

BUILD SPECIFICATIONS

**WARD APPARATUS SPECIFICATION
NEW ALL-ALUMINUM NINE FOOT (9') SPITFIRE QUICK ATTACK 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.

BODY MATERIALS: The following shall be the minimum acceptable materials, gauge, and finish used:
Aluminum Body - All construction 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 SUPER-STRUCTURE: Lateral floor structure built using 3.0" H x 2.0" W x .125" aluminum tubing welded to longitudinal, doubled 1.0" x 3.0" flat bar. Formed 5.0" channel ties floor structure at front with 3.0" H x 2.0" W x .125" aluminum tubing at rear. Structure is welded and gusseted to the side-wall structure for maximum strength and durability. A welded bulkhead panel above the floor structure secures the compartments at the front of the body.

BODY ROOF SHEETING:

The top of body compartments to be covered with .125" aluminum diamond plate.

CORROSION PROTECTION: Electrolysis Corrosion Kontrol (ECK) to prevent dissimilar metal corrosion.

UNDERCOATING: Underside of the vehicle floor and structure sprayed with Corashield automotive undercoating.

STONE GUARDS: Front body corners, .125" aluminum diamond plate protective guards, 24" high

APPARATUS BODY PAINT FINISH: Fire apparatus standards, exhibiting excellent gloss and color retention properties. PPG-certified single-stage paint process. Body to match chassis OEM Oxford White.

REAR BODY CHEVRONS: "Diamond Grade" Chevron reflective striping, six-inch (6") wide, minimum 50% of the entire rear body.

REFLECTIVE STRIPE: A four-inch (4") "Scotchlite" stripe will be provided full length of vehicle.

BODY COMPARTMENT COATING: Interior of body compartment to be fully coated to aid in abrasion resistance.

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BODY COMPARTMENT VENTING: Each compartment below the chassis frame rail shall have a removable louvered vent panel with a replaceable filter.

ADJUSTABLE SHELF CHANNEL: Vertically mounted Uni-Strut channel in all exterior compartments for adjustable shelving and trays.

COMPARTMENT DOORS: The compartments shall be equipped with flush mounted hinged doors constructed of 3/16" aluminum with 3/4" x 2.5" extruded interior bracing. Doors to have greaseable stainless steel hinges, isolated from body. Vertically hinged doors to be held open approximately 95-degrees via gas spring

Door Latch & Mechanism: D-Ring style door latch with keyed lock. Three-point latching via roller style rod ends and center striker

Weather Resistance: Each compartment opening protected by metal-backed clip-on bulb seal

NOTE: Key Lock: Compartment door latches with keyed cylinder lock assembly

EXTERIOR COMPARTMENT SPECIFICATIONS:

DRIVER'S SIDE:

COMPARTMENT L1: Measures 54 1/2" H x 35" W x 23" D

Three (3) adjustable shelves constructed of 3/16" aluminum with 1.5" lip.

COMPARTMENT L2: Measures 30" H x 44" W x 23" D

One (1) adjustable shelf constructed of 3/16" aluminum with 1.5" lip

COMPARTMENT L3: Measures 54 1/2" H x 30" W x 23" D

Three (3) adjustable shelves constructed of 3/16" aluminum with 1.5" lip.

OFFICER'S SIDE:

COMPARTMENT R1: Measures 54 1/2" H x 35" W x 23" D

Three (3) adjustable shelves constructed of 3/16" aluminum with 1.5" lip.

COMPARTMENT R2: Measures 30" H x 44" W x 23" D

One (1) adjustable shelf constructed of 3/16" aluminum with 1.5" lip

COMPARTMENT R3: Measures 54 1/2" H x 30" W x 23" D

Three (3) adjustable shelves constructed of 3/16" aluminum with 1.5" lip.

REAR BODY SKID/TANK AREA: Completely open center deck area to measure approximately 107" long x 49" wide x 38" high. Body floor to be reinforced to accommodate the skid/water load intended. Center deck area to be painted job color.

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

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: Capacity of 300 U.S. gallons of water with a 10-gallon integrated foam cell.

SUMP: To be integral to the tank floor and be a minimum of 5/8" deep recessed into the floor.

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

TANK MOUNTING BLOCKS: Three (3) parallel mounting blocks for the mounting of tank accessories

SKID BASE: Full width skid base, 45" wide x 103" long, manufactured of 3/4" polypropylene welded to the tank. Design provides direct mounting to floor of the apparatus.

SKID MOUNTING: Shall be mounted in a manner that allows access to the engine, pump, and auxiliary systems for routine maintenance. The mounts shall allow for the truck to be secured directly to a truck bed without the need for any skid framework underneath.

CET FIRE PUMP: 001-PP1-002 20HP Honda Engine (GX340) Electric/Manual single stage centrifugal pump, bolted directly to the engine, with a 2.5" Victaulic suction inlet and a 2.5" flange discharge outlet. The volute and pump head shall be made from aluminum alloy, high strength. The impeller shall be a bronze enclosed type for maximum efficiency, fully machined and balanced. The engine crankshaft shall serve as the pump shaft, with the impeller mounted directly on the crankshaft. The shaft seal shall be self-adjusting, self-lubricating, and mechanical type.

The pump shall be capable of a maximum discharge volume of 285 GPM at 10 PSI, and a maximum discharge pressure of 118 PSI while pumping 20 GPM. In the center of the performance curve, the pump shall be capable of pumping 150 GPM at 60 PSI and 75 GPM at 100 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. An oil drain line shall be installed on the engine for an easy maintenance.

PUMP CONTROLS: A 2.5" diameter discharge pressure gauge, a work light and a low oil alert shall be supplied.

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

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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. Steel Suction Piping - 2.5" - Two (2) Fire Type Swing-Out Valves. All piping on the suction side shall be made of steel (welded joints) painted black. The suction piping, the pump and the discharge shall be tested to 400 PSI. 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. Between the tank and the pump there shall be a 2.5" fire type swing-out valve. 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 where there shall be an additional 2.5" fire type swing-out valve. The overboard suction connection shall have a 2.5" NH female swivel adapter and a 2.5" NH-M plug 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.

TANK TO PUMP "T" HANDLE CONTROL: Attached to the R1 handle of the fire grade tank to pump valve shall be a "T" handle control / rod that shall extend to the end of the pump platform to allow for ease of use to open / close the fire grade tank to pump valve.

STEEL DISCHARGE PIPING: All piping shall be 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 black to match the pump. The discharge shall be equipped with a drain valve at the lowest point.

TANK FILL: One-inch (1") tank fill with an industrial quarter turn valve on the work line side of the manifold

REAR DISCHARGES: There shall be two (2) 1-1/2" valves piped from the discharge manifold to the rear of the truck for connection of forestry hose. The valves shall be industrial quarter turn valves with 1-1/2" NST threads. The valves shall be furnished with a 1-1/2" NST cap and chain.

BOOSTER REEL DISCHARGE: There shall be 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.

BOOSTER REEL: One (1) 12v electric rewind booster hose reel capable of handling 100' 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° swivel inlet, and a 1" NST outlet riser. The reel shall be manufactured of steel and shall be primed and painted red. The reel shall be installed on the rear left side of the pump platform, facing rear. One (1) high mounted roller and spool assembly shall be furnished and installed on the reel. 100' of 1" rubber booster hose shall be supplied and installed on the reel.

HYDRANT / SPANNER WRENCH SET: Task Force Tips A3845 wrench set at rear.

REAR BODY HANDRAILS: 1 1/4" extruded aluminum Hansen non-rotating knurled tubing with chrome plated end stanchions. Handrail location to not increase overall vehicle height.

REAR BODY STEPS: Two (2) heavy duty folding steps with integral step light installed on rear body face.

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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 warning and optical warning devices with separate signaling modes for response and static operation.

Design provides a standardized platform for reliable and repeatable hard-wired or multiplexed electrical systems that can be documented and easily serviced and maintained.

Electrical distribution, including all circuits, shall be documented and made part of the records available at time of delivery.

ELECTRICAL SYSTEM, OPERATING:

Carling rocker type switches for all vehicle warning and scene lights. Function labels provided for each switch.

BATTERY CONTROL SYSTEM, IGNITION SWITCH:

Battery master control through the chassis ignition switch. Heavy-duty 200-Amp constant duty solenoid to provide 12-volt battery power to the vehicle.

BATTERY CHARGER: Kussmaul Auto Charge Low Profile LPC 20 Series.

120-VOLT SHORELINE AUTO EJECT: Kussmaul 20-amp, automatic shoreline dis-connect. Mounted front of body, driver side, inboard from outer body edge

COMPARTMENT STRIP LIGHTING: LED strip lighting

PUMP COMPARTMENT LIGHTING: LED strip lighting overhead of pump and control panel.

ELECTRONIC SIREN: One (1) Federal Signal, model PF200 siren/light controller with 100/200 watts output. Siren control to include selectable siren tones with P/A and noise-canceling microphone. SignalMaster directional warning operation with Integration capability with Rumbler® and integrated dual tone capability.

SPEAKER SYSTEM: There shall be one (1) Federal DynaMax ES100C speaker installed and wired to the electronic siren. Speaker(s) shall be installed behind the front bumper.

FRONT LIGHT BAR: Low-profile SpectraLux ILS split front lightbar to be mounted at the headliner on the interior of the chassis cab. Red and white LED warning light system with white floods.

FRONT LOWER WARNING LIGHTS: There shall be two (2) Federal Signal MicroPulse 1200 Series LED lights with chrome bezels installed on the front lower area of the cab.

Note: Red LED lights with clear lenses.

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SIDE LOWER WARNING LIGHTS: There shall be Federal Signal MicroPulse 1200 Series 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.

NOTE: Red LED lights with clear lenses.

SIDE UPPER WARNING LIGHTS: There shall be Federal Signal FR7 FireRay LED series 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.

NOTE: Red LED lights with clear lenses.

REAR UPPER WARNING LIGHTS: There shall be two (2) Federal Signal FR7 FireRay series LED lights with chrome bezels installed, one (1) each rear upper body corner. NOTE: Red LED lights with clear lenses.

SIDE BODY SCENE LIGHTS: There shall be two (2) Federal Signal FR7 FireRay LED series scene lights with chrome bezels installed on each upper body side.

REAR BODY SCENE LIGHTS: There shall be two (2) Federal Signal FR7 FireRay LED series scene lights with chrome bezels installed, one (1) each upper rear body corner.

REVERSE ACTIVATED REAR SCENE LIGHTS: Activated when transmission is placed in reverse.

REAR TURN SIGNAL, BACK-UP, AND BRAKE LIGHTS: The rear turn signal, backup and stop/taillights shall be a Federal Signal FireRay four (4) light cluster mounted in a chrome housing FR6MC4V.

FR6-BTT series LED red combination stop/taillight.

FR6-AAROW series LED amber arrow turn signal.

FR6-BACKUP series LED white back-up light.

FR6C-R series LED red warning light with clear lens.

One (1) 4-light cluster shall be mounted on each right and left rear of the body.

LED CLEARANCE LIGHTS: Ten (10) clearance lights, Federal Signal Commander 4-LED, eight (8) red and two (2) amber, shall be installed to meet ICC, FMVSS, and other applicable regulations.

LED UNDERBODY LIGHTS: TecNiq Series LED eight (8) under body lights with SS brackets.

LICENSE PLATE BRACKET WITH LIGHT: A license plate bracket with light will be installed.

CHASSIS RELATED ACCESSORIES

CAB CONTROL CONSOLE: Protected environment for the electrical systems interface to the apparatus body. Accommodates siren and warning light controls, two (2) pre-wired antenna cables, dual USB port, mini water, and foam tank level gauges, and two (2) cup holders. Console fabricated from .125" aluminum with removable top cover, Zolatone coating.

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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: Aluminum diamond plate cover, full width of body, attached to chassis frame.

RUNNING BOARDS: Chassis OEM platform running boards

CAB STEP LIGHTS: Whelen 0S Series LED step lights provided, each cab door

TRAILER HITCH/LIGHTS: Class III trailer hitch, combination 7-pin/flat blade trailer light plug connector.

BACK-UP CAMERA: Nagy back up camera system

BACK-UP ALARM: Federal Signal Evacuator electronic back-up alarm

TIRE PRESSURE MONITORING DEVICES: Shipped loosed, calibration after vehicle is loaded.

MUD FLAPS - REAR: Black rubber mud flaps at rear wheels

WARNING LABELS AND INFORMATION PLATES: Labels by Innovative Controls and Warning Labels

VEHICLE ROAD AND SYSTEMS INTEGRITY TESTING: Road test and systems integrity test including a full 12-volt electrical test conducted at the time of vehicle completion. All systems having a mechanical function to be tested.

MANUALS: All manuals related to sub-system components for included optional equipment to be provided

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CHASSIS:

2019 Ford F550 4x4 Standard Cab, 145" Wheelbase
6.7L Power Stroke Turbo V8 Diesel
TorqShift 6-Speed Automatic Transmission
Limited Slip w/4.88 Axle Ratio
PTO Provision
4x4 Electronic Shift on the Fly
GVWR: 19,500lbs
Tires: 225/70Rx19.5G BSW Traction
Dual Heavy-Duty Alternators, 377-amp Total
Dual Batteries
High-Capacity Trailer Tow Package
XL Package w/Chrome Bumper
Power Windows, Locks
Remote Keyless Entry
Steering Wheel Mounted Cruise Control
Driver and Passenger Power Remote Heated Folding Mirrors
Medium Earth Gray Interior
Oxford White