

One (1) Pumper, Fast Quote, Aluminum  
01-55-2000

**FIRESTORM PUMPER**

One (1) Approval Drawings (STD-P)  
02-05-1200

**APPROVAL DRAWINGS**

Two (2) sets of engineering blueprints, CAD drawn to scale specifically for this apparatus, shall be provided. The Fire Department shall review and approve these drawings prior to actual construction of the apparatus.

Both left and right side views, a rear view and a top view shall be provided. The blueprints shall also show the overall dimensions of the apparatus, proposed compartment sizes and features, booster tank position, and the location of all emergency warning and work lights that are to be provided by the body builder.

One (1) Third Party Testing (STD-P)  
02-07-1000

**THIRD PARTY TESTING**

The complete apparatus shall be third party tested and certified as a class "A" triple combination pumper. Unit shall also meet or exceed all N.F.P.A. Pamphlet No. 1901 (latest edition) specifications and standards.

One (1) Performance Requirements  
02-10-1000

**PERFORMANCE REQUIREMENTS**

The apparatus, when fully equipped and loaded, shall be capable of the following performance on dry, level, paved roads in good condition:

From a standing start the vehicle shall attain a true speed of 35 mph within 25 seconds.

From a steady speed of 15 mph the vehicle shall accelerate to a true speed of 35 mph within 30 seconds. This shall be accomplished without moving the gear selector.

The vehicle shall attain a minimum top speed of not less than 50 mph.

The apparatus shall be able to maintain a speed of at least 20 mph on any grade up to and including six percent.

One (1) Commercial Chassis  
03-00-1503 10

One (1) Chassis Modifications  
05-03-0000 90

**MODIFICATIONS TO CHASSIS**

The following modifications shall be performed on the chassis upon arrival at the body builder's facility:

S One (1) Cab Step, Battery, No Modify Chassis Step 05-  
20-3045

**CAB STEP BATTERY COMPARTMENT**

The chassis provided cab entrance step opposite the fuel tank shall be modified as needed to comply with NFPA stepping requirements. The step will be designed so the first step is no further than 24" from the ground and each additional step is less than 18". The stepping surfaces will be of a non-slip material and the depth of the stepping area will be no less than 8".

NOTES

No Mods included. Advise if required as dealer advised chassis will be NFPA

S One (1) Cab Step, Fuel Tank, No Modify Chassis Step 05-  
20-4840

**FUEL TANK STEP**

The chassis provided cab entrance step opposite the battery step shall be modified as needed to comply with NFPA stepping requirements. The step will be designed so the first step is no further than 24" from the ground and each additional step is less than 18". The stepping surfaces will be of a non-slip material and the depth of the stepping area will be no less than 8".

NOTES

No Mods included. Advise if required as dealer advised chassis will be NFPA

One (1) Fuel Tank Label, Commercial Chassis (STD)  
05-25-0300

**FUEL TANK LABEL**

A label shall be provided adjacent to the fuel tank fill opening stating the type of fuel being used.

One (1) Horns, Dual Grover, 24.5" Round W/Lanyard Pull, Hood Sides  
05-32-1800

**DUAL GROVER AIR HORNS**

Two (2) Grover Emergency Stuttertone 24-1/2" round air horns shall be provided with one mounted on each side of the cab hood. The air horns will be connected to the chassis air system and will include a low air pressure safety valve. A center lanyard pull, which is convenient for use by both the driver and officer, shall activate the horns.

One (1) Apparatus Information Label (STD)

05-35-1700

**APPARATUS INFORMATION LABEL**

A label shall be provided in the area of the driver seat to notify the driver of the maximum amount of personnel to be carried on the vehicle as well the overall height, overall length, and the GVWR.

Two (2) Helmet Label, Per Seat (STD)  
05-35-1710

**HELMET LABEL**

A label stating "DO NOT WEAR HELMET WHILE SEATED" shall be provided and visible from each seating location.

One (1) Chassis Exhaust, Pumper/Aerial (STD)  
05-35-3300

**CHASSIS EXHAUST**

The chassis exhaust shall be extended just past the body side away from the pump operator. A stainless steel exhaust deflector shall be located just above the exhaust pipe and below the body to prevent discoloration of the body side panels.

One (1) Rear Tow Eyes, (STD)  
05-40-0600

**REAR TOW EYES**

Two (2) heavy rear tow eyes, .75" x 4" with a 2.375" elongated hole, shall be bolted directly to the frame, located inside the compartment between the rear beavertails. They shall be furnished with stainless steel trim plates.

One (1) Rear Tow Eyes, Painted Black  
05-40-3000

**PAINTED TOW EYES - BLACK**

Tow eyes will be painted black.

One (1) Rear Spring Shackle Access  
05-42-1000

**REAR SPRING SHACKLE ACCESS**

The rear axle spring shackles, if equipped with grease fittings, shall have the fittings replaced with 90 degree fittings for ease of service once the body is in place.

One (1) Fluid ID Plate, Cab Display  
05-42-3200

**FLUID ID PLATE**

The following quantity and type of fluids used in the vehicle will be programmed on the Multiplexing display that is located in the cab:

- Engine oil
- Engine coolant
- Transmission fluid
- 0\* Pump transmission lubrication fluid
- 0\* Pump primer fluid
- Drive axle lubrication fluid
- 0\* Air-conditioning refrigerant
- 0\* Air-conditioning lubrication oil
- Power steering fluid
- 0\* Cab tilt mechanism fluid
- 0\* Transfer case fluid
- 0\* Equipment rack fluid
- 0\* Air compressor system lubricant
- 0\* Generator system lubricant
- Front tire cold pressure
- Rear tire cold pressure
- Maximum tire speed ratings

\* = When applicable.

One (1) Mudflaps, Rear  
05-45-1000

**REAR MUDFLAPS**

A black hard rubber mudflap with the manufacturer's logo on it shall be installed behind the rear wheels, one (1) each side.

One (1) Tire Pressure Monitoring Device  
05-50-2000

**TIRE PRESSURE MONITORING DEVICE**

Each tire installed on the apparatus shall be equipped with a tire pressure monitoring device. The device shall consist of a valve stem cap with red and green color bands to indicate tire pressure conditions. If the cap is ALL GREEN the tire is properly inflated. If the cap is HALF GREEN/HALF RED, the tire is approximately 10% under inflated. If the cap is ALL RED, the tire is 20% or more under inflated.

NOTES

Accu pressure brand.

Two (2) Helmet Holders (EA) - (Marion Supplied & Installed)  
05-72-1005

**HELMET HOLDERS**

Two (2) UHH-1 helmet holders tested to 9 g force to meet compliance to the 2009 edition of NFPA 1901 for use inside of crew cabs shall be provided near each seat position. The holders shall secure traditional

and contemporary style helmets without any adjustment being required.

One (1) 1500 Gpm DSD pump, Hale  
10-04-5600

### **PUMP ASSEMBLY**

The pump shall be a Hale 1500 GPM Model DSD fire pump that is assembled and tested at the pump manufacturer's factory. The entire pump shall be hydrostatically tested to a pressure of 600 PSI and fully tested to the performance spots as outlined by the latest NFPA Pamphlet No.1901. The pump shall be free from objectionable pulsation and vibration.

The pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI (2069 bar). All metal moving parts in contact with water shall be of high quality bronze or stainless steel. The pump body shall be vertically split, on a single plane for easy removal of entire impeller assembly including clearance rings.

The pump shaft to be rigidly supported by two bearings for minimum deflection. The bearings shall be heavy-duty, deep groove ball bearings in the gearbox and they shall be splash lubricated. The pump shaft shall be heat-treated, electric furnace, corrosion resistant stainless steel that must be sealed with double-lip oil seal to keep road dirt and water out of gearbox.

The pump impeller shall be hard, fine grain bronze of the mixed flow design; accurately machines, hand-ground and individually balanced. The vanes of the impeller intake eye shall be hand ground and polished to a sharp edge, and be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower. The pump impeller shall be hard, fine grain bronze of the mixed flow design; accurately machined hand ground and individually balanced. The vanes of the impeller intake eyes shall be hand ground and polished to a sharp edge and be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower. Impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body.

### **GEARBOX**

The pump gearbox shall be of sufficient size to withstand up to 16,000 lbs. ft. of torque of the engine. The drive unit shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature.

The gearbox drive shafts shall be of heat-treated chrome nickel steel and at least 2-3/4 inches in diameter, on both the input and output drive shafts. They shall withstand the full torque of the engine.

All gears, both drive and pump, shall be of highest quality electric furnace chrome nickel steel. Bores shall be ground to size and teeth integrated and hardened, to give an extremely accurate gear for long life, smooth, quiet running, and higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrust. (No exceptions.)

If the gearbox is equipped with a power shift, the shifting mechanism shall be a heat treated, hard anodized aluminum power cylinder, with stainless steel shaft. An in-cab control for rapid shift shall be provided that locks in road or pump.

For automatic transmissions, three green warning lights shall be provided to indicate to the operator(s) when the pump has completed the shift from Road to Pump position. Two green lights to be located in the truck driving compartment and one green light on pump operators panel adjacent to the throttle control.

For manual transmissions, one green warning light will be provided for the driving compartment. All lights to have appropriate identification/instruction plates.

One (1) Anodes, Hale Pump  
10-20-0520

**PUMP ANODES**

Sacrificial anodes will be provided in the pump housing, one (1) for the discharge part of pump and one (1) for the suction part of pump.

One (1) Mechanical Seal, Hale  
10-20-1500 10

**PUMP SEAL-MECHANICAL**

The pump shall be equipped with self-adjusting, maintenance free MECHANICAL SHAFT SEALS that shall not require manual adjustment. These seals shall be designed in a manner that they will remain functional enough to permit continued use of the pump in the unlikely event of a seal failure.

One (1) Pump Impeller, Hale  
10-25-2000

**PUMP IMPELLER**

Pump impeller shall be hard, fine grain bronze of the mixed flow design accurately machined, hand-ground and individually balanced. The vanes of the impeller intake eyes shall be hand ground and polished to a sharp edge, and be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.

Impeller clearance rings shall be bronze, easily renewable without replacing impeller or pump volute body, and of wrap-around double labyrinth design for maximum efficiency.

The pump shaft shall be heat-treated, electric furnace, corrosion resistant, stainless steel, to be super-finished under packing with galvanic corrosion (zinc separators in packing) protection for longer shaft life. Pump shaft must be sealed with double lip oil seal to keep road dirt and water out of drive unit.

There shall be two (2) copies of the pump operation and maintenance manuals provided.

One (1) Drive Unit, Hale  
10-26-1000 10

**DRIVE UNIT**

The drive unit shall be cast and completely manufactured and tested at the pump manufacturer's factory.

Pump drive unit shall be of sufficient size to withstand the full torque of the engine in both road and pump operating conditions. The drive unit shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature without supplemental cooling.

The gearbox drive shafts shall be of heat treated chrome nickel steel and at least two inches in diameter, on both the input and output drive shafts. They shall withstand the full torque of the engine in both road

and pump operating conditions.

All gears, both drive and pump, shall be of highest quality electric furnace chrome nickel steel. Bores shall be ground to size and teeth integrated, crown-shaved and hardened, to give an extremely accurate gear for long life, smooth quiet running and higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrust.

S One (1) Pump Shift, Hale Air Control 10-26-5000 10

**PUMP SHIFT**

The pump shift shall be Hale air control, located in the cab. The shift from road to pump shall be power operated by the chassis air supply and have a pump in gear indicator light on the pump shift valve nameplate.

An electronic lock up shall be provided in the transmission to lock the transmission into pumping gear when the proper range is selected.

A nameplate indicating the chassis transmission control lever position to be used for pumping shall be provided in the cab and located with the pump shift switch control so that it can be read from the drivers position.

NOTES

S = Air pump shift, not electric

One (1) Pump Shift Indicators  
10-26-5500

**PUMP SHIFT INDICATORS**

For trucks with automatic transmissions, three (3) green indicator lights shall be provided to indicate to the pump operator when the pump has completed the shift from the Road to the Pump position.

Two (2) green lights to be located in the cab. One is to be labeled "Pump Engaged" which illuminates when the pump shift has been successfully completed. The other light is to be labeled "OK to Pump" and is to illuminate when the pump shift has been completed and the transmission is engaged in the proper pumping gear. The labeling and lights shall be included with the pump shift nameplate.

An "OK to Pump" indicator light shall also be furnished on the pump operator's control panel adjacent to the throttle control. A warning label stating "Warning: Do Not Open Throttle Unless Light Is On." shall be installed adjacent to the throttle control.

One (1) Pump Priming System, Hale  
10-30-2000 10

**PUMP PRIMING SYSTEM**

The pump priming system shall be a Hale model ESP, self lubricating type. The priming pump shall be a positive displacement vane type 12 volt electric driven priming pump, which is to be totally enclosed to prevent dust, dirt and water from entering. It shall be furnished with a hand operated Pull-Release" bronze

priming valve which automatically starts the priming pump.

One (1)  
10-35-2000 10 Drive Line

**DRIVE LINES**

The original drive lines furnished with the chassis shall be reworked to fit the pump installation. The tube, if needed to be lengthened, shall be completely replaced. Splicing of the tube is not acceptable. Tube shall be D.O.M. (Drawn over Mandrel) made for drive shafts.

They shall be electrically MIG welded by a certified welder on a specially designed drive shaft fabrication machine. After welding, the drive shaft shall be checked for straightness and be dynamically balanced by computerized machinery. All drive shafts shall be balanced.

One (1)  
10-35-4000 Auxiliary Cooling System

**AUXILIARY COOLING SYSTEM**

A Sen-Dure model #4373-1-5 supplementary remote heat exchange cooling system of brass and copper construction shall be installed. The unit shall be mounted in the pump compartment and be complete with all proper valving. Controls shall be at the pump operator's panel. Unit shall permit the use of water from the discharge side of the pump for cooling of the coolant circulating through the engine cooling system without intermixing.

The heat exchanger shall have an added tap for a radiator fill if required, elsewhere in these specifications.

The auxiliary cooler lines shall be routed away from the engine exhaust and be properly secured to the truck frame.

One (1)  
10-37-2000 Master Drain Valve

**MASTER DRAIN VALVE**

Suitable line drains shall be mounted for properly draining all piping lines and pump. The pump shall be equipped with a single master drain valve that includes individually ported drains that do not require check valves. This drain shall also include all relief valves, auxiliary engine cooler, and pump transmission.

One (1)  
10-37-4000 Drain Valves, Lift Lever

**DRAIN VALVES - LIFT LEVER**

The drain valves shall be ¾" ball brass drain valves with chrome-plated lift lever handles and ergonomic grips. Each lift handle grip shall feature built-in color-coding labels and a verbiage tag identifying each valve. The color labels shall also include valve open and close verbiage.

One (1)  
10-41-3000 Intake Relief Valve, (STD-H)



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### INTAKE RELIEF VALVE

There shall be a relief/dump valve bolted directly to the suction manifold on the pump. It shall be preset to 125 PSI and be field adjustable behind the curb side pump access door.

There shall be a permanent label affixed near the outlet which states "Intake relief valve outlet - Do not cap."

One (1) Pump Piping, Stainless & Akron Valves, Hale Pumps  
10-48-4060

### PUMP PIPING & AKRON VALVES

All discharge valves under 4" shall be Akron brand HD 8800 series. All discharge valves, 4" or larger, when specified shall be Akron 8840 series and shall be equipped with a mechanism to restrict the speed of operating the valve from full closed to full open or vice versa in less than 3 seconds. All threads shall be NST unless specified otherwise.

Discharge and suction piping shall be 100% stainless steel or where more flexibility is required, the discharge and suction lines shall be plumbed with high pressure reinforced flexible hoses which have threaded stainless steel or victaulic fittings. Victaulic couplings shall be used wherever needed to prevent vibration damage and to aid in servicing the pump and related plumbing. **Galvanized piping or fittings will not be accepted (NO EXCEPTIONS).**

One (1) Main Suction Inlet, 6", Hale  
11-05-3000

### MAIN SUCTION INLETS

There shall be a 6" pump manifold inlet with removable, cleanable screen furnished on each side of the body. Each side of the pump is to be provided with a short 4" long suction tube to provide better clearance for externally mounted valves and adapters. The inlets shall be furnished with long handled chrome plated female pressure caps with a domed Marion logo custom designed to fit the intake caps.

One (1) SELECT INTAKE VALVE (If Applicable) 11-  
10-6999

One (1) SELECT INTAKE VALVE (If Applicable) 11-  
10-6999

One (1) 2.5" Auxiliary Inlet, Road Side (STD)  
11-40-2000

### 2-1/2" ROAD SIDE AUXILIARY INLET

One (1) auxiliary 2-1/2" NST gated suction inlet shall be provided at the road side pump panel. Valve shall be the 1/4 turn ball type with a lever style control located at the valve. The valve shall be located behind the pump panel.

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The auxiliary inlet shall be equipped with a chrome swivel, removable cleanable strainer, male plug and retainer chain. An individual 3/4" bleeder drain with a quarter turn control handle shall be furnished. The drain shall be piped toward the ground.

One (1) Label, Valved Inlet  
11-40-9000

### **VALVED INLET LABEL**

Any valved inlet located at the pump operator's position shall be provided with a permanent label that states "Warning - serious injury or death could occur if inlet(s) is supplied by a pressurized source when the valve is closed".

One (1) 2.5" Discharge, Swing Valve Control, Road Side  
13-04-0010

### **2-1/2" MAIN DISCHARGE VALVE, ROAD SIDE**

There shall be one (1) 2-1/2" discharge(s) provided at the road side. Discharge valve shall be 1/4 turn, full flow, drop out, self-locking type and shall be mounted behind the pump panel.

The discharge valve shall be gated with easy operating swing valve controls. The outlet shall have a stainless steel NST elbow capped with a chrome plated female cap and chain. Unless otherwise specified the 2-1/2" valve shall have a 45 degree elbow with a 2-1/2" cap.

The discharge shall have an individual bleeder drain which shall be piped toward the ground.

One (1) 2.5" Discharge, Curb Side  
13-04-0600

### **2-1/2" MAIN DISCHARGE VALVE, CURB SIDE**

There shall be one (1) 2-1/2" discharge(s) provided at the curb side. Discharge valve shall be 1/4 turn, full flow, drop out, self-locking type and shall be mounted behind the pump panel.

The discharge valve shall be gated with easy operating controls. The outlet shall have a stainless steel NST elbow capped with a chrome plated female cap and chain. Unless otherwise specified the 2-1/2" valve shall have a 45 degree elbow with a 2-1/2" cap.

The discharge shall have an individual bleeder drain which shall be piped toward the ground.

One (1) 3" Discharge, Curb Side  
13-04-2000

### **3" MAIN DISCHARGE VALVES, CURB SIDE**

There shall be one (1) 3" discharge(s) provided at the curb side. Discharge valve shall be 1/4 turn, full flow, drop out, self-locking type and shall be mounted behind the pump panel.

The discharge valve shall be gated with easy operating controls. The outlets shall have a stainless steel NST elbow capped with a chrome plated female cap and chain. Unless otherwise specified the 3" valve

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shall have a 30 degree elbow with a 3" cap.

The discharge shall have an individual bleeder drain which shall be piped toward the ground.

One (1) 3" Piping For Deck Gun  
13-15-2000

### **DECK GUN DISCHARGE**

There shall be one (1) 3" NPT discharge located above the pump for installation of a deck gun. The discharge valve shall be bronze, 3", 1/4 turn, full flow, drop out, and be of the self-locking type.

The 3" discharge valve shall be gated with easy operating push-pull controls. Valve to be controlled from the pump operator's panel.

An automatic drain shall be provided at the lowest point of the piping and the drain shall be piped toward the ground.

### SHOP NOTES

Shall be capped.

One (1) SELECT DECK GUN PACKAGE (If Applicable)  
13-16-0050 10

One (1) 2.5" Discharge, Front Hose Bed  
13-20-6500

### **2-1/2" PRECONNECT DISCHARGE**

One (1) 2-1/2" NST discharge(s) shall be provided at the front of the hose bed. The discharge valve shall be a 2-1/2", 1/4 turn, full flow, drop out and be the self-locking type. It shall be gated with easy operating controls located on the pump operator's panel. Outlet to be furnished with a chrome 2-1/2" male NST adapter. No cap is included unless otherwise specified.

The 2-1/2" discharge shall have an individual bleeder drain with a quarter turn control handle. The drain shall be piped toward the ground.

### SHOP NOTES

Located on curbside.

Two (2) Crosslay, 1-1/2"  
13-30-1010

### **CROSSLAYS**

Two (2) 1-1/2" crosslay(s) shall be mounted above the pump. Each shall have the capacity of 200 ft. of 1-3/4" double jacket fire hose. Each crosslay shall be individually plumbed with a 2", 1/4 turn full flow drop out valve, 2" piping, and a 90 degree 1-1/2" male NST chicksan swivel adapter. Controls shall be located on the pump panel.

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The crosslay compartment floor shall be fitted with aluminum flooring to allow for proper ventilation and drainage. To reduce maintenance and paint chips, the divider and crosslay sidewalls shall have an unpainted oscillated aluminum finish.

The crosslays shall have an individual bleeder drain with a quarter turn control handle. The drain shall be piped toward the ground.

If more than one (1) crosslay is provided a divider shall separate the hose loads.

### SHOP NOTES

Shall be single stacked at the front of the module with 2.5" behind or near dunnage

One (1) Crosslay, 2-1/2" With 2-1/2" Piping  
13-30-2000

#### **2-1/2" CROSSLAY**

One (1) 2-1/2" crosslay(s) shall be mounted above the pump. Each shall have the capacity of 200 ft. of 2-1/2" double jacket fire hose. Each crosslay shall be individually plumbed with a 2-1/2", 1/4 turn full flow drop out valve, 2-1/2" piping, and a 90 degree 2-1/2" male NST chicsan swivel adapter. Controls shall be located on the pump panel.

The crosslays shall have an individual bleeder drain with a quarter turn control handle. The drain shall be piped toward the ground.

The crosslay compartment floor shall be fitted with aluminum flooring to allow for proper ventilation and drainage. To reduce maintenance and paint chips, the divider and crosslay sidewalls shall have an unpainted oscillated aluminum finish.

If more than one (1) crosslay is provided a divider shall separate the hose loads.

One (1) Crosslay Cover, Hinged Aluminum Treadplate  
13-30-6300

#### **CROSSLAY COVER**

There shall be a heavy duty .125" bright aluminum treadplate cover over the crosslays which is to be hinged at the front. There shall be two (2) spring-loaded trigger latch devices to secure the cover in the closed position. When necessary, the cover shall also be provided with a stop to prevent it from hitting the cab.

S One (1) Crosslay End Covers, Mesh Guard, 1" Web 13-  
30-6800

#### **VINYL COVERS FOR CROSSLAY ENDS**

Vinyl covers will be provided on each end of the crosslay. The vinyl will be fastened so it can be detached and flipped for quick deployment

### SHOP NOTES

bungee pull with colored grab straps.

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One (1) 3" Tank to pump Line (STD Hale)  
17-10-2000

### **TANK TO PUMP LINE**

The piping from the tank to pump shall be one (1) 3" line and shall deliver not less than 500 GPM. Valve to be 3" 1/4 turn ball type with control at the pump operator's control panel. A flexible line shall be used between the tank sump and the tank to pump valve. A 3" check valve shall be included in the tank to pump line.

One (1) 2" Tank Fill  
17-20-3000

### **TANK FILL LINE**

Pump to tank line shall be 2". Valve to be 2" 1/4 turn ball type with a control at the pump operators panel. This line is to be hooked to the tank with a flexible hose as not to put any undue strain on the piping or tank.

One (1) Tank Fill Rear, Direct 2.5", Fireman's Friend  
17-40-8000

### **REAR DIRECT TANK FILL(S)**

There shall be one (1) 2.5" tank fill(s) at the rear of the apparatus. The tank fill shall have a semi-automatic fill valve manufactured by Fireman's Friend Engineering, Inc. The valve shall be an internally mounted check type fill valve of highly corrosive resistant stainless steel. The end of the valve(s) shall have a chrome plated 2.5" NST swivel, inlet strainer and a chrome plated plug with chain.

### SHOP NOTES

Roadside rear.

One (1) SELECT ROAD SIDE PUMP PANEL PLUMBING  
18-10-0265 10

One (1) SELECT CURB SIDE PUMP PANEL PLUMBING  
18-10-0267 10

One (1) Pump Compartment, Midship  
18-10-1000 10

### **PUMP COMPARTMENT**

The pump compartment is to be made of all aluminum. The compartment shall be supported by aluminum extrusions; 3" x 2" at the front and 2" x 2" at the rear. Both extrusions will have a .25 wall thickness 6061-6 aluminum extruded rectangular tubing that have an integral support built in for the side panels and running boards.

The pump compartment shall be a completely separate module. A minimum of a 1" space shall be provided between the chassis cab and the pump compartment and between the pump compartment and the main body. Spacing is to allow for chassis flexing when driving over uneven terrain.

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There shall be a bright aluminum diamond plate top hinged door with two (2) chrome plated lift and turn latch on the curb side for fast and clear access to the pump for service and inspection.

The pump compartment shall be mounted on breaker strips to separate the chassis frame from the aluminum pump compartment.

Any available area above the pump shall be an open storage compartment. It shall have a bright aluminum diamond plate floor in removable sections for access to the pump. The interior side walls and floor shall have an unpainted oscillated aluminum finish.

One (1) 42" - 45" Side Mount Pump Compartment  
18-20-150A 60

One (1) Pump/Gauge Panels, Brushed Stainless, Midship  
18-20-2000

### **PUMP PANELS**

Road side and curb side pump panels shall be constructed of 12 gauge brushed stainless steel. The pump panels shall also be removable and held in place with stainless steel fasteners. All pump controls shall be located on the road side panel except for the curb side auxiliary suction inlet if so equipped.

Suction and discharge openings shall be trimmed with color coded collars.

The drain handles will be installed in a separate panel to allow for easy maintenance.

### **PUMP GAUGE PANEL**

The pump gauge panel shall be constructed of 12 gauge brushed stainless steel and be located above the road side pump panel. It shall be hinged at the side to swing open for ease of service and inspection. It shall be full width of the pump panel and have two (2) chrome plated lift and turn latches.

### NOTES

Panel shall leave spacing for potential future install of foam injection. (room for controls, foam level gauges) Manifold shall run pump panel 3 pre-connect discharges and have a removable straight pipe with Vic couplers on each for future foam system. There will be no bracket/plate in the pump compartment for the foam pump to set on.

If possible kink/bent edge and smaller gasket desired for overlap doors on pump panel.

One (1) Pump Panel Drawings  
18-30-0000

### **PUMP PANEL DRAWINGS**

A pump panel CAD drawing showing the proposed locations of the switches, valve controls, gauges, etc. shall be submitted to the Fire Department prior to the fabrication of these panels. This will allow the Fire Department to make minor location requests prior to the fabrication of these panels (no plumbing changes allowed).

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One (1) Running Boards (STD)  
18-60-1000 70

### **RUNNING BOARDS**

The running boards shall be constructed of .188" serrated bright aluminum treadplate. They shall be reinforced with a 2" downward break at the front, rear and outboard edges with an additional 1" minimum return break underneath the front edge for superior strength. The front corner of the runningboard shall be tapered to avoid injuries. For ease of replacement if damaged, the running boards shall be bolted in place.

A drain gap shall be provided between the pump compartment and the running boards.

There shall be a 4" aluminum treadplate kickplate on the lower edge of each side pump panel, just above the running boards.

The running boards shall be a minimum of 13" deep, (when rubrails are present) to provide adequate clearance for externally mounted valves and appliances and to provide better footing for access to storage areas above the pump.

One (1) SELECT RUNNING BOARD HOSE WELLS (If Required) 18-  
62-0599

One (1) Valve Controls (Midship) I.C.  
18-80-2500

### **VALVE CONTROLS**

Unless otherwise stated in these specifications, the suction and discharge valves shall be operated by remote controls. Valve control handles shall be chrome plated ergonomic handles with a color coded function label. For each discharge with a gauge the control and gauge shall be in the same bezel for pump operator ease. (NO EXCEPTIONS)

One (1) Pump Panel Lighting, LED, TecNiq #E10  
20-02-1035

### **PUMP PANEL LIGHTING, LED**

An extruded aluminum shield shall be mounted above the road side gauge panel. The light shields shall be made as large as possible to provide maximum light distribution. Two (2) TecNiq #E10-W000-1 LED lights shall be furnished under the shield. Bulbs which are exposed are unacceptable. The lights shall be switched on at the pump operator's control panel.

One (1) Light Shield, On Curb Side, LED, TecNiq #E10  
20-02-2035

### **PUMP PANEL LIGHTING, LED**

An extruded aluminum shield shall be mounted above the curb side gauge panel. The light shields shall be made as large as possible to provide maximum light distribution. Three (3) TecNiq #E10-W000-1 LED lights shall be furnished under the shield. Bulbs which are exposed are unacceptable. The lights shall be switched on at the pump operator's control panel.

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One (1) Identification Plates, Pump Panel  
20-04-5000

### **COLOR CODED IDENTIFICATION PLATES**

Each control valve, gauge and discharge outlet shall be labeled with a color coded identification plate. For ease of viewing and quick identification, the plates shall be a minimum of .75" high x 2.5" wide. For standardization, color coding shall be in accordance with the recommendations of Section A.16.9.1 of NFPA 1901.

One (1) Label, Warning Pump Operator  
20-04-7000

### **WARNING LABEL, PUMP OPERATOR**

A sign shall be provided on the pump operators panel that states the following:

**WARNING:** Death or serious injury might occur if proper operating procedures are not followed. The pump operator as well as individuals connecting supply or discharge hoses to the apparatus must be familiar with water hydraulics hazards and component limitations.

One (1) Class 1 Total Pressure Governor (TPG), Custom Chassis 20-  
25-2200

### **TOTAL PRESSURE GOVERNOR**

The apparatus shall be equipped with a Class1 "Total Pressure Governor" (TPG) that is connected to the Electronic Control Module (ECM) mounted on the engine. The "TPG" shall operate as a pressure sensor (regulating) governor (PSG) utilizing the engine's J1939 data for optimal resolution and response when supported by the engine manufacturer. If J-1939 engine control is not supported, then analog remote throttle control shall be provided by the TPG. The "TPG" is to operate as a pressure sensor (regulating) governor (PSG) eliminating any need for relief valve on the discharge side of the pump.

The TPG shall utilize control algorithms that minimize pressure spikes during low or erratic water supply situations. The TPG shall be backwards compatible to any engine that supplies J1939 RPM, Temperature and Oil Pressure information providing the ability to maintain a consistent fleet fire-fighting capability and reduce operator cross training and confusion.

The TPG shall have the ability to use either a 300 PSI or a 600 PSI transducer for best operation. PSG system diagnostics shall be built in and accessible by technicians. Programmable presets for RPM and Pressure settings shall be easily configurable.

The "TPG" shall also include indication of engine RPM, system voltage, engine oil pressure and engine temperature with audible alarm output for all. The "TPG" uses the J1939 data bus for engine information, requiring no additional sensors to be installed. The TPG shall use J1939 broadcast warnings for the alarm as a standard and allow the "user" to select warning values if "SOP's" dictate.

The pump engaged and "OK to pump" indicator lights shall also be displayed on the "TPG".

One (1) Pump Operator's Control Panel (STD)  
20-27-1000

### **PUMP OPERATOR'S CONTROL PANEL**



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All controls will be mounted so they do not exceed 72" from the operating stand and gauges will be mounted so they do not exceed 84" from the operating stand.

One (1) Master Gauge Panel  
20-27-3110

### **MASTER GAUGE ASSEMBLY**

There shall be One (1) 4" white faced master pressure gauge, liquid filled, 0-400 PSI and one (1) 4" faced master vacuum gauge, liquid filled, -30-0-400 PSI along with test ports provided into one assembly with integrated labeling.

One (1) Gauges, 2.5" Liquid Filled W/ Mid-mount Valve Controls, I.C.  
20-27-6500

### **DISCHARGE GAUGE AND CONTROL ROD**

One (1) 2.5" white faced, brass cased individual pressure gauge, liquid filled, 0-400 PSI for each discharge. Each gauge shall have a color coded bezel with the control rod incorporated into the bezel assembly.

One (1) Pump Panel Switch Control Panel  
20-40-8010

### **SWITCH CONTROL PANEL**

There shall be (1) soft touch switch assembly provided on the gauge panel for switching controls. The assembly shall be equipped with either 2, 4, or 8 switches.

One (1) Third Party Acceptance Plate  
20-48-2000

### **ACCEPTANCE PLATE**

A third party acceptance plate will be provided on the pump panel.

One (1) Pump Identification Nameplate  
20-48-3000

### **PUMP IDENTIFICATION**

One (1) pump identification nameplate shall be provided on the pump panel.

#### NOTES

Use IC bezels DON'T add HALE tags on the pump panel.  
Leave a location next to gauge for a foam gauge if added.

One (1) Water Level Indicator, I.C. LED  
20-80-8100

### **WATER LEVEL INDICATOR**

One (1) Innovative Controls 14 LED light water level indicator shall be provided on the pump operator's gauge panel.

#### NOTES

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Leave a location next to gauge for a foam gauge if added.

One (1) Extra Water Level Indicator, I.C. LED  
20-80-8125

### **WATER LEVEL INDICATOR**

One (1) Innovative Controls 14 LED light water level indicator shall be provided on the pump operator's gauge panel.

### SHOP NOTES

Located at the rear near tank fil.

One (1) 1000 Gallon Tank, Upf Poly III  
22-20-3010

### **BOOSTER TANK**

The tank shall have a capacity of 1000 U.S. Gallons.

The booster tank shall be constructed of .50" to 1" thick PT3™ polypropylene, a non-corrosive stress relieved thermo-plastic and UV stabilized material, black in color. The booster and/or foam tank shall be designed to be completely independent of the body and compartments. All joints and seams are to be nitrogen fused for strength and integrity. The tank construction shall include PolyProSeal™ technology wherein a sealant shall be installed between the plastic components prior to being fusion welded.

The top of the booster tank is fitted with removable lifting assembly designed to facilitate tank removal. The transverse and longitudinal swash partitions shall be manufactured of a minimum of 3/8" PT3™ polypropylene. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow. All swash partitions interlock with one another and are completely fused to each other as well as to the walls of the tank. All partitions and spacing shall comply with NFPA 1901. The walls shall be welded to the floor of the tank providing maximum strength as part of the tank's unique Full Floor Design™. Tolerances in design allow for a maximum variation of 1/8" on all dimensions.

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of 1/2" PT3™ polypropylene and shall be a minimum dimension of 8" x 8" outer perimeter. The fill tower shall be blue in color indicating that it is a water-only fill tower. The tower shall be located in the left front corner of the tank unless otherwise specified by the tank manufacturer to the purchaser. The tower shall have a 1/4" thick removable polypropylene screen and a PT3™ polypropylene hinged cover. The capacity of the tank shall be engraved on the top of the fill tower lid. Inside the fill tower there shall be a combination vent/overflow pipe. The vent overflow shall be a minimum of schedule 40 polypropylene pipe with a minimum I.D. of 4" that is designed to run through the tank, and shall be piped to discharge water behind the rear wheels as required in NFPA 1901 so as to not interfere with rear tire traction. The tank cover shall be constructed of 1/2" thick PT3™ polypropylene and UV stabilized, to incorporate a multi-piece locking design, which allows for individual removal and inspection if necessary. The tank cover(s) shall be flush or recessed 3/8" from the top of the tank and shall be fused to the tank walls and longitudinal partitions for maximum integrity. Each one of the covers shall have hold downs consisting of 2" minimum polypropylene dowels spaced a maximum of 40" apart. These dowels shall extend through the covers and will assist in keeping the covers rigid under fast filling conditions. A minimum of two lifting dowels shall accommodate the necessary lifting hardware.

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The sump shall be constructed of a minimum of 1/2" PT3™ polypropylene and be located in the left front quarter of the tank, unless specified otherwise. There shall be a 3" schedule 40 polypropylene pipe installed that will incorporate a dip tube from the front of the tank to the sump location. An anti-swirl plate will be mounted inside the sump approximately 3" above the inside floor. The sump shall have a minimum 3" N.P.T. threaded outlet on the bottom for a drain plug per NFPA.

### NOTES

Shall include a provision for a 10" newton dump in rear center compartment. Shall be shipped with tank with a removable cover over dump in the event option is added. Must not leak without dump installed. Tank will have a Newton Knock-out option added for future install of Newton Dump. See UPF options 824-0850 & 980-0053.

One (1) Tank Vent/Overflow 4" (STD)  
22-40-4000

#### **TANK OVERFLOW**

The vent overflow shall be a schedule 40 polypropylene pipe with a minimum I.D. of 4" that is designed to run through the tank and piped to discharge behind the rear wheels.

One (1) Tank Warranty, UPF 22-  
50-1000

#### **BOOSTER TANK WARRANTY**

The tank shall carry "**THE ALL OUT NO FAULT LIFETIME WARRANTY**" which is to be provided by the tank manufacturer.

One (1) Tank Mounting  
22-50-5000

#### **TANK MOUNTING**

The booster tank will rest on body crossmembers that are spaced to allow no more than 530 square inches of unsupported area under the tank if the tank height is 40" or less. Where the overall height of the tank exceeds 40", crossmember spacing must be reduced to allow for not more than 400 square inches of unsupported area. In addition, the tank must be isolated from crossmembers through the use of hard rubber strips with a minimum .25" thickness x 1.50" width and a minimum of 60 durometer hardness. The rubber will be a channel shape extrusion so it interlocks over the crossmembers to prevent movement **(NO EXCEPTIONS)**.

The tank will sit cradle-mounted using four (4) corner angles approximately 4" x 4" x 6" high x .25" welded to the body crossmembers. The angles will keep the tank from shifting left to right or front to rear. The tank design is based on a free floating suspension principal. To minimize the movement of an empty tank during vehicle operation, the hosebed slats and dividers will act as a retainer and be fastened front and rear. The tank shall be completely removable without disturbing or dismantling the apparatus body structure.

One (1) 20 Gal Foam Tank - Integral Poly III, Class A  
22-60-2000

#### **FOAM TANK**

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There shall be a Class A foam tank built into the booster tank with a capacity of 20 U.S. Gallons of foam concentrate.

The foam tank shall have a separate fill tower constructed of 1/2" PT3™ polypropylene and shall be a minimum dimension of 8" x 8" outer perimeter. Each foam fill tower shall be constructed of a colored material (green for Class A foam, yellow for Class B foam and black for other foams) indicating which tower is to receive each type of foam utilized. The capacity of the tank shall be engraved on the top of the fill tower lid.

The tower shall be located in the right front corner of the tank unless otherwise specified. The tower shall have a 1/4" thick removable polypropylene screen and a cover with a stainless steel hinge. Inside the fill tower, approximately 1.5" down from the top, there shall be an anti-foam fill tube that extends down to the bottom of the tank.

The foam tank shall be furnished with a pressure/vacuum vent that allows the tank to adjust automatically for changes in pressure or vacuum when filling or withdrawing foam concentrate from the tank. The vent shall not permit outside air to enter the tank freely except during operation or for normal changes in volume due to changes in temperature. The vent shall be installed in the lid of the fill tower.

A label shall be placed at or near any foam concentrate tank fill opening that specifies the type of foam concentrate the system is designed to use, any restrictions on the type of foam concentrate that can be used with the system, and a warning message that reads "Warning: Do Not Mix Brands and Types of Foam."

### SHOP NOTES

Shall include taps in front of tank for future install of foam system

One (1) Hose Bed, STD Width  
24-05-1002 20

#### **HOSE BED**

The inside body width between panels shall be seventy (70") inches.

The capacity of the hose bed shall meet all requirements set by the N.F.P.A. Pamphlet No. 1901. There shall be a minimum of 55 cu. ft. of storage space.

The interior shall be free of any projections or sharp edges that might damage fire hose or other equipment.

The floor of the hose bed shall be .125" aluminum formed decking with ventilation and drainage holes. The entire bed shall be easily removable from the body. The floor shall allow ample air circulation between the top of the tank, and the underside of the hose bed floor.

To reduce maintenance and eliminate paint chips, the sides of the hose body that are above the hose bed floor shall have an unpainted oscillated finish and a polished stainless steel scuff strip shall be provided at the rear of the hosebed.

One (1) Hose Load Requirements  
24-05-9000

78796-0004  
20

02/23/17

## Marion Body Works, Inc

### **HOSE LOAD**

The hosebed will be sized to accommodate the following hose load:

Two (2) Hose Bed Divider  
24-10-0500

### **HOSE BED DIVIDER(S)**

Two (2) adjustable hose bed divider(s) shall be provided to separate the different hose loads. To reduce maintenance and eliminate paint chips all hose bed dividers shall have an unpainted buffed aluminum finish. The divider(s) shall be constructed of .18" smooth aluminum with a round radius corner at the rear. The bottom of each divider shall be welded to a heavy duty, full length slotted extrusion for extra divider rigidity.

S Two (2) Hand Hold Cut-Outs In Dividers 24-  
10-5000

### **HAND HOLE CUT-OUTS**

The hose bed dividers will have hand hold cut-out in the upper and rear edge, follow the curve of divider. This hole will be sized so a gloved hand can fit into easily.

S One (1) Hose Bed Cover, Vinyl Tarp, Awning Rail at Front 24-  
30-4025

### **HOSE BED COVER**

A removable heavy duty waterproof vinyl hose bed cover shall be provided. The hose bed cover shall extend over the rear of the hose bed. Front of cover to slide in RV style slide, sides shall be held in place with velcro and "Lift a Dot" fasteners, and rear shall be secured by use of straps with Orange pull tabs around the access rail.

### SHOP NOTES

Ship loose after fitment. Black color.

One (1) Body Specification  
25-05-0000

### **BODY SPECIFICATIONS**

One (1) Body Construction (STD-P)  
25-05-2500

### **BODY CONSTRUCTION**

All body framing, doors, skin, etc. shall be of all aluminum construction to enhance vehicle performance, reduce overall maintenance and maximize available payload by minimizing the body weight. For maximum strength, the body framing shall be all extruded construction.

The body shall be modular in construction, completely separate from the pump compartment, so it may easily be removable from the apparatus chassis without disturbing the fire pump. A minimum of a 1" space shall be provided between the pump compartment and the body module. Spacing is to allow for chassis flexing when driving over uneven terrain to avoid potential stress cracking.

## Marion Body Works, Inc

One (1) Crossmembers (STD-P)  
25-10-4500

### **CROSSMEMBERS**

There shall be a minimum of three (3) body structural crossmembers of 3" x 2" x .25" wall thickness, 6061-T6 aluminum extruded rectangular tubing.

To eliminate corrosion, all crossmembers and structural tubing will have the ends capped and solidly welded shut on all sides to eliminate the possibility of dirt, water, and salt from entering (NO EXCEPTIONS).

One (1) Uprights (STD-P)  
25-15-4000

### **UPRIGHTS**

There shall be 3" x 2" x .125" wall thickness, 6061-T6 aluminum extruded rectangular tubing between the exterior side compartments. These shall be tied into the main crossmembers to give the side sheets and any equipment mounted on them adequate support.

One (1) Corner Posts (STD-P)  
25-25-4000

### **ROOF COVE AND CORNER POSTS**

For body strength, the corner posts and roof cove perimeter shall have a 1.5" radius of 6061-T6 extruded .125" aluminum. All corners shall have a 1.5" radius cast aluminum ball cap at the top corners of the body.

One (1) Rubrails, Extruded Channel - Pumper  
25-40-5010

### **RUBRAILS, REMOVABLE EXTRUDED CHANNEL**

Rubrails will be heavy duty extruded aluminum C-channel design with a bright dipped anodized finish. The top edge of the rubrail will include a ribbed design to help hide scratches and the inside of the channel will be striped with 3M diamond grade red-white reflective tape for improved safety. The rubrails shall have a .25" drain gap and will be located under each compartment door flush with the rear step and pump compartment running boards. These shall be fastened to the threshold extrusion on for ease of service and replacement in case of damage.

One (1) Body Guards (STD-P)  
25-50-1500

### **BODY GUARDS**

The left and right body side compartment front panels shall be bright aluminum treadplate.

One (1) Fenders (STD)  
25-55-0500

### **FENDERS**

## Marion Body Works, Inc

Fenders are to be sized to allow ample clearance for tire chains. The fender liners shall extend full depth to the rear springs and be welded to the rear body panels. The fender liners are to be sealed with continuous welds to the outside and inside body panels to provide maximum strength, elimination of any pockets for the accumulation of dirt and road salt, and to provide ease of cleaning.

One (1) Fenderettes  
25-55-2000

### **FENDERETTES**

The fenderettes shall be polished stainless steel held in place to the wheel housing with stainless steel cap screws and well-nuts for easy replacement. The fenderettes and the fasteners shall be isolated from the wheel housing to prevent electrolysis. A trim molding shall be provided between the fenderettes and wheel housing. The fenderettes shall be mounted to the body thereby affording superior protection from debris hitting the sides of the body.

One (1) Fender Panels (STD)  
25-55-5000

### **FENDER PANELS**

The body panels above the wheel housing shall be .10" bright aluminum treadplate overlay fastened with stainless steel torx head screws for ease of replacement in case of an accident.

One (1) Hose Body Sides (STD-P)  
25-70-4000

### **HOSE BODY SIDES**

The hose body sides shall be reinforced with 2" x 3" x .125" 6061-T6 extruded aluminum rectangular vertical supports welded to the outside of the panels for support of ladders and equipment and shall be tied into the main crossmembers for support.

The hose bed walls shall be capped with 2" x 2" x .125" aluminum tubing and wrapped on both sides with .125" aluminum to increase the panel strength and provide for a smooth hose body.

One (1) Body Mounts, Nylon Sills  
25-80-4010

### **BODY MOUNTS - NYLON**

There shall be 75,000-90,000 PSI yield high strength .625" bolts to attach the body brackets to the chassis frame, mounted so as to prevent any movement of the body.

Full length nylon sills shall be located between the chassis frame rails and the body.

One (1) Compartment Vents (STD)  
27-10-1000

### **COMPARTMENT VENTS**

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Vents shall be provided in each compartment and so located that water cannot normally enter the compartment through the openings. Vents shall be fabricated integrally into the wall of the compartment. Each compartment shall have sufficient vents to provide good air circulation to dry out compartment interiors and equipment.

One (1) Exterior Compartment (STD)  
27-15-0500

### **EXTERIOR COMPARTMENTS**

All general framing to be aluminum. Compartments shall be an integral part of the body construction and shall also be suspended by the floor crossmembers. The floor crossmembers shall be attached to the main body uprights located between the compartment openings.

One (1) Compartment Floors (STD)  
27-15-4000 10

### **COMPARTMENT FLOORS**

Compartment floors will be 100% welded to the threshold extrusion. Floor material to be .125" smooth aluminum and to be of integral support to the front, rear and side compartment walls.

The center portion of the floor will be reinforced with an extruded aluminum channel to prevent buckling and oil-canning. To eliminate corrosion the channels will be inverted to eliminate the possibility of dirt, water, and salt from entering **(NO EXCEPTIONS)**.

### **DOOR THRESHOLD**

The door threshold shall be constructed from a sealed box type 6061-T6 aluminum extrusion. The extrusion shall be tied into the extruded uprights and shall provide a flush "sweep-out" style floor with no lip. The extrusion shall run under the compartment floor to prevent damage when heavy equipment is dropped on the front lip of the floor. A formed up compartment floor providing the sweep out lip area shall not be acceptable.

One (1) Compartment Walls (STD)  
27-30-2000 10

### **COMPARTMENT WALLS**

The compartment sidewalls and rear wall to be .125" smooth aluminum. All compartment seams will be 100% sealed so to provide a water tight compartment.

The side compartment walls will be double wall design so all wiring can be hidden and also allow outlets, switches, reel buttons, breaker boxes, etc. to be recessed into the walls. **Separating the compartments with a single shared wall will not be acceptable. (NO EXCEPTIONS)**

One (1) Roll Up Amdor Door  
27-40-5010

### **ROLL-UP COMPARTMENT DOORS**



## Marion Body Works, Inc

The body compartments shall be equipped with AMDOR brand roll up doors.

The doors shall be constructed of double wall slats that provide a smooth surface on the interior of the door to prevent interference with compartment contents. The slats shall have recessed bulb type slat seals which provide a weatherproof compartment and reduce the effects of vehicle vibration. The aluminum extrusions shall be equipped with nylon universal end shoes with positive snap-in securement's that slide in the track and side frame section. The top frame section shall include a gutter, non-marring top seal and bumper to cushion the bottom rail.

The latching mechanism will be a lift bar arrangement, which utilizes a door-wide spring loaded bar and two (2) cam-surfaced latch points. Any roll door that exceeds a 63" high door opening from the rubrail or above 30" if over a wheel well shall include a pull down strap to make for easy closing.

### NOTES

All doors shall include the new bungee style pull down straps.

S  
27-40-5830

One (1) Roll-up Door, Amdor, 56"H x 38"W

One (1) Finish, Roll-Up Door, Anodized  
27-40-8015 10

### **DOOR FINISH**

The body side compartment roll up doors shall have a natural anodized finish.

One (1) Finish, Rear Roll-Up Door, Anodized  
27-40-8048

### **DOOR FINISH**

The rear compartment roll up door shall have a natural anodized finish.

Seven (7) Drip Pan, Roll-Up Doors  
27-40-9500

### **DRIP PANS**

The exterior compartment doors shall have a drip pan provided under the shutter to protect the door and to eliminate water from the doors entering the compartment when rolled up. The pans shall have tubes to run the water in between the compartment walls and exit underneath the apparatus. The pans shall be spring loaded for easy removal in the even the door must be serviced.

### SHOP NOTES

Drip pans to be from Amdor.

### NOTES

Will be the Amdor drip pans

One (1) Rear Step, 12" Deep Recessed  
28-10-2762

## Marion Body Works, Inc

### **REAR HOSE BED ACCESS STEPS AND SUPPORT**

The rear hose bed access step shall be 12" deep x 43" wide. Step material to be .188" serrated bright aluminum treadplate with the rear edge formed the same as the running boards. Step to be bolted on and easily removable in case of an accident. The rear step shall be supported by a heavy duty sub-structure. A drain gap shall be provided between the body and the step to promote safer footing.

The maximum stepping height shall not exceed 18" with the exception of the ground to the first step which shall not exceed 24". Steps shall be capable of sustaining a static load of 500 lbs., shall have skid resistant surfaces and have a minimum stepping area of 35 sq. in.

There shall be a warning label mounted above the rear step.

"DANGER - DO NOT RIDE ON REAR STEP WHILE VEHICLE IS IN MOTION. DEATH OR SERIOUS INJURY MAY RESULT."

One (1) Steps, Intermediate, Hosebed Access  
28-10-2850

### **INTERMEDIATE STEPS**

Intermediate hosebed access steps fabricated from .125" serrated bright aluminum treadplate shall be located above the rear step, one (1) each side, on top of the lower side compartments.

S Ten (10) Step, Folding Chrome with Upper and Lower LED Light, IC 28-  
10-5100

### **STEP, FOLDING, CHROME PLATED**

Ten (10) heavy duty folding step(s) with a slip resistant surface, shall be provided in the location specified. The step(s) shall include a built-in LED light, located above and below the stepping surface, to provide better visibility.

### SHOP NOTES

Locate three on each side, front of body.  
Locate two on each side, rear of body.

### NOTES

"S" = IC step brand (vendor shall supply NC)

One (1) Access Rails 36" (STD-P & RS)  
28-40-2700

### **ACCESS RAILS**

Access rails shall be 1.25" diameter extruded aluminum tubing in chrome plated stanchions.

There shall be two (2) 36" long access rails mounted on the rear of the body.

One (1) Access Rail, Just Below Hose Bed  
28-40-7000

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**ACCESS RAIL, BELOW HOSE BED**

One (1) full width hose bed access rail shall be mounted just below the floor of the hose bed.

One (1) Compartment Top Overlay  
31-50-5200

**COMPARTMENT TOP OVERLAY**

Compartment top framing shall be covered with a bright aluminum treadplate.

One (1) Paint Body (Pumper)  
32-05-1000 10

**PAINT**

The complete apparatus body and any applicable doors shall be painted. All exposed metal surfaces which are not chrome plated or polished shall be thoroughly cleaned and prepared.

To prevent corrosion and to insure bonding of primer, the body shall be cleaned and degreased with the paint manufacturer's recommended wax and grease remover. All irregularities in primed surfaces shall be sanded down before application of the finished coats. All removable items such as compartment doors shall be removed and painted separately.

To prevent electrolysis around fasteners, special attention must be given to how components are fastened to the exterior of body. All vendor-supplied screws shall be discarded and the manufacture shall replace them with their own stainless steel screws. In addition, every screw hole possible that protrudes into the body shall be punched with a square hole and then a plastic insert will be installed to isolate the dissimilar metals. Where an insert cannot be used, a zinc-rich type coating will be applied to each screw before they are installed. **(NO EXCEPTION TO THIS REQUIREMENT)**

PPG polyurethane "Delfleet® Evolution" lead free paint shall be used on the body. Consistent with this requirement and to insure optimum adhesion of final paint and long service of paint, all related materials shall be those specified by the paint manufacturer for use with their finish. These related products shall include, but not be limited to the following: PPG Epoxy primer, catalysts, thinners, and hardeners.

The body shall be painted the same color as the chassis.

One (1) Paint Body (Pumper) C.S. 32-  
05-1001 10

One (1) Un-painted Pump Compartment and Pump (STD)  
32-05-1500

**PUMP COMPARTMENT (UN-PAINTED)**

The pump will be black and the stainless plumbing will be left natural. The open bin area and the crosslays above the pump shall remain in a natural finish.

One (1) Un-painted Cab (STD)  
32-10-0500

**CAB PAINT**

## Marion Body Works, Inc

The cab and wheel exteriors shall be supplied in the proper color and shall not be repainted. Fire Department to use an available color from the chassis manufacturer.

One (1) Compartment Finish, Light Gray Spatter (Pumper)  
32-20-1000 20

### **COMPARTMENT FINISH**

To reduce marring and scuffing, the insides of the exterior compartments shall be painted with a durable light gray spatter type coating.

One (1) Shelf & Tray Finish, Oscillated  
32-20-2850

### **SHELF & TRAY FINISH**

Any shelves, trays, etc. shall be left a natural aluminum oscillated finish to allow for easy equipment mounting. The sides and forward face edges of all the roll-out items will include a 3M diamond grade red-white reflective stripe to improve safety.

One (1) Undercoating (STD-P)  
32-35-1001

### **UNDERCOATING**

The body undercarriage shall be undercoated to provide a corrosion resistant surface and dampen road noise. This shall include the underside of the compartments, rear step, and wheel well liners. The undercarriage of the chassis shall be as is provided by the chassis manufacturer unless specified otherwise.

One (1) Reflective Material, Crew Doors, (Com.)  
32-35-9015

### **REFLECTIVE MATERIAL**

All crew compartment doors shall have a minimum of 96 square inches of reflective material affixed to the inside of each door.

One (1) Striping 6" Reflective Scotchlite  
32-70-0006

### **REFLECTIVE STRIPING**

A 6" horizontal Scotchlite reflective cab and body stripe shall be provided.

Stripe shall break at all unpainted surfaces. Where necessary, the striping material shall be applied to a smooth aluminum plate mechanically fastened to the apparatus.

### SHOP NOTES

White.

One (1) "S" Reflective Scotchlite, Single Stripe (PR)

Marion Body Works, Inc

32-70-0100 10

**"S" REFLECTIVE STRIPING**

A "S" striping configuration shall be provided in the horizontal Scotchlite reflective striping.

SHOP NOTES

Shall be a "hockey stick" style transition on the front compartment to above wheel well height toward rear.

One (1) Striping, 6" Chevron Rear, Reflective Diamond Grade w/Lamination  
32-70-4021

**REFLECTIVE STRIPING CHEVRON**

A two color 6" Scotchlite diamond grade reflective V pattern Chevron shall be applied to the rear of the apparatus. The Chevron stripe shall alternate between yellow green with red stripes with overlamine and shall cover the entire rear painted body surface.

One (1) Overall Length Requirement  
33-49-1000

**OVERALL LENGTH REQUIREMENT**

SHOP NOTES

The overall length of the body should not exceed \_\_\_\_\_".

One (1) Overall Height Requirement  
33-49-2000

**OVERALL HEIGHT REQUIREMENT**

SHOP NOTES

The overall height of the body should not exceed \_\_\_\_\_".

One (1) 102" Wide Body  
33-49-5000

**OVERALL WIDTH**

Overall Width = 100" + rubrails.

One (1) Compartment Sizes, 46", High Side, Split Depth, R.S., Roll-up Doors  
34-08-0220

**Road Side - front to rear (Nominal door opening size.)**

1. 63" high x 46" wide x 27" deep-lower, 13" deep-upper. Clear depth. Roll-up door.
2. 30" high x 57" wide x 13" deep. Clear depth. Roll-up door.
3. 63" high x 46" wide x 27" deep-lower, 13" deep-upper. Clear depth. Roll-up door.

OS One (1) Compartment Sizes, 46", High Side, Split Depth, C.S., Roll-up Doors

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34-08-0520

**Curb Side - front to rear (Nominal door opening size.)**

4. 63" high x 46" wide x 27" deep-lower, 13" deep-upper. Clear depth. Roll-up door.
5. 30" high x 57" wide x 13" deep. Clear depth. Roll-up door.
6. 63" high x 46" wide x 27" deep-lower, 13" deep-upper. Clear depth. Roll-up door.

Note: Compartment depth in Curbside 1 compartment subject to change due to emissions requirements.

S One (1) Compartment Size, Rear Compt., Roll-up Door, 56"H x 38"W 34-08-0994

**Rear Compartment (Nominal door opening size)**

56" high x 38" wide x 20" deep. Clear depth. Roll-up door.

NOTES

Backwall of rear compartment shall have a sealed removable access plate in the event of a future install of a rear dump (tank requested with built in newton dump provision)

One (1) SELECT COMPARTMENT FEATURES, ROAD SIDE 1  
34-78-1000 10

**EXTERIOR COMPARTMENT FEATURES, ROAD SIDE 1**

One (1) SELECT COMPARTMENT FEATURES, ROAD SIDE 2  
34-78-1003 10

**EXTERIOR COMPARTMENT FEATURES, ROAD SIDE 2**

One (1) SELECT COMPARTMENT FEATURES, ROAD SIDE 3  
34-78-1005 10

**EXTERIOR COMPARTMENT FEATURES, ROAD SIDE 3**

One (1) SELECT COMPARTMENT FEATURES, CURB SIDE 1  
34-78-1020 10

**EXTERIOR COMPARTMENT FEATURES, CURB SIDE 1**

One (1) SELECT COMPARTMENT FEATURES, CURB SIDE 2  
34-78-1022 10

**EXTERIOR COMPARTMENT FEATURES, CURB SIDE 2**

One (1) SELECT COMPARTMENT FEATURES, CURB SIDE 3  
34-78-1024 10

**EXTERIOR COMPARTMENT FEATURES, CURB SIDE 3**

One (1) SELECT COMPARTMENT FEATURES, REAR  
34-78-1040 10

**EXTERIOR COMPARTMENT FEATURES, REAR**

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One (1) SELECT WHEEL WELL COMPARTMENT FEATURES, ROAD SIDE 34-78-1060 10

**WHEEL WELL COMPARTMENT FEATURES, ROAD SIDE**

One (1) SELECT WHEEL WELL COMPARTMENT FEATURES, CURB SIDE 34-78-1070 10

**WHEEL WELL COMPARTMENT FEATURES, CURB SIDE**

Two (2) Dual Scba Bottle Compt In Wheelhousing Treadplate Door 34-80-2001

**DUALSCBA BOTTLE COMPARTMENT**

Two (2) SCBA bottle compartment(s) shall be provided in the rear fender housing area. Compartment shall be constructed from aluminum with the bottle storage having lining to protect scuffing of the SCBA bottles. The compartment shall have a treadplate door and will include black non-locking flush pull latches.

NOTES

Shall be lift and turn latches on all wheel well compartments. Would prefer bent or kink door with smaller gasket - see Ross

Two (2) Dual Scba Bottle Compt In Wheelhousing Treadplate Door 34-80-2001

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Six (6) Adjustable SCBA Standards 36-00-4000

**ADJUSTABLE SCBA MOUNTS**

The specified compartment shall be equipped with heavy duty adjustable SCBA mounting rails. These rails are to be the infinitely adjustable type, fabricated from 6061-T6 extruded aluminum welded to the compartment walls.

SHOP NOTES  
Rails to be spaced for SCBA mounting bracket model # \_\_\_\_\_.  
backwall upper each side compartment

Seven (7) Shelving Adjustable Standards 36-15-6000

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### **SHELVING STANDARDS FOR ADJUSTABLE SHELVES**

Seven (7) compartments shall be equipped with heavy duty adjustable shelving standards, one per wall on all depths 20" or less and two per wall on depths greater than 20". These standards are to be the infinitely adjustable type of 6061-T6 extruded aluminum, located 2" up from floor and 12" down from ceiling.

#### SHOP NOTES

All compartments shall feature standards.

One (1) Rear View Camera, Zone Defense, Simplex, Cab  
55-80-1235

### **REAR VIEW CAMERA, SIMPLEX CAB**

A Zone Defense rear view camera system model #CAM.313C shall be provided and integrated into the Simplex display screen located in the cab. The camera shall feature 18 infrared emitters for 0 lux operation and be activated with the reverse signal or manually. The mounting location shall provide a wide angle field of view, at the rear of the vehicle.

One (1) Wiring Diagram (STD)  
60-05-1000

### **WIRING DIAGRAMS**

Two (2) complete copies of the body electrical wiring diagrams shall be supplied with the unit.

Separate diagrams for the 12 volt DC and 120 volt AC (if applicable) electrical systems shall be provided. Diagrams shall be custom drawn for this specific apparatus. Generic wiring diagrams are not acceptable.

One (1) 12 Volt Wiring (Commercial Pumper)  
60-05-2645

### **12 VOLT WIRING - MULTIPLEXING**

All of the emergency electrical equipment shall be served by circuits separate and distinct from the vehicle circuits. Body wiring shall be thermo plastic harness type, GXL (125 degree Centigrade) color and number or function coded. The wiring shall be grease, oil and moisture resistant, routed in convoluted looms and in protected locations. Wires and looms shall be neatly and securely fastened, and all apertures with proper grommets for passing wiring.

Solderless insulated crimp connectors shall be provided. Wire nut, insulation displacement, and insulation piercing connections shall not be used. All electrical connections that are exposed to the elements shall be of the heat shrink sealant type **(NO EXCEPTIONS)**.

The body electrical shall incorporate a system for controlling the electrical devices of the vehicle. This



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system shall utilize a Controller Area Network (CAN) protocol providing multiplexing control signals for "real time" operation. It shall consist of several modules strategically located throughout the vehicle and interconnected via "twisted pair" control wiring. Each module shall be readily available for inspection or service. The multiplexed system shall consist of a universal System Manager Control Module, input/output switch modules and Power Distribution Modules **(NO EXCEPTION)**.

The electrical system shall incorporate a dial-up modem allowing the ability for the body manufacturer technicians to remotely diagnose the system. When connected by a telephone cable to the public telephone network, the body manufacturer technicians will be able to connect to the apparatus electrical system and view in real time all inputs and outputs on all modules on the network as well as each module's real-time status **(NO EXCEPTION)**.

The electrical system will incorporate a data-logger. The data-logger will record minute by minute data containing the status of all modules in the electrical system and any error messages that may occur. This data can be remotely accessed via the modem or by diagnostic software when a laptop is connected to the system. The data-logger will store up to 32 programmable input or output states, 200 recorded faults, and up to 6000 event captures, all time stamped, with the oldest data being overwritten first when the memory is full. It shall incorporate its own battery supply should power to the system be interrupted.

Junction areas with removable aluminum covers shall be located inside the road side and curb side front compartments. The Universal System Manager Control Module shall be located in the exterior body compartments for ease of diagnostics, service, and troubleshooting.

The body shall be fabricated so as to provide protected wiring raceways.

One (1) Electrical Testing  
60-05-5000

### **ELECTRICAL TESTING**

Electrical continuity shall be verified from the chassis or body to all line voltage electrical enclosures, light housings, motor housings, light poles, switch boxes, and receptacle ground connections that are accessible to fire fighters in normal operations as per NFPA section 22.15.4.

One (1) Display Module, Cab, 4.3", Sim-Plex  
60-05-6150 10

### **DISPLAY MODULE**

A display will be provided in the cab to assist in management of the electrical system. The display will be a 4.3", full color LCD display with (2) video inputs. The (8) display buttons will be configured to allow for the control of emergency master and non-emergency master functions and are backlit for ease of viewing.

The display will provide the following:

- 0• Switches for warning, generator, etc.
- 0• Door ajar visual aid
- 0• Diagnostic access
- 0• Fluid ID information
- 0• Custom logo start-up screen
- 0• Back-up camera (optional)
- 0• Toggle to second screen program (if applicable)

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One (1) Master Disconnect Switch (STD)  
60-10-1000

### **MASTER DISCONNECT SWITCH**

As per NFPA 1901, a master disconnect switch shall be provided between the starter solenoid(s) and the remainder of the apparatus electrical loads. The batteries shall be connected direct to the starter solenoid(s) and the alternator shall be wired direct to the batteries through the ammeter shunt(s) so as not to be wired through the master disconnect switch. A 200 amp power relay solenoid shall provide power for all of the body wiring. When possible, this circuit shall be provided by the chassis manufacturer. If it is not available by the chassis manufacturer, then the body builder will wire it through the chassis ignition system.

S One (1) Battery Conditioner, Kussmaul 12 60-  
20-2500

### **BATTERY CONDITIONER**

The vehicle shall be equipped with a Kussmaul Auto Charge 12, model #091-9C-HO dual battery conditioner. Output of the battery charger shall be 12 amps at intermediate charge. The battery conditioner shall be wired to the 120 volt shoreline inlet receptacle.

#### SHOP NOTES

Shall be the 12 HO model

One (1) Shoreline Inlet, Auto Eject  
60-25-1000

### **AUTOMATIC SHORELINE DISCONNECT WITH SNAP COVER**

A 120 volt Shoreline inlet shall be provided in the location specified. To eliminate broken cables which result when drivers forget to remove the shoreline, the inlet connector shall automatically eject the shoreline plug-in when the chassis engine is started. The automatic disconnect shall be a Kussmaul model #091-55-20-120 complete with a rear protective cover for the eject device and a weatherproof snap cover for the receptacle. The inlet shall be labeled with a permanent nameplate listing the voltage and type of current.

#### SHOP NOTES

Locate on road side cab step.

One (1) Cab Console Panel (STD)  
60-30-1000

### **CAB CONSOLE PANEL**

A console panel shall be provided in the cab at a location that is convenient for use by the driver or officer.

The panel will utilize state of the art multiplex components and will include a built in system fault indicator light to notify of any electrical problems. Eight (8) touch pad type solid state switches shall be provided with built in indicator lights. Labeling for switch identification shall be back lighted for night operation and located in the front face of switch for easy identification.

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### SHOP NOTES

Shall include a book storage on the rear.

### NOTES

All black powder coated no raw aluminum

One (1) Switch Layout, Cab Console  
60-30-7000

#### **SWITCH PANEL LAYOUT**

### SHOP NOTES

The switch panel layout will be as follows:

One (1) Switch Master Warning Light (STD)  
60-32-0500

#### **MASTER WARNING LIGHT SWITCH**

A master warning light switch shall be provided on the cab switch console. The switch shall permit preselection of the emergency warning lights so that all warning lights can be turned on simultaneously through the sequencer/load manager.

There shall also be an interlock provided with the parking brake to change the visual warning to indicate "BLOCKING RIGHT OF WAY" mode.

One (1) Lamp Sequencer/Load Manager - MBW Furnished  
60-32-7000

#### **LAMP SEQUENCER/LOAD MANAGER**

Provisions will be provided within the Multiplexing system for sequencing and load management.

In case of a low voltage situation, the system will shed the selected load until the proper voltage is maintained. After the voltage is stabilized the lights will then again switch on sequentially.

One (1) Low Voltage Alarm (STD)  
60-32-8000

#### **LOW VOLTAGE ALARM**

An audible alarm and visual warning light will be installed in the cab to alert of a low voltage situation. The alarm and light will be activated when the voltage at the batteries or at the master load disconnect switch drops below 11.8 volts for more than 120 seconds.

One (1) Running Lights, LED, Aerial/Pmpr/RPM/Tnkr  
62-00-2100

#### **RUNNING LIGHTS, LED**

Body shall be equipped with all lighting and reflectors as required by Federal Motor Vehicle Safety

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Standards.

Clearance lights shall be LED type.

One (1) License Plate Light, LED, Ri-Tar #M27  
62-00-3510

The license plate light shall be Ri-Tar model #M27 LED license plate light with chrome housing.

One (1) Marker/Turn Signal Lights, LED, Rear Body Fender  
62-05-3050

### **MARKER/DIRECTIONAL LIGHTS**

Two (2) amber led marker/directional lights shall be provided, one each side, in rear fenderwells.

One (1) Stop, Tail, & Separate Turn Signal w/ Arrow - Whelen 600 LED  
62-06-2500

### **STOP, TAIL, AND TURN LIGHTS**

One (1) rectangular Whelen 600 series LED amber arrow light each side of body for turn signals.

One (1) rectangular Whelen 600 series LED light with red lens each side of body for stop and tail.

One (1) Backup Light - Whelen 600 LED  
62-06-4010

### **BACKUP LIGHTS**

One (1) Whelen 600 series maximum intensity LED light shall be provided on each side of body for the backup light, wired to the reverse circuit of the truck transmission.

Seven (7) Compartment Lights, Amdor LED, 2-Strip Lights  
62-15-2022

### **AMDOR COMPARTMENT LED STRIP LIGHTS**

Compartment(s) specified shall have two (2) Amdor LED strip lights provided. The light will include a translucent lens and have lights located every 3".

One (1) Door Ajar Indicator Light  
62-22-7900

### **DOOR AJAR INDICATOR LIGHT**

There shall be a flashing red "do not move apparatus when light is on" indicator light in the cab to indicate that a cab door, entrance door, or compartment door is not in the closed position. Light will only illuminate when the parking brake is not fully engaged.

One (1) Engine Compartment Light (LED)  
62-22-8400

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### **LIGHT IN ENGINE COMPARTMENT**

One (1) surface mounted 12" Amdor H2O LED strip light shall be provided in the engine compartment. The light is to be switched with the marker light circuit and parking brake. The light shall be spaced so as to provide the best possible lighting within the compartment.

One (1) Pump Compartment Light (STD)  
62-22-9500

### **LIGHT IN PUMP COMPARTMENT**

One (1) grommet mounted 4" diameter light shall be provided in the pump compartment. Light to be switched through the gauge panel light switch. The light shall be spaced so as to provide the best possible lighting within the compartment.

One (1) Step Lights, LED, TecNiq #E03 (Pumper MID)  
62-50-5014

### **STEP LIGHTS, LED**

Step lights shall be wired through the marker light and parking brake circuit with the locations as follows:

Two (2) TecNiq #E03-W000-1 LED surface mounted lights with #E03-0SH0-1 stainless steel horizontal case, one each side on the inside face of the beavertail to illuminate the rear hose bed access step area.

Two (2) TecNiq #E03-W000-1 LED surface mounted lights with #E03-0SH0-1 stainless steel horizontal case at the front of the body, one on the curb side and one on the road side to illuminate the running boards and side pump panel areas.

One (1) Hosebed Lights, Wall-Mounted, Amdor H2O  
65-05-1805

### **HOSEBED LIGHTS – WALL MOUNTED**

Two (2) 20" Amdor H2O LED strip lights shall be mounted in the front of the hosebed to illuminate the hosebed area. The lights shall be activated with the step light circuit.

Two (2) Scenelight, Whelen, 600 Series Super LED  
65-25-5400

### **OPTI-SCENELIGHT SERIES 600 SUPER LED**

Two (2) scenelights shall be provided in the location specified and shall be switched in the cab. The lights shall be Whelen 600 Series Super LED, gradient Opti-Scenelights™ with chrome flange.

#### SHOP NOTES

Locate one each side upper rear.

Four (4) Scenelight, Whelen, 600 Series Super LED

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65-25-5400

**OPTI-SCENELIGHT SERIES 600 SUPER LED**

Four (4) scenelights shall be provided in the location specified and shall be switched in the cab. The lights shall be Whelen 600 Series Super LED, gradient Opti-Scenelights™ with chrome flange.

SHOP NOTES

One toward front and one toward rear each side upper.

S One (1) Ground Lights, LED, TecNiq #T44 (Pumper - MID) 65-40-1004

**GROUND LIGHTS, LED**

TecNiq model #T44-WD0B-1, 4" round LED ground lights with model #T40-0G00-1 rubber grommet will be installed under each stepping surface. Lights will be mounted under each pump panel running board and rear step. The lights shall be activated through the marker light and parking brake circuit.

NOTES

S=T44 per Josh R

S One (1) Ground Lights, LED, Commercial 2-Door Chassis, TecNiq #T44 65-40-4044

**GROUND LIGHTS, LED**

TecNiq model #T44-WD0B-1, 4" round LED ground lights with model #T40-0G00-1 rubber grommet will be installed under each cab entrance door and activated when the doors are opened.

NOTES

S=T44 per Josh R

S Three (3) Ground Light, Additional, LED, TecNiq #T44 (ea) 65-40-5004

**ADDITIONAL LED GROUND LIGHTS**

Three (3) additional TecNiq model #T44-WD0B-1, 4" round LED ground light(s) with model #T40-0G00-1 rubber grommet will be provided under the vehicle in the area specified. The light(s) shall be switched together with the other ground lights.

SHOP NOTES

One each front side of body and second light at rear (2) opposite sides of rear bumper

NOTES

S=T44 per Josh R

One (1) Back up Alarm (STD)  
68-40-1000

**BACK UP ALARM**

An electronic back up alarm shall be hooked up to the vehicle back up circuit. The alarm shall have a 97

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DB rating.

One (1) Siren, Whelen 295SLSA1, Hands Free, 100 or 200 watt.  
70-20-1510

### **SIREN**

A Whelen #295SLSA1 "Hands Free" siren complete with a hard-wired microphone shall be provided. The siren will be wired so that the horn button will activate the siren when it is in the "on" position. The siren shall be installed so it is convenient for both the driver and officer.

One (1) Speaker, One, Cast Products, Recessed in Bumper  
70-50-5450

### **SIREN SPEAKER**

One (1) Cast Products #SA4301-1 polished aluminum 100 watt speaker shall be recessed through the bumper and wired to the siren.

### SHOP NOTES

Curbside

One (1) Light Bar, LED, Whelen Freedom F4N2VLED, 55"  
73-30-5030

### **LIGHTBAR**

The lightbar shall be a Whelen Edge® Ultra Freedom IV™ Linear Super-LED® LC Series, Model F4N2VLED, 55" long. The F4N2VLED lightbar shall incorporate an anodized extruded heavy duty aluminum base and cover chassis with two front and rear red corner modules, two interior white modules, and two interior red modules. The front and rear of each corner module shall consist of 12 red Linear Super-LEDs. The long red interior Linear Super-LED lights shall incorporate 12 red Super-LED. The long white interior Linear Super-LED lights shall incorporate 12 white Super-LEDs. All modules shall utilize a Diamond Optix™ metalized reflector and two optic collimators. All electronic components shall be conformal coated to provide additional protection. The Lightbar shall be mounted on cab roof.

One (1) Traffic Advisor, LED, Whelen TAL65 73-  
50-6100

### **TRAFFIC ADVISOR**

A Whelen model #TAL65 LED Traffic Advisor shall be provided in the area specified. The light shall be 36" long and shall include six (6) individual LED amber lamps. The controls for the unit shall be installed in the chassis cab.

One (1) Beacon, Whelen L31HRFN LED (PAIR)  
75-17-1600

### **BEACON WHELEN SUPER LED**

There shall be Two Whelen NFPA zone C approved model L31HRFN Red LED beacon(s) mounted on the vehicle. The lights shall be switched in the cab.

Two (2) LED, SUPER, Whelen, Series 600, Red With Clear Lens

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75-70-5010

**SUPER LED, SERIES 600, RED**

Two (2) Whelen series 600 Super LED red lights with clear lens and chrome flange will be provided and mounted as follows.

SHOP NOTES

Chassis grille

Four (4) LED, SUPER, Whelen, Series 600, Red With Clear Lens  
75-70-5010

**SUPER LED, SERIES 600, RED**

Four (4) Whelen series 600 Super LED red lights with clear lens and chrome flange will be provided and mounted as follows.

SHOP NOTES

Lower side and lower rear zone warning

Two (2) LED SUPER, Whelen, Series 500 TIR6, Red  
75-70-6010

**SUPER LED, SERIES 500, RED**

Two (2) Whelen model #50R03ZRR red TIR6 Super LED lights with chrome flange shall be provided and mounted as follows:

SHOP NOTES

Locate one each side of hood.

One (1) Ladder Compartment, Built Into High Side  
95-10-2000

**LADDER STORAGE**

The ladders shall be located in the upper section of the high side compartment between the body side and water tank. A painted aluminum vertically hinged door to provide access to the ladders shall be located at the rear of the body. The compartment shall be designed so that each ladder can be removed without disturbing the other ladders. The ladders shall rest on Teflon slides to prevent wear and tear on the ladder rails.

One (1) Ladder 10ft Folding 585a  
95-20-2600

**DUO-SAFETY 10' FOLDING LADDER**

One (1) 10 ft. Duo-Safety #585A aluminum folding ladder(s) shall be provided.

One (1) Ladder 775a, 14' Roof, Duo Safety  
95-20-3300

**DUO-SAFETY 14' ROOF LADDER**



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One (1) 14 ft. Duo-Safety #775A aluminum roof ladder(s) with folding hooks shall be provided.

One (1) Ladder 900a, 24' 2 Sec Exten Duo Safety  
95-20-4000

### **DUO-SAFETY 24' TWO-SECTION EXTENSION LADDER**

One (1) 24 ft. Duo-Safety #900A aluminum two-section extension ladder(s), with ladder locks and rope hoist shall be provided.

One (1) Suction Hose Brackets, Stainless, 1 Left & 1 Right  
95-30-1700

### **SUCTION HOSE BRACKETS**

Suction hose brackets shall be furnished one (1) each side of the truck. They shall be polished stainless steel troughs supported by cast aluminum brackets. Two (2) double loop Velcro straps shall hold each hose in place.

One (1) Miscellaneous Equipment (STD)  
97-00-1000 10

### **MISCELLANEOUS EQUIPMENT**

The following equipment items listed shall be furnished by the body builder with the apparatus. All equipment shall be shipped loose unless otherwise specified.

Three (3) Pike Pole Mounting Bracket, Aluminum Tube  
97-20-9600

### **PIKE POLE BRACKETS**

SHOP NOTES  
Three (3) aluminum tube(s) shall be provided for mounting of the pike poles.  
located in ladder compartment (12')

One (1) Manufacturer Nameplates and Identification  
97-96-0500

### **MANUFACTURER NAMEPLATE & IDENTIFICATION**

Custom Manufacturer nameplates shall be provided in the following locations:

- 0• One (1) Front grille of the chassis (if applicable).
- 0• One (1) Each side in the body rear wheel well area.
- 0• One (1) In the rear on the right hand (curb) side of the body above the tail lights.

One (1) Miscellaneous Fasteners (STD)  
97-99-5000

### **MISCELLANEOUS FASTENERS**

A bag of miscellaneous fasteners that was used on the construction of the apparatus will be provided with the completed unit.

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One (1) ECK (STD)  
97-99-5050

### **CORROSION PROTECTION**

A bottle of ECK corrosion prevention chemical shall be supplied loose with final delivery of the apparatus to ensure the customer will be able to place this on any screws inserted or removed from the body in the future.

One (1) NFPA Requirement (STD)  
97-99-8000

### **NFPA REQUIRED ITEMS**

It shall be the purchaser's responsibility to provide all equipment items required by NFPA 1901 that are not otherwise addressed in these specifications. These items shall be installed on the apparatus prior to it being put into active service.

One (1) Website Updates  
98-30-0020

### **WEBSITE UPDATES**

Production photos of the apparatus being built will be provided by the body builder. The photos will be taken every two - three weeks as production allows and posted to a private website designed only for the Fire Department to view. These photos will allow the Department to view the manufacturing process of the truck and possibly detect things that they may want changed earlier in the production process.