



**Stock Unit 257138 Quick Attack
Ford F550 Crew Cab, Gas, 4x4 Chassis**

**WARD APPARATUS SPECIFICATION
NEW ALL-ALUMINUM TEN FOOT (10') QUICK ATTACK RESPONDER BODY**

THE APPARATUS BODY SHALL BE MANUFACTURED AS PER THE FOLLOWING SPECIFICATIONS:

BODY DESIGN:

The body shall be modular in design, capable of being removed and remounted on a new chassis. Body integrity and strength to be independent of chassis mounting. The body is specifically designed to enable custom layout of interior compartments.

BODY SUPER-STRUCTURE:

The body super-structure shall be constructed of square aluminum tubing and custom extrusions. All framing and supports shall be welded to create a fully enclosed structure. This construction technique provides high strength and durability and enables custom design of interior compartments.

The side wall structure shall be constructed of 2.0" x 2.0" x .125" 6063-T52 alloy square aluminum tubing, the side wall structure shall be welded and gusseted to the sub structure.

The roof structure shall be constructed of 2.0" x 2.0" x .125" 6063-T52 alloy aluminum tubing in a lateral pattern, maximum 20-inch spacing. The roof structure shall be welded to the side-wall structure.

All side walls shall be surfaced using a .125" aluminum sheet, welded and bonded to body side wall structure. The body roof shall be surfaced using .125" aluminum diamond plate.

A side body impact rail manufactured of 6063-T52 alloy extruded aluminum shall be welded to the apparatus side wall structure. It shall receive the body side sheet by means of a groove, which runs continually fore to aft of the side wall structure.

BODY MATERIALS:

The following shall be the minimum acceptable materials, gauge, and finish used:

Aluminum Sheeting - All exterior panels shall be 5052-H32 aluminum of .125" thickness.

Aluminum Diamond Plate - All diamond plate shall be 3003-H14 aluminum of .125" thickness.

Body Mounting - All body mounting bolts to be minimum Grade 5.

Exterior Fasteners - All exterior nuts, bolts, and screws shall be stainless steel.

BODY CORNERS, EXTRUDED:

The exterior body corners and roof perimeter shall be capped with a radiused (2.44") custom aluminum extrusion and welded to the wall and roof structure. Body corners create additional protection from physical and environmental damage to the super-structure.



BODY FLOOR CONSTRUCTION:

The sub structure shall be constructed of 2.0" x 2.0" x .250" 6063-T52 alloy square aluminum tubing extending to the side wall, 2.0" x 2.0" x .125" in all other areas. This sub-structure to be welded and gusseted to the side-wall structure for maximum strength and durability.

Two (2) mounting rails of full-length 1.0" x 3.0" 6061-T6 alloy solid aluminum flat-bar shall be welded to the sub structure, the mounting rails to align with the chassis frame rails for mounting of the body to the chassis.

QUICK ATTACK ROOF CONSTRUCTION:

The roof sub-structure shall be constructed of 2" x 2" x .125" extruded aluminum tubing. The body roof sheet shall be 0.125" aluminum diamond plate and shall overlap the interior edges of the skid/tank compartment walls to prevent water intrusion into the exterior compartments.

BODY FRONT SHEETING:

The front body sheet shall be fabricated of .125" smooth aluminum and painted job color.

BODY REAR SHEETING:

The rear body sheet shall be fabricated of .125" smooth aluminum sheeting and painted job color. There shall be a kick plate fabricated of .125" aluminum diamond plate, located below the rear opening.

BODY ROOF SHEETING: The body roof sheet shall be fabricated of .125" aluminum diamond plate.

CORROSION PROTECTION:

Electrolysis Corrosion Kontrol (ECK) shall be used to prevent dissimilar metal corrosion. ECK shall be used for door latches, door hinges, trim plates, fenderettes, etc. ECK shall be applied to every external fastener hole prior to component mounting.

UNDERCOATING:

The underside of the vehicle including all metal work shall be sprayed with SEM ROCK-IT XC urethane automotive undercoating. The ROCK-IT XC product is designed to prevent chipping, cracking, or marring of painted and unpainted surfaces after exposure to high impact sand, gravel, and other abrasive materials. This undercoating shall aid in preventing corrosion and will provide a sound and vapor barrier to the aluminum body structure.

STONE GUARDS:

The front body corners shall have .125" aluminum diamond plate protective guards. The stone guards shall be bolted to the body and provide coverage at a minimum of 24" high from the base of the body.

BODY MOUNTING:

The body shall be mounted to the chassis frame at not less than six (6) locations, three (3) on each side. The mounts shall secure the 1.0" x 3.0" 6061-T6 alloy solid aluminum flat-bar of the floor sub-frame to the chassis frame.

Neoprene pads shall be furnished and installed between the body and the mounts to prevent electrolysis and to minimize noise transfer.



APPARATUS BODY PAINT FINISH:

Entire paint process including initial surface preparation through final paint and clear-coat application to be conducted according to PPG certified paint process. The final finish of the apparatus shall conform to fire apparatus standards, exhibiting excellent gloss and color retention properties.

Preparation: Removal of all contaminants and oxidation is essential to the final effect of a finish system, the apparatus shall be pre-cleaned with wax and grease remover and dried to evaporation. A PPG 10-step standard body preparation shall be completed. When the substrate is prepared, the entire body shall be cleaned by washing again with wax and grease remover and dried.

Primers: The prepared substrate shall be pre-treated with an epoxy primer to provide corrosion protection and create an adhesive bond between the substrate and the surface applications. To enhance adhesion and topcoat gloss, a two-component urethane primer shall be applied. All the primed surfaces shall be sanded smooth, thus removing all texture and surface imperfections and creating a finish base that will meet the rigid requirements of the fire and emergency services.

Top Coats: Paint shall be PPG FBCH. Two (2) coats urethane base coat shall be applied according to paint manufacturer specifications. After the base coats have cured properly, two (2) coats of a high solids urethane clear shall be applied. All surface imperfections shall be removed by buffing and polishing.

Note: Body to be paint matched to chassis OEM paint.

REAR BODY CHEVRONS:

"Diamond Grade" Chevron reflective striping, six-inch (6") wide, shall be applied to at least 50% of the entire rear body panel. The chevron style striping shall be applied in an inverted "V" pattern at a 45-degree angle from the tailboard to the upper centerline of the rear panel. The stripes shall alternate red reflective, yellow reflective.

REFLECTIVE STRIPE:

A four-inch (4") white "Scotchlite" stripe will be provided. Location and application details to be determined.

CAB DOOR REFLECTIVE TRIM:

Reflective trim shall be installed on the inside of each cab door. The reflective trim to not be seen or disruptive from the inside of the cab while the doors are closed but shall provide additional notification to oncoming traffic when the door is open. This trim shall meet NFPA 1901.

DRIP RAILS:

There shall be polished aluminum rain gutters installed on the side and rear of the body, the rain gutters shall be fastened to the body and removable in case of damage. Rain gutters that are an integral part of the roof radius will not be acceptable due to the difficulty in replacing if damaged.



RUB RAILS:

A two (2) part impact and rub rail system shall be used for body side protection. A polished aluminum rub rail .75" thick x 3" wide shall be bolted to the body "impact" rail to aid in collision protection. The outside vertical edges shall be chamfered for an aesthetic appearance and to reduce the chance of personnel injury.

Black Scotchlite reflective striping to be applied to the recessed center of rub rail to provide additional body side illumination. An additional four (4) reflectors to be installed, two (2) each side of body.

WHEEL WELL LINERS:

Bolted removable aluminum inner liners shall be provided at both rear wheel wells.

WHEEL WELL SURROUND PANELS PAINTED:

The body panels that surround the wheel wells shall be painted with no trim overlaid on the body panel.

FENDERETTES:

The wheel well openings shall be trimmed with polished stainless steel fenderettes, bolted into place.

BODY COMPARTMENT CONSTRUCTION:

The body compartments shall be of a sweep-out design and include stainless-steel door sills. For those compartments extending below the frame rail the door sill shall have a raised peak to reduce water intrusion under the door when in the closed position.

Compartment walls shall be covered with .125" aluminum sheet. Each compartment floor shall be covered with .188" aluminum sheet for added weight carrying capability. Wiring channels shall be provided where necessary and bolted into place for ease of access.

Each body compartment shall be coated with a light gray Zolatone (equivalent) with a matte finish surfacing material.

BODY COMPARTMENT VENTING:

Each compartment that extends below the chassis frame shall have a laser cut vent and will include a cleanable/replaceable filter.

ADJUSTABLE SHELF CHANNEL:

Vertically mounted Uni-Strut channel shall be provided and installed in all exterior compartments where necessary for the installation of infinitely adjustable shelving and trays. The channels shall be of such design to allow square type spring loaded, self-tightening nuts to be attached inside of the channel.



ROLL-UP DOOR CONSTRUCTION, AMDOR:

AMDOR brand roll-up style doors shall be provided at the specified door locations.

Each door shall be manufactured in the United States. Replacement parts shall be available within 2-3 working days.

The door slats shall be double wall box frame extrusion. The exterior surface of slat shall be flat and interior surface to be concave to prevent loose equipment from jamming the door. Door slats shall be anodized to prevent oxidation. Door slats to have interlocking end shoes on every slat to be secured by a punch dimple process. The door slats shall have interlocking joints with a folding locking flange. A PVC/vinyl inner seal to prevent any metal to metal contact shall be provided between each slat.

Each track shall be one piece construction with attaching flange and finishing flange incorporated into the design. The flange design eliminates any requirement for additional trim or caulk. Each track shall have a replaceable seal to prevent water and dust from entering the compartment.

Each assembly shall include an aluminum drip rail with a replaceable wiper seal. Each roll-up door shall have a 4" counterbalance spring in the roller assembly to assist in lifting and help prevent the accidental closing. A full width lift bar shall secure each door. Each roll up door shall have an integral "door open" indicator magnet in the lift bar. If the bar is not properly closed, it shall activate the "Door Open" light in the cab.

DOOR FINISH - SATIN FINISH:

The roll up doors shall be finished anodized Satin.

NOTE: KEY LOCKS

Compartment door handles shall be equipped with a keyed cylinder lock assembly.

COMPARTMENT L1 SHALL CONTAIN:

FLOOR EXTENSION:

Floor height at the area over the frame rails to be continued on the same plane to within close proximity of the outer body sidewall. Floor extension to provide adequate clearance for compartment doors and lighting. Floor extension shall be fabricated of 3/16" smooth aluminum in the form of an inverted box with a 2" lip to create additional support strength.

SLIDE OUT TRAY:

A SlideMaster SM3-MP 100% extension slide out tray shall be provided and installed. The tray shall be constructed from 3/16" smooth aluminum and have a 3" lip on all four sides. The tray shall have a capacity of 600-pounds and shall be mounted on SlideMaster steel slides. An IMS push/pull red ball latch on the front of the slide shall lock the tray in the "in" or "out" position.

NFPA compliant reflective striping to be applied to the sides of the tray/tool board that are exposed when in the deployed position.



ADJUSTABLE SHELF:

One (1) adjustable shelf shall be fabricated and installed. The shelf shall be constructed of 3/16" sanded finish aluminum, with a 2" lip on all four sides. The shelf shall be vertically adjustable by mounting to the Uni-Strut channels provided.

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ADJUSTABLE SHELF:

One (1) adjustable shelf shall be fabricated and installed. The shelf shall be constructed of 3/16" sanded finish aluminum, with a 2" lip on all four sides. The shelf shall be vertically adjustable by mounting to the Uni-Strut channels provided.

COMPARTMENT L2 SHALL CONTAIN:

ADJUSTABLE SHELF:

One (1) adjustable shelf shall be fabricated and installed. The shelf shall be constructed of 3/16" sanded finish aluminum, with a 2" lip on all four sides. The shelf shall be vertically adjustable by mounting to the Uni-Strut channels provided.

COMPARTMENT R2 SHALL CONTAIN:

ADJUSTABLE SHELF:

One (1) adjustable shelf shall be fabricated and installed. The shelf shall be constructed of 3/16" sanded finish aluminum, with a 2" lip on all four sides. The shelf shall be vertically adjustable by mounting to the Uni-Strut channels provided.



COMPARTMENT L3 SHALL CONTAIN:

ADJUSTABLE SHELVES:

Three (3) adjustable shelves shall be fabricated and installed. The shelves shall be constructed of 3/16" sanded finish aluminum, with a 2" lip on all four sides. The shelves shall be vertically adjustable by mounting to the Uni-Strut channels provided.

COMPARTMENT R3 SHALL CONTAIN:

ADJUSTABLE SHELVES:

Three (3) adjustable shelves shall be fabricated and installed. The shelves shall be constructed of 3/16" sanded finish aluminum, with a 2" lip on all four sides. The shelves shall be vertically adjustable by mounting to the Uni-Strut channels provided.

REAR BODY SKID/TANK AREA:

The body shall be open from the rear body panel to the rear wall of the L1 and R1 compartments. This open body area floor sub-structure to be reinforced to hold the skid/water load intended. The interior sheet metal for the floor will be .188" thick for maximum structural strength.

The entire area, including floor, front wall, and body side walls shall be covered with SEM ROCK-IT XC textured coating. The rear skid/tank area floor to body edge and side wall edges shall be trimmed with brushed stainless steel.

REAR BODY STEPS:

There shall be three (3) heavy-duty folding steps installed on the rear body face. Each step shall have an integral step light.

BODY HANDRAILS:

Handrails shall be 1 1/4" extruded aluminum Hansen non-rotating knurled tubing with chrome plated end stanchions. To include stanchion to body gaskets to prevent dissimilar metal corrosion. Each stanchion shall be bolted into place for ease of removal or replacement.



SKID MOUNTED C.E.T. HONDA 20-HP GASOLINE PUMP & 300 GALLON TANK:

PUMP: CET DI-PFP-20hpHND-MR single stage centrifugal pump, bolted directly engine, with a 2.5" NPT suction inlet, and a 1.5" NPT discharge outlet. The pump shall be capable of a maximum discharge volume of 290 GPM at 50 PSI, and a maximum discharge pressure of 190 PSI while pumping 100 GPM. In the center of the performance curve, the pump to be capable of pumping 60 GPM at 175 PSI

ENGINE: 4-stroke Honda gas powered, 20 horsepower V-twin overhead valve engine. Engine to be air cooled, 12-volt electric start via quick-disconnect with weather-proof style connection. Includes oil drain with valve.

FUEL: Honda engine fuel to be supplied via the chassis fuel tank. An in-line 12v fuel pump and replaceable fuel filter to be provided at engine location.

PUMP PRIMER: A manual hand-pump primer to be installed at the pump location.

PUMP CONTROLS: Control panel constructed of non-glare material to be installed at the engine/pump location. Controls to include: Master switch, actuator start, a 2.5" discharge pressure gauge, mini water and foam tank level gauges

FOAM SYSTEM: Trident 'Foamate' Model #31.008.0 ATP-1.0 Class A around-the-pump foam system

SUCTION PIPING: Stainless steel suction piping tested to 400 PSI. Piping shall consist of a 2.5" tank to pump line with a 2.5" flexible rubber hump hose. Includes 2.5" Akron fire type grade valve with Trident chrome handle. Additional suction valve for overboard drafting or for utilizing pressurized supply. Includes 2.5" Akron fire type valve with a Trident chrome handle. Suction inlet terminated with a 2.5" NST female swivel fitting, debris screen, and tethered 2.5 NST polished aluminum male plug.

DISCHARGE MANIFOLD: Welded 2" x 2" square stainless steel

DISCHARGES TO REAR OF UNIT:

One (1) 1.0" Akron fire type ball valve with a chrome Trident handle, for booster reel

One (1) 1.0" Akron fire type tank fill valve, chrome Trident handle

Two (2) 1.5" Akron fire type ball valve with a chrome Trident handle, NST thread, chrome cap

One (1) 2.5" Akron fire type ball valve with a chrome Trident handle, NST thread, chrome cap
30-degree chrome elbow, swivel adaptor

POLY WATER TANK CONSTRUCTION: Constructed of 1/2" thick polypropylene sheet stock, black in color and UV stabilized. Tank to incorporate transverse partitions interlocked with longitudinal partitions for high strength and to allow for maximum water and air flow. Sight gauge 2" in width, and 70% transparent

FILL TOWER: 8" round combination vent/overflow and manual fill tower.

TANK CAPACITY: The tank shall have a capacity of 300 US gallons of water. Limited Life Time Warranty

FOAM CELL: Drop-in type, capacity of 10 US gallons of foam, integral to the water tank. Tethered cover



TANK OUTLETS: 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.

TANK MOUNTING BLOCKS: Two (2) parallel mounting blocks for the mounting of tank accessories

SKID BASE: Full width skid base, approximately 45" wide x 85" long, manufactured of 3/4" polypropylene welded to the tank. Design provides direct mounting to floor of the apparatus.

SUMP: Integral to the tank, recessed a minimum 3/4" from the floor

MINI CAB MOUNTED WATER TANK LEVEL GAUGE:

A Fire Research Tank Vision (Model #WLA205-A00) miniature tank level indicator shall be mounted on the cab console. The indicator will show the volume of water in the tank on five (5) easy to see super LED's. The wide view lens over the LED's shall provide 180 degrees of viewing angle. The indicator case shall be manufactured of Polycarbonate material with an integrated lens and have a distinctive blue label.

MINI CAB MOUNTED FOAM A TANK LEVEL GAUGE:

A Fire Research Tank Vision (Model #WLA265-A00) miniature tank level indicator shall be mounted on the cab console. The indicator will show the volume of Class A Foam in the tank on five (5) easy to see super LED's. The wide view lens over the LED's shall provide 180 degrees of viewing angle. The indicator case shall be manufactured of Polycarbonate material with an integrated lens and have a distinctive green label.

BOOSTER HOSE REEL:

One (1) Hannay Model SBEF 30-23-24 RT, 12-volt electric rewind complete aluminum booster reel with one-inch (1") 90-degree super swivel joint, one-inch (1") NST-M riser, horizontal gear crank rewind will be provided and installed. Reel discs will be polished aluminum. Additionally, the reel will be installed with one (1) – FH-3 roller and spool assembly and 150' of one-inch (1") 800# red rubber booster hose with hard-coat aluminum couplings.

PUMP COMPARTMENT STRIP LIGHTING:

Maxxima modular LED compartment overhead strip lighting shall be installed to provide light for the pump and control panel without interference from reels or other equipment. Light(s) shall be activated when vehicle transmission is placed in the park position with marker lights turned on.



ELECTRICAL SYSTEM - BASE:

All wiring and electrical equipment to be compliant with any applicable NFPA 1901 criteria for Special Service Fire Apparatus and SAE standards. All lighting and reflectors shall meet Federal Motor Vehicle Standards. A Master warning device switch that energizes all optical warning devices shall be provided.

The warning system on the apparatus shall be capable of two separate signaling modes during emergency operations. One mode shall signal to drivers and pedestrians that the apparatus is responding to an emergency and is calling for the right of way. The other mode shall signal that the apparatus is stopped and is blocking the right of way.

Switching to sense the position of the park position of an automatic transmission. When the Master warning system switch is closed, and the parking brake released or the automatic transmission is not in park, the warning devices signaling the call for right of way shall be energized. When the Master warning system switch is closed, and the parking brake is on, or the automatic transmission is in park, the warning devices signaling the blockage of right of way shall be energized. The system shall be permitted to have a method of modifying the two signaling modes.

The warning devices shall be constructed or arranged to avoid the projection of light either directly or through mirrors into any driving or crew compartment(s).

Electromagnetic interference suppression shall be in accordance with SAE J551, performance levels and methods of measurement of electromagnetic radiation from vehicles and devices (30-1000 MHZ).

Wiring grommets shall be provided through all panels for automotive type wiring with coated automotive type loom. Insulation shall be in accordance with SAE J1128, low tension primary cable, type SXL or GXL, and wired to SAE J1292, Automobile, Truck, Truck-Tractor, Trailer and Motor Coach wiring for such loading at the potential employed. All wiring installed by the Apparatus Manufacturer shall be stranded copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for which the circuit is protected.

Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent. Wiring shall be color and function coded the entire length with insulated bolted-down type hold-down clamps and mechanically secured connections. Overall covering of conductors shall be minimum flame retardant to 280-degrees Fahrenheit and moisture resistant.

Hydraulic lines, air system tubing, control cables, and electrical lines shall be clipped to the frame or body structure of the apparatus and shall be furnished with metal protective looms or grommets at each point where they pass through body panels or structural members. Where any through-the-frame connector is provided, any such connector and wiring shall also be protected from shear or tear.

Wiring shall be provided with properly rated low voltage over current automatic resetting protective devices. Such devices shall be readily accessible and protected against excessive heat, damage, and water spray. Switches, relays, terminals, and connectors shall have a direct current rating of 125-percent of maximum current for which the circuit is protected. All electrical components shall be protected against corrosion, heat, vibration, and moisture.



ELECTRICAL SYSTEM, WHELEN CORE:

A Whelen CORE electrical system shall be provided and installed for the operation of all lighting and other emergency functions. The system shall consist of all solid-state components contained within an inner aluminum housing. The system shall consist of sixteen (16) low current outputs (2.5amp), four (4) high current outputs (10amp), and twelve (12) inputs.

The system is expandable and shall be capable of performing the following functions: load management sequencing, warning lamp flasher, scene lighting, rear traffic director, door open notification system, interlock modules, and is capable of receiving digital and analog signals.

A Whelen CANport Interface cable shall be included for connection to the vehicle CAN bus system. A Whelen CCTL7 remote mounted control head shall be provided and installed in the cab console. In an application where this system is unable to provide the necessary switching then Carling rocker type switches with function labels shall be provided and installed on the center console.

POWER DISTRIBUTION QUARTERS:

The vehicle shall be equipped with a Power Distribution Quarters (PDQ) to provide a protected environment for the electrical systems interface to the apparatus body. The PDQ shall have a service access door that is removable via two (2) recessed positive type door latches. 12v lighting shall automatically activate with the removal of the access door. The compartment and access door shall be fabricated from 5052-H32 aluminum alloy, finished in black, and include venting for heat dissipation.

The design shall provide a standardized platform for reliable and repeatable hard-wired or multiplexed electrical systems that can be documented and easily serviced and maintained. The internal wiring terminals shall be machine or torque-tool crimped to the wire ends and splices shall be protected with heat shrink material. All body harnesses entering and exiting the distribution panel shall pass through a protected wiring channel directly into the PDQ. The electrical distribution panel shall incorporate wiring harnesses that meet or exceed NFPA standards while providing a central location for body wiring harnesses.

The distribution panel, including all circuits, shall be documented and made part of the records available at time of delivery. PDQ to be located beneath the rear seat of the crew cab chassis.

BATTERY CONTROL SYSTEM, IGNITION SWITCH:

Battery Master control shall be through the chassis ignition switch. The chassis ignition key shall activate a heavy-duty relay to provide 12-volt battery power to the vehicle. Battery switch shall consist of a minimum 200-ampere, constant duty solenoid to feed from positive side of battery.

BATTERY CHARGER:

A Kussmaul Auto Charge Low Profile LPC 20 Series Model #091-207-12-194B shall be installed for a single battery system. The charger shall include a status display mounted on the cab console. Charger to be built in an aluminum enclosure and include an auxiliary 15-amp output circuit with power source selector for operating accessory loads, and front panel connections for a remote display. Charger output shall pose no interference with other electronic systems on the vehicle.



KUSSMAUL 120-VOLT SUPER AUTO EJECT:

Kussmaul Super Auto Eject, model 091-55-20-120, 20-amp, automatic shoreline disconnect will be provided for the on board, 120-volt battery charging system. The disconnect will be equipped with a NEMA 5-20P male receptacle, which will automatically eject the shoreline when the vehicle starter is energized.

COMPARTMENT STRIP LIGHTING:

Hansen International "Brilliant White" LED modular compartment lighting shall be installed all compartments to provide even, full height lighting for the compartment without interference from shelves or equipment.

Protected strip to be installed on both sides of the opening and shall run the full height of the compartment. Lights shall be activated by a magnet switch when opening the compartment door.

This lighting system to employ 12V D.C. solid state operation with 24" connective pigtail, 120 lumens per foot, rated at 50,000 hours, waterproof to IP66 rating, and be shock and vibration resistant. Lighting shall snap-in for easy installation and service if necessary, be manufactured in the USA, exceed NFPA 1901 current edition, and be white in color.

"DOOR OPEN" WARNING LIGHT:

A red LED warning light, Weldon 1500 Series, shall be installed on the cab console and shall flash when any compartment door is open.

ELECTRONIC SIREN:

The Whelen Siren Amplifier shall be part of the Whelen CORE system. A Whelen CCTL7 remote mounted control head shall be provided and installed in the cab console. This control head shall include functions: wail, yelp, manual, hands-free, piercer tones, PA and radio-rebroadcast.

The siren shall have the ability to drive a 100-watt output. Control to be backlit with soft LED non-glare lighting.

The control head to include operation of all emergency lighting in addition to the siren and PA control.

SPEAKER SYSTEM:

There shall be a Whelen, model SA315P composite, 100-watt speaker. Siren speaker to be recessed behind the chassis grille.

FRONT LIGHT BAR:

Whelen Liberty II light bar shall be provided and installed on the vehicle. The light bar shall be 54" long and include two (2) front corner RED, four (4) front linear, two (2) RED and two (2) WHITE, two (2) rear corner RED.

FRONT LOWER WARNING LIGHTS:

There shall be Whelen M2RC series Super LED lights with chrome bezels installed.

Two (2) warning lights shall be mounted in the grille.

Clear lens with red LED light.



SIDE UPPER WARNING LIGHTS:

There shall be Whelen M7RC series Super LED upper warning lights with chrome bezels installed.
Two (2) warning lights shall be mounted on the left upper body panel.
Two (2) warning lights shall be mounted on the right upper body panel.
Clear lens with red LED lights

SIDE LOWER WARNING LIGHTS:

There shall be Whelen M2RC series Super LED lower warning lights with chrome bezels installed on the vehicle.
Two (2) lights installed, one (1) on each front fender of the chassis.
Two (2) lights installed, one (1) above each rear wheel well.
Two (2) lights installed, one (1) at each side of bumper tail.
Clear lens with red LED lights.

REAR UPPER WARNING LIGHTS:

There shall be Whelen M7RC series Super LED rear upper warning lights with chrome bezels installed.
Two (2) lights shall be mounted, one (1) in each upper rear corner.
Clear lens with red LED lights.

REAR D.O.T. QUAD CLUSTER W/WARNING LIGHT:

A four (4) light vertical cluster with chrome bezel shall be mounted on the rear of the body, one (1) each side.
The cluster will utilize Whelen M6 series LED lights:
Model #M62BTT LED red combination stop/taillight.
Model #M62T LED amber turn signal.
Model #M62BU LED white back-up light.
Model #M6RC LED red warning light.

UPPER BODY SCENE LIGHTS:

There shall be Whelen M7 LED series clear scene lights installed.
Two (2) lights shall be mounted with chrome bezels on the upper street side of the body.
Two (2) lights shall be mounted with chrome bezels on the upper curb side of the body.
The scene lights shall be controlled in pairs at the cab console.

REAR BODY SCENE LIGHTS:

There shall be Whelen M7 LED series clear scene lights installed.
Two (2) lights shall be mounted with chrome bezels on the rear upper body.
The scene lights shall be controlled in pairs at the cab console.

REVERSE ACTIVATED REAR SCENE LIGHTS:

The rear scene lights to automatically activate whenever the apparatus transmission is in reverse mode.



LED TELESCOPING SCENE LIGHTS:

There shall be two (2) Fire Research Spectra LED push up telescoping lights, model SPA100-Q20, provided. The light poles 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 2 3/4" offset. Wiring shall extend from the pole bottom with a 4' retractile cord.

The pole shall store in a foot plate that includes switching to automatically turn light on when telescoping light is deployed. Installation of the telescoping light(s) to include a stainless steel panel at roof edge to protect body from damage when light is stowed.

The lamp head shall have eighty-four (84) ultra-bright white LEDs, 72 for flood lighting and 12 to provide a spotlight beam pattern. It shall operate at 12/24 volts DC, draw 18/9 amps, and generate 20,000 lumens of light. The lamp head shall have a unique lens that directs flood lighting onto the work area and focuses the spotlight beam into the distance. The lamp head angle of elevation shall be adjustable at a pivot in the mounting arm and the position locked with a round knurled locking knob. The lamp head shall be no more than 5 3/8" high by 14" wide by 3 3/4" deep and have a heat resistant handle. The lamp head and mounting arm shall be powder coated.

One (1) light shall be mounted on each side of the front body panel.

LED CLEARANCE LIGHTS:

Nine (9) Weldon 1500 Series LED Low Amp Draw Marker Lamps seven (7) Red (Model #9186-1500-10) and two (2) Amber (Model #9186-1500-20), with stainless steel brush guard (Model #0J10-1200-00) shall be installed to meet ICC, FMVSS and other applicable regulations.

LED UNDERBODY LIGHTS:

There shall be eight (8) TecNiq Series E10-WS00-1 LED underbody lights mounted on stainless steel brackets.

Two (2) under the cab entry doors, one (1) each side.

Two (2) under the front body compartments, one (1) each side.

Two (2) under the rear body compartments, one (1) each side.

Two (2) under the rear bumper, one (1) each side.

The lights shall be activated when the transmission is placed in Park and the Marker lights are on.

LICENSE PLATE BRACKET WITH LIGHT:

There shall be a license plate bracket with light supplied and mounted at the rear of the apparatus.



CHASSIS RELATED ACCESSORIES

CAB CONTROL CONSOLE:

There shall be one (1) cab control console installed in the chassis between the cab bucket seats. This console shall be fabricated from .125" aluminum and shall be as large as possible and bolted into place. This console shall have a removable top cover plate, which shall be retained by stainless steel counter-sunk fasteners.

The console shall accommodate all required electrical connections, sirens, light controls, switch banks, multiplex control heads, and any other electrical equipment as specified. The console shall be coated with light gray Zolatone equivalent material to aid in abrasion resistance.

NOTE: Two (2) sealed (non-leaking) cupholders to be provided and two (2) 3" storage pockets.

PRE-WIRED ANTENNA CABLES:

There shall be two (2) RG58U coax cables pre-wired by the body builder from the chassis roof to the cab center console. Cables to be clearly labeled and secured within the console. Antenna bases to be protected by removable covers.

USB PORT, DUAL, KUSSMAUL:

A Kussmaul Dual USB charging port Model #091-219-5-WP shall be provided in the center console area allowing for quick and easy way to recharge electronic devices in the apparatus. A 4.2 Amps max output allows charging of both a smart phone and a tablet at the same time or two tablets at the same time. Built-In LED Indicator indicates device is powered.

REAR SUSPENSION STABILIZATION:

Rear suspension to include SuperSprings® stabilizing system to level the load created by water tank and to reduce body roll. Modification to be performed without removal of OEM spring pack and should not compromise ride quality.

REAR STEP AND BUMPER:

The rear bumper and step assembly shall extend full width of the body. The bumper structure shall be attached to the chassis frame rails using a minimum of 3" structural channel. The bumper and step assembly shall extend beyond the rear of the modular body a minimum nine inches (9") to protect the body from damage. The rear step shall be constructed of aluminum diamond plate material.

STAINLESS STEEL WHEEL COVERS:

One (1) complete set of stainless steel wheel covers will be provided on the front and rear exterior wheels. Each simulator will have a top hat, wheel cover, lug nut covers, and valve covers.

TRAILER HITCH:

Class III trailer hitch with two-inch (2") receiver shall be installed on the rear of the rescue vehicle. Hitch to be rated up to 6,000 lbs. gross trailer weight (GTW) with a maximum trailer tongue weight (TW) of 600 lbs.

TRAILER LIGHT CONNECTOR:

A combination 7-pin/4-pin trailer plug connector with protective hinged cover to be installed.



RUNNING BOARDS:

Running boards fabricated from .1875" aluminum diamond plate to be installed under the chassis cab doors, each side of apparatus.

CAB STEP LIGHTS, FOUR DOOR CAB:

There shall be four (4) Whelen 0S Series (Model #0AC0EDCR) LED step lights provided.

There shall be one (1) light installed at each cab entry door.

The lights shall be activated with marker lights turned on and the transmission is in the Park position.

VEHICLE EXHAUST SYSTEM, WARD FILTERS NO SMOKE, GASOLINE ENGINE:

Exhaust system to be installed that will reduce gaseous matter in the gasoline exhaust generated by the chassis internal combustion engine, meeting all applicable federal, state, and local standards. Apparatus-mounted system negates the requirement for any other exhaust after-treatment system to be used. System to protect operating personnel both in the fire station and on-scene.

SYSTEM OPERATION: The system shall reduce gaseous matter from the engine and the system shall be completely automatic, not requiring action by any personnel at any time, except for "normal maintenance." Normal functioning of the system is in no way detrimental to the operation of the vehicle. Further, the system has an indicator light on the cab dash if the back pressure exceeds 1.5 PSI. At 1.5 PSI the system needs servicing by an authorized Ward Diesel technician.

SYSTEM COMPONENTS: The system shall consist of a catalyst made of a porous ceramic or metal material with proprietary wash coat, measurements are determined by engine horsepower and will be custom built to fit within any space restrictions. In the oxidation process, the catalyst transforms pollutants into harmless gases through oxidizing (or burning), by combining them with free oxygen in the exhaust. Carbon monoxide and hydrocarbons are oxidized into carbon dioxide and water vapor. Unlike oxidation, reduction is a process of removing oxygen from compounds, in this case from nitrogen. Nitrogen oxides (NOx) formed in the combustion process, are reduced to nitrogen and carbon dioxide (CO2) through reduction, which is promoted by the catalyst. The substrate is encased in steel with a high-temperature cushioning material between the substrate and steel. In most applications, the system is installed in line with the vehicle exhaust.

System installation shall be completed at Ward Apparatus. Additionally, the provider will explain the operation and maintenance of the system to the personnel who will be responsible for routine maintenance.

A written warranty will be provided to ensure that the system is free from defects in materials and workmanship for a period of one (1) year from the date of installation.

MUD FLAPS - REAR:

There shall be black rubber mud flaps installed for the rear wheels.

BACK-UP CAMERA:

Chassis OEM rear view backing camera to be installed.

BACK-UP ALARM:

Federal Evacuator Plus, model 210331SSG, back-up alarm to be provided. 97 dB(A)



FUEL FILL DOOR (GASOLINE):

A flush mounted fuel filler guard with a hinged door shall be installed over the fuel fill hose. The opening shall be labeled UNLEADED GASOLINE ONLY engraved on a permanently attached label.

TOW EYES, REAR:

There shall be two (2) tow eyes mounted directly to the rear chassis framework

TIRE PRESSURE MONITORING DEVICES:

The apparatus shall be equipped with an AirGuard LED tire alert pressure management system. When tire is properly inflated, the indicator inside the cap shall be clear. The sensor shall activate an integral battery-operated LED when the pressure of that tire drops by 8 psi or more. Valve stem extensions shall be included on outer rear wheels. Sensors to be shipped loose for installation by customer.

WARNING LABELS AND INFORMATION PLATES:

All operator controls and switches shall have the appropriate label and corresponding bezel such as pump discharge controls, electrical connections, fuel/DEF fill and exterior switches, etc. Labels to be manufactured by Innovative Controls.

MAXIMUM SEATING CAPACITY LABEL:

A label located in the driver's view specifying the maximum number of personnel the vehicle is designed to carry per NFPA standards.

REMAIN SEATED LABEL:

Label located in the driver's view that states "Occupants Must Remain Seated While Vehicle is in Motion".

VEHICLE DIMENSIONS LABEL:

A permanently engraved plate shall be installed that is clearly visible to the driver while in a seated position showing the apparatus competed overall height, length, and width.

FASTEN SEATBELT LABEL:

Label located in the cab that states "Occupants Must Fasten Seat Belts Before Vehicle is in Motion."

DO NOT RIDE LABEL:

Two (2) labels located on the rear of the apparatus, one on each side, that states "Danger: Do Not Ride on Rear Step While Vehicle is in Motion - Death or Serious Injury May Result".

VEHICLE FINAL STAGE MANUFACTURER LABEL:

A final stage manufacturer label shall be installed by the fire apparatus body manufacturer in compliance with applicable motor vehicle standards.

CALIFORNIA PROPOSITION 65 LABEL:

A pre-printed label stating: WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Label to be placed on the driver side door jamb in close proximity to the FMVSS Final Stage sticker.



DELIVERY REQUIREMENTS:

MANUALS:

All manuals related to sub-system components for included optional equipment to be provided at the time of customer acceptance.

EMERGENCY KIT:

One (1) emergency kit shall be provided and shipped loose with the completed apparatus. Kit shall include one (1) 5lb. ABC extinguisher and three (3) triangle reflectors.

VEHICLE ROAD AND SYSTEMS INTEGRITY TESTING:

A complete and thorough road test and systems integrity test shall be conducted at the time of vehicle completion, and prior to delivery. The road-test portion shall encompass differing types of road conditions and terrain, including but not limited to hills, curves, rough roads, rural high-speed environments, urban stop and go environments, and other conditions to verify vehicle manufacturing and delivery integrity.

A systems integrity test shall be performed on the completed vehicle. In this test, the completed vehicle shall have all systems checked for proper operation and conformity to manufacturing specs. This test shall include but not be limited to a full 12-volt electrical test, a full 120-volt electrical test, all doors shall be checked for proper closure, all doors, hatches, bellows, etc. shall have a water test performed to check for leaks, all roll out trays, tool boards, drawers, etc. shall be checked for proper opening and closing, tire chains (if included) shall be operated, and any system having a mechanical function shall be tested.

CHASSIS:

2023 Ford F550 4x4 Crew Cab, 179" Wheelbase
7.3L V8 Gasoline
TorqShift 10-Speed Automatic Transmission
PTO Provision
4x4 Electronic Shift on the Fly
GVWR: 19,500lbs
Tires: 225/70Rx19.5G BSW Traction Tires
Dual Heavy-Duty Alternators, 410-amp Total
Dual Batteries
XL Package w/Chrome Grille
19.5" x 6" Argent Painted Steel Wheels (W/SS Covers)
AM/FM Radio w/MP3 Player, (6) Speakers
Rear View Camera Prep Kit
Power Windows, Locks
Driver and Passenger Power, Heated Folding Mirrors
Race Red Exterior
Medium Earth Gray Interior