the discharge manifold as a means for refilling the tank. The valve shall be an Fire Type, quarter turn swing out valve with a handle and shall be connected to the tank fill port by high pressure flexible hose.

2.5" Discharge to Rear

There shall be one (1) 2-1/2" valve piped from the discharge manifold to the rear of the truck bed. The valve shall be an Fire Type, quarter turn swing out valve with a handle and 2.5" CSA threads. The valve shall be furnished with a 2.5" cap and chain.



1" Tank Drain

There shall be a 1" drain to the rear of the truck bed with a brass plug.

Approximate weight of the Drop-In-Unit including hose reel(s) and full of water and other liquids is 3,500#.

Testing

The pump shall be tested after the pump and all its associated piping and equipment have been installed on the fire apparatus. The tests shall be conducted at the manufacturer's approved facility.

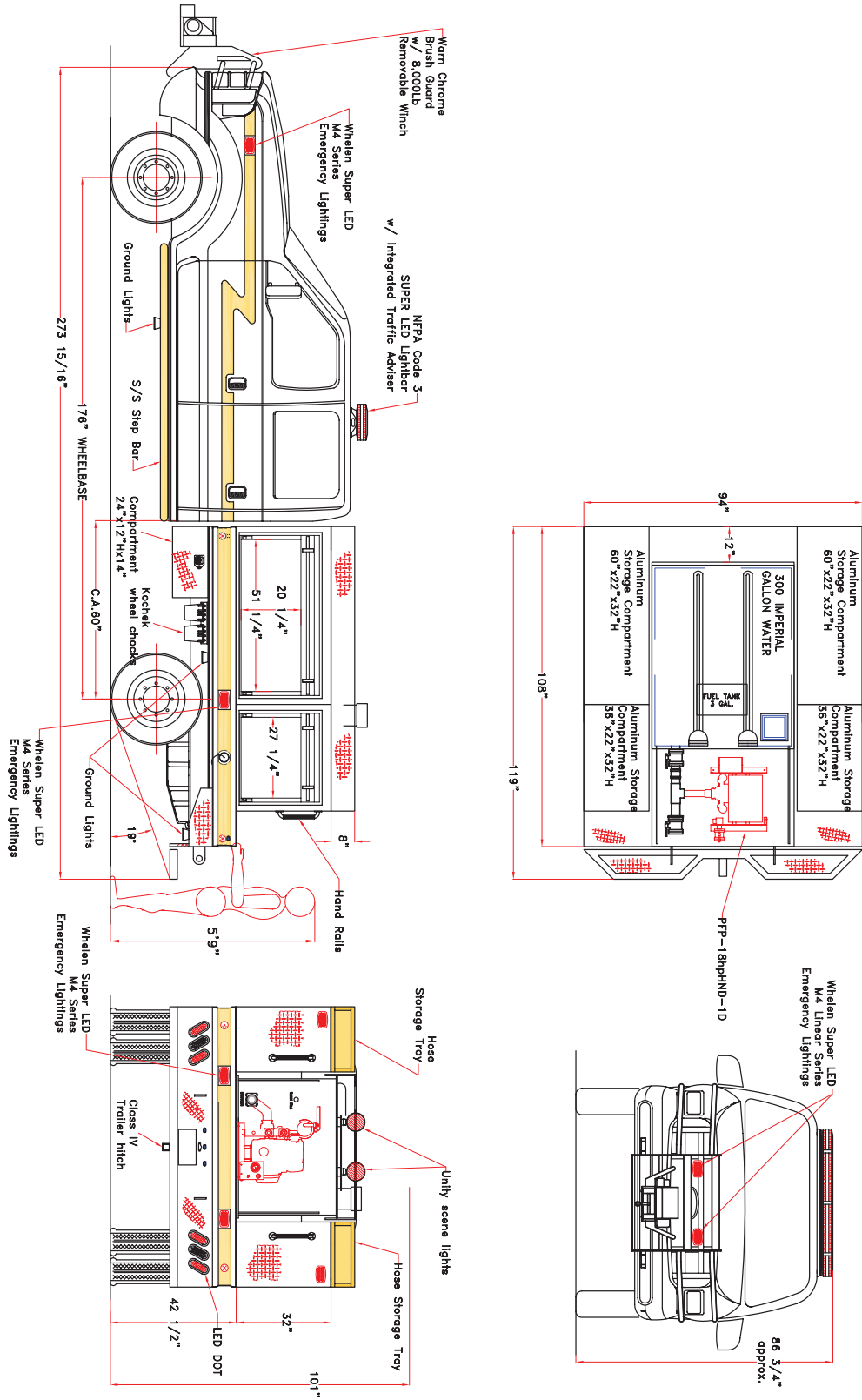
The testing shall include at least the pumping tests, the priming device test, the vacuum test. The water tank-to-pump flow test, and the piping integrity test.

Manufacturer's discretion

Materials, parts, or procedures used are subject to change at manufacturer's discretion at any time to provide equal or better products.

Complete apparatus built accordingly to NFPA 1906/1901 & DOT Compliant.





ACCEPT ONLY THE BEST™

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