



GALES FERRY V.F.C.

**SPECIFICATIONS: Ford 550 Regular Cab 60" CA Rally B.R.A.T Jan 20,
2025**

Manufacturer:

Firematic Supply Co. Inc.
10 Ramsay Road
Shirley, NY 11967
631-924-3181

INTENT OF SPECIFICATIONS

It shall be the intent of these specifications to cover the furnishing and delivery of a completed apparatus equipped as hereinafter specified. These specifications cover only the general requirements as to the type of construction and test to which the apparatus shall conform, together with certain details as to finish, equipment and appliances with which the successful bidder shall conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor, who shall be solely responsible for the design and construction of all features. Loose equipment shall be provided only as stated in the following pages.

DRAWINGS

Each bidder shall supply CAD designed drawings of the vehicle as proposed. Views shall include both side front and rear. **Drawings are to be included with bid.** *Failure to supply actual drawings as per the following specifications with the bid shall be cause for rejection of bid.* Shop sketches, or hand-drafted renderings are not acceptable. Drawing shall show full pump panel detail. No Manufacturing or shearing shall take place until the drawings have been signed off at the pre construction conference. Any final design alterations shall be at the discretion of the committee.

QUALITY AND WORKMANSHIP

The design of the apparatus shall embody the latest approved automotive engineering practices. The workmanship shall be of the highest quality in its respective field. Special consideration shall be given to the following points: Accessibility of the various units, which require periodic maintenance, ease of operation (including both pumping and driving) and symmetrical proportions. Construction shall be rugged and ample safety factors shall be provided to carry the loads specified and to meet both on and off road requirements and speed conditions as set forth under "Performance Tests and Requirements". Welding shall not be employed in the assembly of the apparatus in a manner that shall prevent the ready removal of any component part for service or repair.

DELIVERY

Apparatus, to insure proper break in of all components while still under warranty, **shall be delivered under its own power** - rail or truck freight shall not be acceptable. A qualified delivery engineer representing the contractor shall deliver the apparatus and remain for a sufficient length of time to instruct personnel in the proper operation, care and maintenance of the equipment delivered.

INFORMATION REQUIRED

The manufacturer shall supply at time of delivery, complete operation and maintenance manuals covering the completed apparatus as delivered. A permanent plate shall be mounted in the driver's compartment which specifies the quantity and type of fluids required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.

PERFORMANCE TESTS AND REQUIREMENTS

The truck shall be compliant to the NFPA 1906 standard. At final inspection, there will also be a road test conducted with the apparatus fully loaded and a continuous run of ten (10) miles or more shall be made under all driving conditions, during which time the apparatus shall show no loss of power or overheating. The transmission drive shaft or shafts, and rear axles shall run quietly and be free from abnormal vibration or noise throughout the operating range of the apparatus.

FAILURE TO MEET TEST

In the event the apparatus fails to meet the test requirements of these specifications on the first trial, second trials may be made at the option of the bidder within 30 days of the date of the first trial. Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection. Failure to comply with changes to conform to any clause of the specifications, within 30 days after notice is given to the bidder of such changes, shall also be cause for rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the purchaser or its use by the purchaser during the above-specified period with the permission of the bidder shall not constitute acceptance.

GENERAL CONSTRUCTION

The apparatus shall be designed with due consideration to distribution of load between the front and rear axles. Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Association.

COMMERCIAL GENERAL LIABILITY INSURANCE

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

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

Coverage shall be written on a Commercial General Liability form. The policy shall be written on an occurrence form and shall include Contractual Liability coverage. The policy shall include owner as an additional insured as their interest may appear.

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

Coverage shall be provided by a carrier(s) rated "Excellent" by A.M. Bests.

UMBRELLA/EXCESS LIABILITY INSURANCE

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

Aggregate: \$4,000,000

Each Occurrence: \$4,000,000

The policy shall be written on an occurrence basis and at a minimum provide the same coverages as insured, Automobile Liability and Employer's Liability policies. Owner shall be included as an additional insured on the General Liability and Automobile Liability policies as their interest may appear. The required limits can be provided by one or more policies provided all other insurance requirements are met.

Bidder agrees to furnish owner with a current Certificate of Insurance with the coverage listed above. The certificate shall be made out to the purchaser and be an original, no photocopies shall be accepted. The Certificate of Insurance shall provide that owner be given 30 days advance notice of cancellation, nonrenewable or material change in coverage.

MAXIMUM OVERALL HEIGHT

The maximum overall height of the apparatus shall be 96.00".

MAXIMUM OVERALL LENGTH

The maximum overall length of the apparatus shall be 258.00"

WARRANTY

The manufacturer shall warranty each piece of new fire or rescue apparatus to be free from defects in materials or workmanship under normal use and service. The manufacturer's obligation under this warranty is limited to repairing or replacing, as the company may elect, any parts thereof which are returned to them, with transportation costs prepaid and as to which examination is disclose to the company's satisfaction to have been defective. The part, or parts, shall be returned to the manufacturer not later than **one (1) year** from delivery of the apparatus. Such defective part, or parts, shall be repaired or replaced free of charge and without charge for installation to the original purchaser.

LIFETIME BODY WARRANTY

The body and subframe assembly shall be warranted against defects in material and workmanship for the lifetime of the apparatus from the date of delivery.

This warranty shall not apply:

- 1) To normal maintenance and adjustments.
- 2) To any vehicle which has been repaired or altered outside of the factory in any way so that, in the manufacturer's engineer's judgment, it would affect the stability. Also it shall not apply to any vehicle, which has been subject to misuse, neglect, or accident, or to any vehicle, which shall operate at any speed, exceeding the factory rated speed, or loaded beyond the factory rated load capacity.
- 3) To commercial chassis and associated equipment furnished with the chassis, signaling devices, generators, batteries, or other trade accessories in which they are usually warranted separately by their respective manufacturers.

This warranty is in lieu of all other warranties, expressed or implied, all other representations to the original purchaser and all other obligations or liabilities, including liability for incidental or consequential damages on the part of the company. The manufacturer neither assumes or authorizes any other person to give or assume any other warranty or liability on the company's behalf, unless made or assumed in writing by the company.

CHASSIS

2026 – Ford 550 XL chassis 19,500 MGWV
2 Door Cab
4 x 4 Drive Train
Powerstroke Diesel Engine 6.7 L 330 H.P.
10-Speed Electric OD Transmission
Dual 78 AH Batteries
Dual 220 AMP Alternators
10-Speed Electric OD Transmission
Power Steering
Power Brakes
Vinyl bench seats
Ford Oxford White Paint
Wheel Base 145.00”
XLT Trim package, Max Aero Headlights
4-Wheel ABS Brakes
Driver and Passenger Air Bags
Power windows and locks
Manual telescoping/folding trailer mirrors w/ power/heated glass
Front and Rear Tow Hooks
Radio ETR AM/FM Stereo with Clock
Maximum Front GAWR Package
Air Conditioning
Daytime Running Lights
40 Gallon Fuel tank, centered between rear frame rails
Fuel Tank Skid Plate
Factory Backup Camera
Roof clearance lights
Fire/Rescue Prep Package
Engine Block Heater
NFPA compliant Ember protection (air filter and ember separator for cab)

All modifications, equipment, maximum manpower, and carrying capacity of water must not exceed the manufacturers (Ford) maximum GVWR of 19,500 lbs.

OVERALL DESIGN

The body for the brush truck will be manufactured entirely of aluminum. The roll bars and aluminum diamondette will also be aluminum. No exceptions will be allowed in regards to the aluminum material. The body will be 112" overall length and the overall width shall not be less than or exceed the overall width of the factory Ford rear axle, including the hubs, which is approximately 94".

There will be a 300 gallon Pro Poly water tank with a lifetime warranty.

The four (4) compartments will be .125" diamond plate with aluminum swing up doors.

The pump will be a Waterous E-511 diesel pump.

One (1) Class A hitch will be supplied at the rear body with a 7 pin trailer plug.

FLAT DECK BODY

The body will have a 6" x 4" x 3/8" aluminum angle perimeter and the front corners will have angled ends.

The sub-structure will be made of 2" x 4" x .250" aluminum 5052 fabricated sheet. Two main front to rear rails will be installed, made of 2" x 4" x .250" aluminum 6061 T6 rectangular box tubing.

The floor will be 3/16" aluminum and the entire flat bed will be stitch welded.

The body will be 112" long and approximately 94" wide as stated in above paragraph and secured to the truck chassis with 2-5/8" U-bolts, two 3/8" aluminum plates welded to the rails and bolted to the truck frame rails midway along the body and two steel 1/2" plates at the rear which will be bolted to both the body rails and frame rails.

There will be a 1/2" x 3" die cut #70 durometer rubber isolation plate installed between the body and truck frame rails.

A rear apron made with 5086 aluminum tubing with a .145" wall and .125" diamond plate will be installed to house the brake and turn signal lighting. The tubing will be bent on a movable Mandrel hydraulic bender with a 6.5" bend radius to reduce stress and provide a wrinkle free and continuous wall thickness.

The diamond plate will cut to the shape of the apron and stitch welded to the front side of the tubing. The entire apron will bolt on to the underside rear corners of the bed with stainless 3/8" button head cap screws.

ROLL BAR AND BODY PROTECTION

The roll bar has been engineered to give rollover protection to the cab.

The roll bar will be made of 1 ½" 5086 aluminum tubing with a .145" wall. It will be crossed braced with the same tubing. The roll bar will be braced into the compartments and be mounted to the front of the deck by welded on ¼" aluminum bases and 3/8" s/s bolts.

TRANSVERSE TOOLBOARD

A 12" transverse space will be left between the roll bar and water tank. An adjustable aluminum tool board will be centered front to back in the space and slide on a top and bottom nylon track out of both sides of the area.

FRONT GRILL AND BRUSH GUARD

A Warn Heavy Duty Ascent ¼" steel bumper and grill guard will be installed on the front of the truck. A Warn 15,000lb electric winch will be installed in the center of the bumper. The entire bumper will be powder coated black.

SIDE STEPS

Two (2) under the cab, 1.5" 5086 aluminum pipe side steps, topped with skid resistant NFPA compliant diamond plate will be installed.

UNDERBODY SKID PLATES

Two removable skid plates will be installed under the chassis. Both plates will be a minimum of ¼" and will be easily removed for chassis service via grade (8) bolts and welded on mounts.

The plates will be installed:

- A) Below the engine oil pan and transmission
- B) From below front bumper, angled down to in front of axle.

SUPER SINGLE WHEEL CONVERSION

The apparatus will be delivered with forged aluminum one-piece reversible wheels. They allow single rear wheels and new front wheels. The wheels are reversible, so each wheel can be put in any position on the vehicle.

The wheels will be 19.5" diameter with matching hub and stud location. They will be powder coated black.

A 2.5" suspension lift consisting of steel spacers on the front coil springs, a new track bar bracket, two (2) new shocks and drop brackets for the radius arms will be installed in the front. A 2.5" steel block with new u-bolts will be installed in the rear.

TIRES

A Firematic Founders MT 305/70R19.5 aggressive tread Radial mud tire that allows for the proper overall weight of the apparatus will be installed on the special rims. Brass valve stems will be required. The entire rim and tire will be balanced. Inflation pressure will be 110 psi. A mounted and balanced spare wheel/tire will be supplied.

WATER TANK

The water tank will be of Poly material and will have a lifetime guarantee. The tank will be of rectangular design 48" wide x 60" length x 30" high and holds 300 gallons of water. The tank will have two (2) bucket fill hinged doors located at the forward portion of the tank.

The water tank will have a 4" overflow thru the floor of the tank and will be part of the top fill box assembly. A tank to pump line will be provided via a 3" NPT bushing. The bushing will be installed at the rear of the tank on the driver's side, one inch from the floor and two inches in from the left side. A tank refill line will be provided in the rear wall, the bushing will be 1 1/2" NPT.

One (1) Fire Research water level five (5) light indicator will be installed on the pump console and a slaved mini-indicator shall be supplied in the custom console in the cab.

The tank will have a front and rear two bolt "L" bracket mount that is an integral part of the tank.

PUMP

The pump unit is a Waterous E-511 and the pump body shall be made of alloy aluminum castings coupled together with a stainless steel band clamp with an O-ring seal which allows quick pump volute removal for servicing. The pump end shall be factory hydrostatically tested to 250 PSI for 10 minutes. The impeller shall be bronze. The renewable clearance rings shall be made of anodic plated bronze to inhibit galvanic corrosion. The impeller shall be 8.75 inches in diameter and designed with a sleeve back end to prevent water from coming in contact with the engine shaft. The pump shaft seal shall be an automatically adjusting, maintenance free, mechanical type. The pump body shall be equipped with a petcock drain valve.

The engine shall be a 4-cycle diesel Kubota 24BHP, overhead valve, liquid cooled design. Engine rating shall be 24 BHP at 3600 rpm.

A 12-volt electric system shall be provided with an electric starter and a 30-amp alternator. The engine shall be equipped with a residential muffler with USDA approved spark arrestor. Also, a Waterous electric primer will be installed. The fuel system will be plumbed into the chassis fuel tank.

INLET PIPING

A 3" tank to pump line will be installed with an Akron Brass manual ball valve for the tank to pump. A direct handle to open/close the valve will be installed on the valve. A check valve will be installed between the valve and the pump with the check towards the tank.

A 2.5" brass manual ¼ turn valve with chrome ball handle will be installed at the pump inlet. It will have a female swivel NH thread with chrome plug. It will be installed on a flange welded to a tee at the inlet of the pump. This line will allow positive water to the pump from another apparatus or hydrant.

DISCHARGE MANIFOLD

An all-stainless steel 304 L 3" square manifold will be supplied. The manifold will have mounting legs made of ¼" 304 L – stainless steel as well as the two ends which will be ¼" 304 – L – also. The manifold will be TIG welded and tested to 400 PSI.

All of the discharge nipples will be stainless steel and tig welded. The nipples will be installed to allow sufficient room for the discharge valves. A drain valve will be installed in the bottom and piped via hose to below the frame rails.

The manifold will supply two (2) 1" discharge for the booster reels, one (1) 1.5" discharge for one (1) preconnect, two (2) 2.5" rear direct discharges that will come with chrome caps, reducing to 1.5", and one (1) tank fill/recirculation valve.

All discharge valves will be Akron Brass remote handle ¼ turn valves (except for the electric 1") and will have NH male threads and their appropriately sized chrome caps with chain.

BOOSTER REELS

Two (2) Hannay SBEF30-23-24 aluminum reels that will be able to hold 200' of 1" high pressure booster hose, will be mounted under the front corners of the flatbed, one (1) per side. The reel will be plumbed from the manifold with 1" high pressure flex hose. An electric rewind push button will be installed, on the reel itself.

There will be brush guards made from 1.5" 5086 aluminum pipe and ¼" aluminum plate, that will protect the reels along the bottom and rear. Reels will come with 1" red lightweight booster hose and an Elkhart Chief pistol grip nozzle.

A crank backup assembly will be supplied also.

SPEEDLAY

At the front of the body at the top of the roll bar, one (1) speedlay bed will be installed. The bed will be plumbed with flexible high-pressure hose and have a male 1 ½" NH outlet at the front of the bed. The bed will accommodate a minimum 200' of 1 3/4" hose.

Black nylon netting with quick release fasteners will be installed on the rear of the beds.

OPERATOR CONTROL PANEL

A rear mount pump operator's panel will be provided. The panel will be constructed of aluminum and have a black powder coating. The panel will contain the following:

- One (1), Waterous Pump control panel
- One (1), Fire Research Tankvision water level gauge

HOSEBED AREA

Centered above the pump area and water tank will be a deadlay bed to hold a minimum of 500' of 3" hose. The floor will be yellow fiberglass grating with a non-skid surface. Also, there will be one (1) aluminum adjustable divider.

Above the passenger's side compartment, will be an aluminum bed for department supplied hose. Black nylon netting with quick release fasteners will be installed on the rear for hose retention. One (1) Ziamatic black Velcro strap will be installed over the center of the hose bed for hose retention.

SUCTIONS

Above the passenger's side compartments will be installed aluminum trays for three (3) supplied 8' lengths of 2.5" PVC suction hoses.

One (1) Ziamatic black Velcro strap will be installed over the center of the suction hoses for hose retention.

MAIN COMPARTMENTS

Two (2) compartments, 48" long by 18" deep x 30" high, will be installed on both the driver's side and the passenger's side of the deck. The walls and roof will be made of .125" brite dip aluminum diamondette. The doors will be made from aluminum diamond plate and will have stainless steel piano style hinges to allow doors to swing up. Polished stainless steel "D" ring latches will be installed on the lower door.

All compartments will have 'sweep out' style floors and two Lumabar™ 20" lights mounted on both sides of the swing up doors and will have magnetic door switches to control the lights. An adjustable shelf will be provided for each driver's and passenger's side compartment.

A door switch will be wired to the "Door Open" warning light on the dash for each compartment.

In each of the compartments, a 12 volt power outlet will be installed in the upper part of the compartment. Dri-deck rubber matting will be on the floors and shelves of the compartments.

REAR BUMPER AND HITCH

There shall be a complete steel substructure designed to provide a minimum departure angle of 20 degrees. The structure shall also be designed to accommodate the weight ratings associated with a class 4 hitch. There will be an 8" deep x 72" wide step with diamond plate cover installed. The 2" receiver hitch shall be centered under the rear step bumper. The hitch shall have heavy duty "D" rings for the trailer safety chains.

A 7-wire trailer plug shall be provided at the rear with a weatherproof cover and have 12volt battery.

Also, four (4) fold down steps with integrated LED lighting will be installed. Two (2) on the driver's side and two (2) on the passenger's side rear of the body. Knurled aluminum grab rails will also be installed on either side of the pump area.

BACK UP ALARM

There will be an electronic beeper that sounds when the truck is placed in reverse. The beeper will be heard over all engine noise to warn persons near or on the truck.

ELECTRICAL

All 12-volt electrical equipment installed by the apparatus manufacturer shall conform to SAE automotive electrical practices. All wiring shall be high temperature crosslink type. Wiring shall be run, in loom or conduit, where exposed and have grommets where wire passes through sheet metal. Automatic reset circuit breakers shall be provided which conform to SAE Standards. Wiring shall be color, function and number coded. Function and number codes shall be continuously imprinted on all wiring harness conductors at 2.00" intervals. Exterior exposed wire connectors shall be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids. Electrical wiring and equipment shall be installed utilizing the following guidelines:

(1) All holes made in the roof shall be caulked with silicon. Rope caulk is not acceptable. Large fender washers, liberally caulked, then tested for water leaks, shall be used when fastening equipment to the underside of the cab roof.

(2) Any electrical component that is installed in an exposed area shall be mounted in a manner that shall not allow moisture to accumulate in it. Exposed area shall be defined as any location outside of the cab or body.

(3) Electrical components designed to be removed for maintenance shall not be fastened with nuts and bolts. Metal screws shall be used in mounting these devices. Also, a coil of wire shall be provided behind the appliance to allow them to be pulled away from mounting area for inspection and service work.

(4) Corrosion preventative compound shall be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections shall require this compound in the plug to prevent corrosion and for easy separation (of the plug).

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

(6) All electrical terminals in exposed areas shall have ECK™ corrosion preventative applied completely over the metal portion of the terminal. All emergency light switches shall be mounted on a separate panel installed in the cab. A master warning light switch and individual switches shall be provided to allow preselection of emergency lights. The light switches shall be "rocker" type with an internal indicator light to show when switch is energized. All switches shall be properly identified and mounted in a removable panel for ease in servicing.

Identification of the switches shall be done by either printing or etching on the switch panel. The switches and identification shall be illuminated.

All lights and reflectors required to comply with Federal Motor Vehicle Safety Standard #108, shall be furnished. Rear identification lights shall be recessed mounted for protection.

CONSOLE AND WIRING CENTER

An all Aluminum #3003 alloy console will be manufactured and powder coated black. The console will hold 2 department supplied mobile radios, along with vendor supplied siren controls, and lighting controls in the front portion. Firematic will install the department supplied radios, antennas, microphones and speakers. (Programming of the radios will be up to the department).

A Whelen CenCom Core siren and light control system will be installed with 3 position slide switch and 21 push buttons for different emergency responses. The system controls all emergency lighting and sirens with different tones. A microphone with CCMICX20 is included. A Whelen 100-watt SA315P speaker will be mounted under the front bumper.

The console will be permanently installed between the two front bucket seats. The rear section of the console will have a removable top & side door for access to all 12v electric equipment, wiring & controls for the entire fire body & equipment. It will be even with the back of the front seats. It will also have two cup holders, a dual USB port and a "DO NOT MOVE APPARATUS" light.

An FRC mini tank vision water level indicator will be installed in the console.

LIGHTING

Roof Light – A Whelen Liberty II DUO LED 54" long light bar will be installed. The bar will be fully populated with the driver's side and the passenger's side having red/white lights. There will also be front take downs and side alley lights.

The lightbar will be installed on the top of the cab roof.

Grill and Intersection lights – One (1) Whelen M6DD red/white DUO LED grill light will be installed on the driver's side grill. One (1) Whelen M6DD red/white DUO LED grill light will be installed on the passenger's side grill. Lights will have a chrome bezel & clear lens.

Also, one (1) Whelen M6DD red/white DUO LED light will be installed on the driver's side of the front bumper. One (1) Whelen M6DD red/white DUO LED light will be installed on the passenger's side of the front bumper. Lights will have a chrome bezel & clear lens.

Spotlight – One (1) remote controlled Whelen Argus LED spotlight will be mounted on the driver's side front fender. A joystick controller will be mounted on the console.

Upper Side Lights -

Two (2) Whelen M9RC LED lights (Red LED / White Scene / Clear Lens / Chrome Bezel) will be installed on the driver's side above the compartments. Two (2) FireTech Guardian Elite Surface Mounted LED Scene Lights will be installed inboard of the M9 warning lights with diamond plate deflectors.

Two (2) Whelen M9RC LED lights (Red LED / White Scene / Clear Lens / Chrome Bezel) will be installed on the passenger's side above the compartments. Two (2) FireTech

Guardian Elite Surface Mounted LED Scene Lights will be installed inboard of the M9 warning lights with diamond plate deflectors.

Lower Side Lights-

Two (2) Whelen T-Ion's red/white DUO LED lights will be installed on the driver's side recessed in the flatbed perimeter. Lights will have a chrome bezel & clear lens.

Two (2) Whelen T-Ion's red/white DUO LED lights will be installed on the passenger's side recessed in the flatbed perimeter. Lights will have a chrome bezel & clear lens.

All D.O.T. mandated lighting will be installed.

Rear lights – A TecNiq K70 series rectangular LED brake –tail – directional lights will be mounted horizontally, but stacked one over the other, below the body. The lights will be mounted in chrome bezels.

Also, two (2) Whelen M6 lights will be installed on the driver's side rear of the truck. One (1) M6RC LED lights (Red LED / White Scene / Clear Lens / Chrome Bezel) at the top of the compartment and one (1) Whelen M6DD red/white DUO LED (chrome bezel & clear lens) inset of the stop/tail/turn lights on the apron.

Also, two (2) Whelen M6 lights will be installed on the passenger's side rear of the truck. One (1) M6RC LED lights (Red LED / White Scene / Clear Lens / Chrome Bezel) at the top of the compartment and one (1) Whelen M6DD red/white DUO LED (chrome bezel & clear lens) inset of the stop/tail/turn lights on the apron.

Two (2) FireTech Guardian Junior Surface Mounted LED Scene Lights will be installed inboard of the M6 upper warning lights on each side.

Pump Panel lights – Two Lumabar™ 20" H2O LED lights will be installed on the rear of the truck above the panel.

Also, two (2) PIAA LP530 amber driving lights in black housings will be installed in the front with a separate on/off switch on the console.

Rear Traffic Advisor - A Whelen TANF85 amber LED traffic advisor will be installed in the rear of the body inset in the cover/step extending back from the rear of the hose bed. The advisor will be controlled from the CenCom controller on the cab dash.

License Plate Holder – A lighted license plate holder will be installed centered in the rear of the diamond plate apron.

Underbody lights- A total of eight (8) TecNiq E10 LED lights will be installed, two (2) under the front bumper, three (3) on the left and three on the right side of the truck. One (1) centered under the of the cab steps, one (1) under the underbody box and one (1) behind

the mudflaps angled towards the rear tires. Lights will have their own dedicated console switch.

BATTERY CHARGER

There will be a Kussmaul Chief, 45-amp battery charger provided.

The battery charger will be wired to the AC shoreline inlet through an AC receptacle adjacent to this battery charger.

Battery charger will be installed in the driver's side front compartment as forward and high as possible.

AUTO EJECT FOR SHORELINE

There will be one (1) Kussmaul™, 20-amp 120-volt AC shoreline inlet(s) provided to operate the dedicated 120 volt AC circuits on the apparatus.

The shoreline inlet(s) will include red weatherproof flip up cover with digital display, Model 091-55-194B-RD.

There will be a release solenoid wired to the vehicle's starter to eject the AC connector when the engine is starting.

The shoreline(s) will be connected to the battery charger.

There will be a mating connector body supplied with the loose equipment.

There will be a label installed near the inlet(s) that states the following:

- Line Voltage
- Current Rating (amps)
- Phase
- Frequency

The shoreline receptacle will be located on the driver side front underbody compartment under the body.

WINCHES

Two (2) Warn 15,000lb electric winches will be installed, one (1) in the front bumper and one (1) in the rear apron of the body. The winches will come with 80 feet of synthetic rope, a roller fairlead and a removeable wired remote, for each winch.

CHASSIS PAINT

The lower half of the chassis shall be painted Ford Race Red (exact split line location TBD during pre-construction meeting),

The procedure will consist of a seven (7) step finishing process as follows:

1. Manual Surface Preparation - All exposed metal surfaces on the custom body will be thoroughly cleaned and prepared for painting. Surfaces that will not be painted include all chrome plated, polished stainless steel, anodized aluminum and bright aluminum treadplate. Each imperfection on the exterior metal surface will be removed or filled and then sanded smoothly for a smooth appearance. All seams will be sealed before painting.
2. Chemical Cleaning and Treatment - The aluminum surfaces will be properly cleaned using a 4-phase, high pressure and high temperature acid etching system. All steel surfaces will be properly treated using a 3-phase, high temperature, cleaning/phosphatizing system. Surfaces are chemically cleaned to remove all dirt, oil, grease and metal oxides to ensure the subsequent coatings bond well. An ultra pure water final rinse of 25 parts per million solids or less, will be applied to final rinse all metal surfaces at the conclusion of the metal treatment process. This final rinse ensures all chemical residues are removed and that no minerals, (salts), from the water dry onto the metal surface and remain under the primers and topcoats. These salts can lead to blistering and under film corrosion.
3. Primer/Surfacer Coats - A minimum of two (2) mil dry, (.002), of two component urethane primer/surfacer will be hand applied to the chemically treated metal surfaces to provide a strong corrosion protective base coat and to smooth out the surface. The primer is a high solids and low VOC paint.
4. Hand Sanding to Ultra Fine Finish The primer/surfacer coat is lightly sanded with mild abrasive paper to an ultra smooth finish. This hand finish process is critical to produce the smooth mirror like finish in the topcoat.
5. Sealer Primer Coat A two- (2) component sealer primer coat is applied over the sanded primer to build toward the final smooth finish. This layer of primer sealer also gives additional corrosion protection.
6. Topcoat Paint Two (2) coats of an automotive grade, two component acrylic urethane paint are applied to provide lasting beauty and durability. The acrylic urethane topcoat contains a clear coat resin chemistry that creates the high gloss and depth of image. This type of topcoat provides the best resistance against acid rain and other more common chemicals.
7. Clearcoat - Two (2) coats of automotive grade two (2) component urethane will be applied. Lap style doors will be clear coated to match the body. Roll-up doors will not be clear coated, and the standard roll-up door warranty will apply.

Each batch of color topcoat, together with the finish painted vehicle, is tested for precise color match. Visual color match will be checked following ASTM D-1729, (American Standard Testing Methods), procedures using CIE, (International Commission on Illumination), D75 Northern Daylight light source. Instrumental color match will follow ASMT D-2244 procedures with a maximum delta E of 1.0 for whites, 1.4 for yellows, blues, greens and 1.5 for reds.

All removable items such as brackets, compartment doors, door hinges, trim, etc. will be removed and painted separately to insure paint behind all mounted items. Body assemblies that cannot be finish painted after assembly will be finish painted before assembly.

PAINT - ENVIRONMENTAL IMPACT

The contractor will meet or exceed all current State regulations concerning paint operations. Pollution control will include measures to protect the atmosphere, water and soil. Controls will include the following conditions:

- Topcoats and primers will be chrome and lead free.
- Metal treatment chemicals will be chrome free. The wastewater generated in the metal treatment process will be treated on-site to remove any other heavy metals.
- Particulate emission collection from sanding operations must have a 99.99% efficiency factor.
- Particulate emissions from painting operations will be collected by a dry filter or water wash process. If the dry filter means is used, it must have an efficiency rating of 98.00%. Water wash systems will be 99.97% efficient.
- Water from water wash booths will be reused. Solids will be removed mechanically on a continual basis to keep the water clean.
- Paint wastes are disposed of in an environmentally safe manner. They are used as fuel in kilns used in the cement manufacturing process - thereby extracting energy from a waste material.
- Empty metal paint containers will be cleaned, crushed and recycled to recover the metal.
- Solvents used in clean-up operations will be collected, recycled on-site, or sent off-site for distillation and returned for reuse. Residue from the distillation operation will be used as fuel in off-site cement kilns.

REFLECTIVE STRIPES

One 5" 3M Scotchlite reflective stripe shall be provided along the sides of the chassis and body.

REAR CHEVRON STRIPING

There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus. Covered surfaces shall include the rear body perimeter beam and body apron.

The colors shall be Red/Yellow Diamond Grade Scotchlite. Each stripe shall be 6.00" in width. This shall meet the requirements of NFPA 1901, 2009 edition, which states that 50% of the rear surface shall be covered with chevron striping.

EZ GOLD LETTERING AND GRAPHICS

A complete graphics package consisting of EZ Gold appearance lettering striping and emblems will be supplied to match existing Fire District equipment.

Two (2) smooth painted graphics panels will be installed above the side compartments on the body with department specified graphics.

END OF SPECIFICATIONS