



Chevy Cab & Chassis

Chevy Duramax 3500, 2 Doors, 4 x 4.

Wheel base to be 165".

Frame of the Chevy shall not exceed 134" long from the rear of the cab to the rear end.

Grille / Brush Guard

One (1) Warn black grille / brush guard which wraps to the outside of the front headlights shall be installed.

Lettering & Stripping

The finished apparatus shall be lettered to match the existing apparatus, the door logo shall be provided by the Fire Department. The Apparatus number shall be applied to each side of the chassis hood.

4" Reflective 3M stripping shall be applied on the Cab & the truck bed as per NFPA.

CET Flat Bed Body

One (1) custom Fire Application aluminum flat bed body, 134" (11' 2") long x 94" wide. The aluminum plate used in construction is 1/8" 3003-H22 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 4" wide x 6" high x 1/4" thick.

Aluminum headache rack with light bar platform and protective cross members.

Aluminum Side designed to embed emergency lighting.



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A CENTURY OF ENGINEERING FOR THE BRAVEST

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.

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

Rear mudflaps are provided.

Two (2) heavy duty tow eyes shall be installed at the rear of the body. The tow eyes will be fastened directly to each rear chassis frame rail.

The rear of the flat bed shall have two (2) non-skid rear steps for access to pump and controls. The rear steps shall be made so it can be folded up for use in rough terrain. All steps shall sustain a minimum static load of 500 lb (227 kg) without deformation (NFPA 1901 compliant). Stepping height from the ground to the first step shall not exceed 24".

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

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

Step / Platform

The deck shall feature a recessed area on the left and right side of the deck directly behind the cab. There will be a crosswalk between the two recessed areas. There will be two (2) safety gates installed for the safety of fireman, brand name to be Fire Research Mansaver bars. The recesses area will be approximately two (2) feet wide.

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.

The compartment floors shall be of sweep out design for easy cleaning.

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. Lift up door shall be installed with gas hold open struts.

All compartments floors will be covered with Plastic Tiles.

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 "D" ring handles and locks.

- R1 One (1) 66" long x 30" high x 22" deep compartments behind the chassis, located at the right side of the water tank.
One (1) 24" Halogen tube light is included in this compartment.
- L1 One (1) 72" long x 30" high x 22" deep compartments behind the chassis, located at the left side of the water tank.
Two (2) 24" Halogen tube lights are included in this compartment.
- L1 One (1) Adjustable shelf to be installed in the left side compartment.



- L2 One (1) Foam storage aluminum compartment. This compartment will have a top mount door with Lift & Turn latch. Compartment to accommodate two (2) five (5) gallon foam buckets.
- Rear One (1) integrated to the platform compartment approximately 5" high x 24" wide x 129" long for suction hose storage and folding ladders or pike poles. A flip down horizontally hinges door is furnished at the rear. The interior compartments is made from polished 3003-H14 alloy smooth plate. Steel frame underneath Drop-In-Unit shall not be acceptable

Hose Tray

At the top of the L1 compartment, one (1) aluminum pre-connected hose tray, 72" long x 20" wide x 8" high with Turtle plastic tile and protective net.

The Hose tray shall have a 1-1/2" Pre-Connect elbow.

The area shall be designed to prevent the accumulation of water and allow for ventilation to aid in drying hose in the storage area.

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 is lighted rocker type.

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

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.

Power control relays and solenoids shall have a direct current rating of 125 percent of the 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, Wiring only for the license plate lights and reflectors will be furnished per D.O.T.

Signal, brake and reverse lights will be furnished and recessed mount into rear bumper area of body :

One (1) back-up alarm that meets the type D (87 dba) requirements of SAEJ994 shall be provided at the rear of the apparatus. It will activate when the transmission is placed in reverse.

Battery charger

One (1) Kussmaul Auto Charge Kits, model 091-39-12-S-KIT1. Location of the installation is to be determined by the fire dept.. The Auto Charge kits include the Indicator, Automatic battery charger and a Auto Eject with red water proof cover.



Scene Lights

Two (2) Rear Unity scene light provided on the top of the rear R1 & L1 compartments. One (1) to be Floodlight, one (1) to be Spotlight.

Two (2) 300W telescoping 12v floodlights mounted at the front of the Truck Bed. The light shall be single head design. One light mounted on each side will increase visibility around the apparatus during night or light operations. Model is to be Fire Research FCA-512-D30-CL. Push-up poles to be 48" long.

Emergency lighting

One (1) Lightbar CODE 3, Excalibur model.

- 2 x 50W Standard Rotator, 2 x 50W Fast Rotator with 3 Diamond Mirror
- 2 x Alley Light
- 2 x 27W Stationary Halogen
- 2 x 35W MR-11 Stationary

Mounted on front Ford grill, Two (2) Whelen, 4E LED light, red, each with a chrome flange.

Mounted each side of the chassis, Two (2) Whelen, 4E LED light, red, each with a chrome flange.

Mounted each side of the body, Two (2) Whelen, 4E LED light, red, each with a chrome flange.

Mounted in the rear lower section of the body Two (2) Whelen, 4E LED light, red, each with a chrome flange.

One (1) wig-wag system will be installed with a control switch on the console.

Siren & Speaker

One (1) CODE-3, 3930 100 watts electronic siren amplifier with PA and switch control center to be provided and installed.

One (1) CODE-3 SL100 slim 100 watt speaker, to be provided and mounted on the front bumper.

Console

One CET aluminum consol installed between seats with lighted rocker switch. All switches shall be appropriately identified by panel mounted legends.

The consol will have an area to accommodate department map books, clipboards etc..

The console also have an area for radio head installation.

A Hand-Held / Tripod Spot Lamp installed on the console. Features, 1,500,000 C.P. for high intensity output ; Hand held base opens to become tripod base for a work light ; H3, 100 watt halogen bulb ; 20 ft. Power cord.

Map Light, 12" gooseneck Halogen, Havis Shield, model C-MAP-S, side mounted on the cab console.

There shall be a warning light installed in the chassis cab to illuminate and flash when a compartment door has been opened.

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.

A final layout shall be done at the pre-construction meeting.



CET Fire Pumps Mfg Drop-In-Unit**Tank**

The UPF Defender III series shall be constructed of 1/2" thick polypropylene sheet stock with AccTuf™ resin. The material shall be of a certified, high quality, non-corrosive, stress relieved thermo plastic, black in colour with a textured finish, and UV stabilized for maximum protection. The skid type booster tank shall be of a standard configuration and shall be so designed to have complete modular slide in capability. All joints and seams are to be fully nitrogen welded and electronically tested for maximum strength. The unit shall incorporate transverse partitions manufactured for 3/8" UPF PT2E polypropylene which shall interlock with a series of longitudinal partitions constructed of 1/2" PT2E polypropylene. All swash partitions shall be so designed to allow for maximum water and air flow between compartments and are fully welded to each other as well as to the inside of the tank. The passenger side rear wall of the tank shall have a standard built in sight gauge 2" in width, and 70% transparent.

Fill tower and tank cover

The tank shall be equipped with a combination vent/overflow and manual fill tower. The fill tower shall be an 8" round by 6" high with a moulded 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" extension past the front tank wall.

The tank cover shall be constructed of 1/2" thick PT2E polypropylene, black in color, UV stabilized, and incorporate an exclusive self locking design. The cover shall incorporate (4) 2" polypropylene for hold-down and lifting provisions. These dowels shall be tapered for 1/2" -13 threads to accommodate a lifting eye with a minimum security factor of 3 to 1. These dowel shall be welded into the transverse baffles, and will assist in minimizing cover flex during normal operation

Tank Capacity

The tank shall have a capacity of 225 U.S. gallons of water. The tank shall be covered by the UPF 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 5/8" 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) 3" female NPT tank to pump suction fitting and one (1) 1" female NPT tank fill fitting with flow deflector

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 mounting blocks shall be welded to the covers running from the rear edge of the tank forward.

Lifting Eyes

There shall be two removable lifting eyes to be included at the top of the tank.

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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 Diesel Pump, PFP-21hpKBT-MR

The pump shall be a CET PFP-21hpKBT-MR single stage centrifugal pump, bolted directly to the engine, with a 2.5" NPT suction inlet, and a 1.5" 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 balance. 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 electric type primer capable of 15' lift for fast positive priming.

The pump shall be capable of a maximum discharge volume of 240 g.p.m. at 50 psi, and a maximum discharge pressure of 175 psi while pumping 25 g.p.m. In the center of the performance curve, the pump shall be capable of pumping 160 g.p.m. at 100 psi and 100 g.p.m. at 150 psi.

Engine :

The pump shall be driven by a 3 cylinder, DIESEL engine powered, 21 horsepower. The engine shall be water cooled, 12 volt electric start.

The engine shall be fuelled from the engine Diesel tank. The engine shall be connected to the main battery of the truck.

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.

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 and one work light. The Throttle lever, choke control and a low oil pressure warning light are part of the engine configuration.

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.

1600 Series Foam Pro System

The Drop-In-Unit shall be equipped with an electronic, fully automatic, variable speed, direct injection, discharge side foam proportioning system. The system shall be capable of handling Class A foam concentrate. The foam proportioning shall be based on direct measurement of water flows and remain consistent within the specified flows and pressures. System must be capable of delivering accuracy to within 3% of calibrated settings over the advertised operation range when installed according to factory standards. The system shall be equipped with a control module suitable for installation on the pump panel. Incorporated within the motor driver shall be a microprocessor that receives input from the system flowmeter, while also monitoring foam concentrate pump output, comparing values to ensure that the operator preset proportional amount of foam concentrate is injected into the discharge side of the fire pump.

A paddlewheel flowmeter shall be installed in the discharge specified to be foam capable.



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The control module shall enable the pump operator to :

- Activate the foam proportioning system ;
- Select proportioning rates from 0.1% to 1.0%

A 12 volt electric motor – driven positive displacement plunger pump shall be provided. The pump capacity shall be 1.7 gpm (6.4 L/min) at 200 psi. The system will draw a maximum of 30 amps @ 12 VDC. The motor shall be controlled by the microprocessor (mounted to the base of the pump). It shall receive signals from the control module and power the 1/3hp electric motor in a variable speed cycle to ensure that the correct proportion of concentrate is injected into the water stream.

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

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

- Operator control module ;
- Paddlewheel flowmeter ;
- Pump and electric motor / motor driver ;
- Wiring harnesses ;
- Low – level tank switch ;
- 8 gallon Foam tank ;
- Foam injection check valve ;

The system design shall have passed environmental testing which simulates heavy use on off-road mobile apparatus with a 20 years life expectancy. Testing shall have been conducted in accordance to SAE standards.

8 gallon Drop-in integrated foam cell will be included. A label that reads “Foam” shall be placed at any foam concentrate tank fill opening.

Booster Reel

One (1) 12v Electric Rewind Booster Reel

One (1) Hannay 12v electric rewind booster reel capable of handling 150' of 1" diameter booster hose. The reel shall have a push button rewind control and a backup geared crank rewind handle. The reel shall be equipped with a 1" NPT 90 degree swivel inlet, and a 1" NST outlet riser. The reel shall be manufactured of steel and shall be primed and painted red. Reel to be installed on the right rear corner of the truck bed.

150' of 1" Neidner forestry booster hose shall be supplied and installed.

Booster Reel Rollers

One high mounted roller and spool assemblies shall be furnished and installed facing rear of the truck.

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 2.0" Akron self-locking swingout valve, model # 8820 and a R1 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.



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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 2.0" Akron self-locking swingout valve, model # 8820 and a R1 handle and 2.5" 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.

All valves larger than 1" shall be Akron self-locking swingout valves, with R1 style handles for ease of operation and maintenance. Any valve 1" or smaller shall be standard plumbing style valves.

Tank Fill

There shall be a 1" valve piped from the discharge manifold as a means for refilling the tank. The valve shall be an industrial, quarter turn valve handle and 1" NPT threads, and shall be connected to the tank fill port by 1" high pressure flexible hose.

Discharge to Booster Reel

There shall be a 1" valve piped from the discharge manifold to the booster reel. The valve shall be an industrial, quarter turn valve handle and 1" NPT threads, and shall be connected to the reel by 1" high pressure flexible hose.

1.5" Discharge To Rear

There shall be two (2) 1.5" valves piped from the discharge manifold to the rear of the truck for connection of forestry hose. Each valve shall be an Akron 8815, quarter turn self-locking swingout valve with a R1 handle and 1" NST threads. Each valve shall be furnished with a 1" NST cap and chain.

2.5" Discharge to Rear

There shall be one 2.0" valve piped from the discharge manifold to the rear of the truck bed. The valve shall be an Akron 8820, self-locking swingout valves with a R1 handle and 2.5" NST threads. The valve shall be furnished with a 2.5" cap and chain.

Garden Hose Discharge

There shall be a standard garden hose valve piped from the manifold of the pump.

1.5" Discharge to Preconnected Hosebed

There shall be a 1.5" valve piped from the discharge manifold to the hosebed. The valve shall be an Akron 8815, quarter turn self-locking swingout valve with a R1 handle and be connected to the hosebed by high pressure flexible plumbing. There shall be a 1.5" elbow located in the hosebed.



1.5" Discharges to side Whiplines

There shall be two (2) 1.5" valve piped from the discharge manifold to the pump & roll crosswalk. The valves shall be an Akron 8815, quarter turn self-locking swingout valve with a R1 handle and be connected by high pressure flexible plumbing to the pump & roll crosswalk with a 1.5" crosslay swivel. Whiplines to be located one each side of the bed and be accessible from the front recessed area platform.

1" Tank Drain

There shall be a 1" valve piped from the tank drain fitting to the rear of the truck bed. The valve shall be an industrial, quarter turn valve with a handle and 1" NPT female threads.

The Drop-In-Unit electricity will be connected directly to the main battery of the chassis.

Approximate weight of the Drop-In-Unit including hose reel(s) and full of water and other liquids shall be given before production.

Front Mounted Monitor

A Elkhart Sidewinder or equivalent monitor shall be supplied and installed at the front of the truck.

An electronic controlled monitor shall be installed on the front of the vehicle. It shall be installed off center on the passenger side of vehicle. Plumbing shall be 1.5" high pressure hose. Included in the monitor package shall be :

Ability to charge monitor from cab location with an electric valve. Joystick mounted on center console accessible by both driver and passenger side. Joystick shall control up/down, left/right and fog/straight stream operation. An electronic water level gauge shall be placed in cab, model to be MC Product horizontal mini display level gauge. Monitor will include electronic nozzle capable of flows not less than 200 gpm.

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.

Other item included

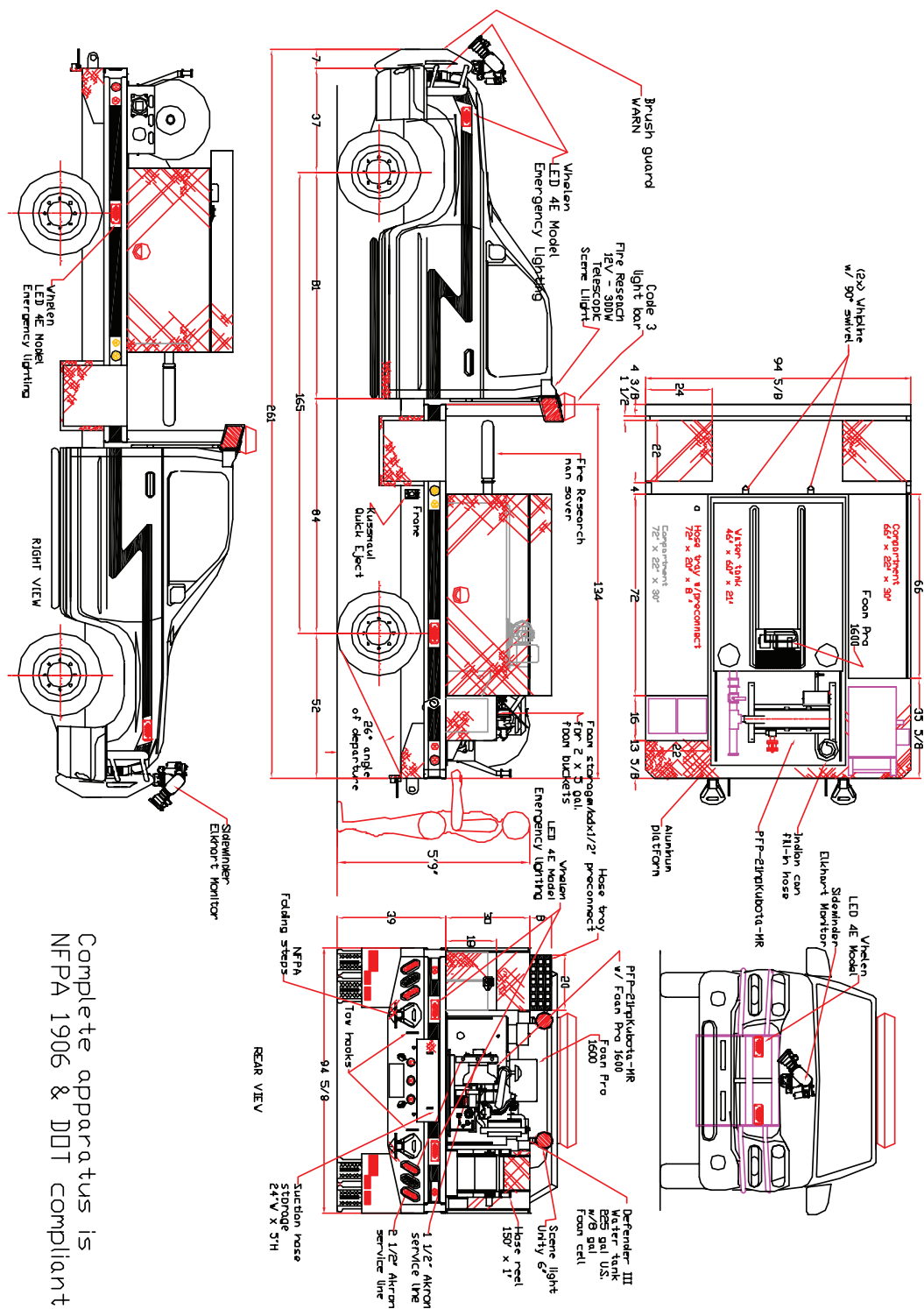
Medium Kochek Wheel Chocks installed under the Truck bed with Horizontal storage bracket.

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 & DOT Compliant.





Complete apparatus is
NFPA 1906 & DOT compliant

