

# MILLBROOK NY HEAVY RESCUE

## Final Inspection Trip

Y\_\_N\_\_

A final Inspection trip for Four members of the Millbrook Fd shall be included. trip includes common air fare from Albany International Airport to the Manufactures facility.  
Trip includes meals, hotel and ground transportation.

## Training One Day

Y\_\_N\_\_

As directed by the fire Chief at the departments convience a one day training session will be held at the fire department headquarters to cover operations of pump and Apparatus.

Y\_\_N\_\_

## PRE-CONSTRUCTION MEETING

A pre-construction meeting shall be held at the Purchaser's location prior to any construction processes at the Bidders manufacturing facility. Authorized representatives of both the Purchaser and the Manufacturer shall be present (a dealer of the Manufacturer is not acceptable) The Manufacturer shall supply complete apparatus drawings and specifications at the meeting for review and Purchaser approval.

Y\_\_N\_\_

## 17' RESCUE VEHICLE

Y\_\_N\_\_

## 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, and the location of all emergency warning and work lights that are to be provided by the body builder.

Y\_\_N\_\_

## THIRD PARTY TESTING

The complete apparatus shall be third party tested to meet or exceed all N.F.P.A. Pamphlet No. 1901 (latest edition) specifications and standards.

Y\_\_N\_\_

## MODIFICATIONS TO CHASSIS

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

### FRONT BUMPER APRON

Y\_\_N\_\_

The front bumper apron shall be supplied with the chassis.

### FRONT BUMPER APRON

Y\_\_N\_\_

The chassis shall be modified to include a front bumper apron which shall be installed between the

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bumper and the front face of the cab.

The apron shall consist of NFPA compliant .188" bright aluminum treadplate for the top and if required .13" aluminum treadplate for the sides.

## **HOSE WELL IN FRONT BUMPER EXTENSION**

Y\_\_N\_\_

A hose well shall be provided in the chassis furnished front platform extension to the curbside. The hose well shall be as large as practical with storage for a minimum of \_\_\_' of \_\_\_" soft suction hose and screwed directly into the platform extension. Welding the hose well box to the bumper extension is not acceptable due to the fact that it cannot be easily replaced if damaged. The floor of the well shall also be fitted with black Mate Flex grating and a drain hole in each bottom corner. The inside of the box shall have an unpainted buffed aluminum finish.

Y\_\_N\_\_

## **TOOL WELL IN FRONT BUMPER EXTENSION**

A tool well shall be provided in the chassis furnished front platform extension center between the frame rails. The well shall be as large as practical and screwed directly into the platform extension. Welding the well box to the bumper extension is not acceptable due to the fact that it cannot be easily replaced if damaged. The floor of the well shall also be fitted with black Mate Flex grating and a drain hole in each bottom corner. The inside of the box shall have an unpainted buffed aluminum finish.

Location for Two Battery Powered AMKUS tools

## **TOOL WELL IN FRONT BUMPER EXTENSION**

Y\_\_N\_\_

A tool well shall be provided in the chassis furnished front platform extension to the roadside of the frame rails. The well shall be as large as practical and screwed directly into the platform extension. Welding the well box to the bumper extension is not acceptable due to the fact that it cannot be easily replaced if damaged. The floor of the well shall also be fitted with black Mate Flex grating and a drain hole in each bottom corner. The inside of the box shall have an unpainted buffed aluminum finish.

Y\_\_N\_\_

## **HOSEWELL STRAPS**

Two (2) double loop Velcro straps shall be provided to secure the hose in place.

Webbing to hold 1/3/4 hose

## **Tool Well Cover Center and Roadside With light**

Y\_\_N\_\_

One 3/4 cover s shall be provided to cover the front platform extension centered between frame rails and roadside tool well. It shall be equipped with a hinged lift up overlapping door of .125" aluminum treadplate. The door shall have a chrome plated lift and turn latch and held open with a gas prop.

The chain box shall be screwed into the platform extension and positioned 1" higher than the top decking to prevent water from running into the box. Welding the chain box to the bumper extension is not acceptable due to the fact that it cannot be easily replaced if damaged. The floor of the chain box shall also be fitted with black Mate Flex grating and 4 drain holes. The inside of the box shall have an

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unpainted buffed aluminum finish.

The department Shall hold two Amkus Hydraulic Battery tools on the top of the platform extension.

Center covers to hold two Amkus Battery powered Rescue tools

Cover Will have strip light

Y\_\_N\_\_

## **FUEL FILL**

The chassis furnished fuel tank shall be located aft of the rear axle. The body builder shall install the fuel fill on the road side behind the rear axle. The fuel fill shall hook up with flexible fuel hose and shall have a recessed filler with a brushed finish hinged door. A nametag shall be provided as to the type of fuel the vehicle shall use.

When possible a rear access panel will be provided in rear compartment wall to gain access to the fuel tank sending unit.

Y\_\_N\_\_

## **MANUAL AIR TANK DRAINS**

The chassis supplied air tank cables shall be run under the body to the side of the apparatus.

Y\_\_N\_\_

## **CAB TILT INSTALLATION**

Installation shall be provided for the cab tilt receptacle that is shipped loose with the chassis. The receptacle shall be located in the front curbside compartment.

Y\_\_N\_\_

## **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.

Y\_\_N\_\_

## **HELMET LABEL**

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

Y\_\_N\_\_

## **CHASSIS EXHAUST**

The chassis exhaust shall be extended just past the body side. 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.

Y\_\_N\_\_

## **REAR TOW EYES**

Two (2) heavy duty eyes, .75" x 4" with a 2.375" elongated hole, shall be furnished at the rear of the body under the step and shall be bolted to the truck frame rails. The subframe shall be adequately reinforced to allow the vehicle to be towed (not lifted) from the rear tow eyes.

Y\_\_N\_\_

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## **POWDER COAT TOW EYES - BLACK**

Tow eyes will be powder coated black.

Y\_\_N\_\_

## **GALVANIZED DROP FRAME**

The drop frame shall be galvanized to provide a long lasting durable finish.

Y\_\_N\_\_

## **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.

Y\_\_N\_\_

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

\* = When applicable.

Y\_\_N\_\_

## **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.

Y\_\_N\_\_

## **FRONT MUDFLAPS**

A black rubber mudflap shall be installed behind the front wheels, one (1) each side.

Y\_\_N\_\_

## **CHROME NUT & HUB COVERS, INSTALL CHASSIS FURNISHED**

The chassis furnished chrome hub and nut covers shall be installed on the chassis wheels.

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## CABINET WITH OPEN STORAGE - MESH DOOR

Y\_\_N\_\_

One (1) .125" bright aluminum treadplate cabinet(s) will be provided. Door will be a black open mesh nylon design, 1" web with 2" squares. The mesh door will be fastened on with velcro around the entire perimeter. The top of the cabinet (if not full height) will have a 1.5" lip to retain equipment.

Location is between Rear Facing seats

## ADJUSTABLE SHELVES, INTERIOR CABINETS

Y\_\_N\_\_

One (1) adjustable shelves will be fabricated from .188" high strength 5052-H32 aluminum. The shelves are to have a bend both front and rear with one bend in the opposite direction so that the shelf is reversible to provide either a lip to retain equipment or a smooth sweep-out front.

For ease of adjustment and as additional shelving reinforcement, the shelves shall not be bolted directly to the standards but shall be supported by an angled gusset that in turn is fastened to the standards.

Heavy duty adjustable shelving standards will be furnished, one each side of cabinet. These standards are to be the infinitely adjustable type of 6061-T6 extruded aluminum.

## PAC TRAC TOOL BOARD

Y\_\_N\_\_

A Pak Trac aluminum tool board shall be provided and installed on the interior rear wall of the cab. The tool board shall be designed so that it shall not interfere with any cab seats that may be located on the rear wall.

## AMDOR COMPARTMENT LED STRIP LIGHT

Y\_\_N\_\_

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

Under Cover for TOOL well center front bumper

## 12-VOLT POWER LEAD

Y\_\_N\_\_

There shall be a 12 gauge 20 amp power lead and 12 gauge ground wire on the vehicle, terminating in the location specified. This power lead wire will be hooked direct to the battery, bypassing the battery switch.

## 12-VOLT POWER LEAD

Y\_\_N\_\_

There shall be a 12 gauge 20 amp power lead and 12 gauge ground wire on the vehicle, terminating in the location specified. This power lead wire shall be hooked through the battery switch allowing power to be cut off when switch is turned off.

## OUTLET, INTERIOR

Y\_\_N\_\_

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One (1) 120-volt AC power strips shall be furnished and located as directed by the purchaser. The power strip(s) shall be surface mounted and labeled with a permanent nameplate listing the voltage, type of current, phase and amp rating.

Y\_\_N\_\_

## **AUTOMATIC TIRE CHAINS**

An On Spot on-demand tire chain system shall be provided for the rear wheels. Switch shall be conveniently located in the cab for activation by the driver.

Y\_\_N\_\_

## **TIRE CHAIN INSTALLATION**

The chassis furnished tire chain installation shall be completed after the body is loaded.

Y\_\_N\_\_

## **HELMET HOLDERS**

The department shall provide and install near each seat position helmet holders or store their helmets in an enclosed cabinet to meet compliance to the 2009 edition of NFPA 1901 for use inside of crew cabs. The holders shall secure traditional and contemporary style helmets without any adjustment being required.

Y\_\_N\_\_

## **PTO DRIVEN PUMP**

The apparatus shall be equipped with a Waterous CPK-2 series, PTO driven fire pump. The pump shall be of a size and design to mount on the chassis rails of the chassis and have an NFPA rated performance capacity of 300 U.S. gallons per minute.

The pump shall deliver the percentage of rated capacity at the pressures listed below.

100% rated capacity at 150 PSI net pump pressure  
70% of rated capacity at 200 PSI net pump pressure  
50% of rated capacity at 250 PSI net pump pressure

The entire pump shall be of high tensile, nickel bearing gray iron, manufactured and tested in the pump manufacturer's factory.

The wear rings shall be bronze, replaceable, to restore pump performance and keep maintenance costs at a minimum. Pump impeller shall be of bronze, double hubbed, hydraulically and mechanically balanced.

The impeller shaft shall be stainless steel, heat treated and ground to precise dimensions. It shall be supported by oil lubricated ball bearings.

The packing shall be a mechanical seal. Oil splash lubricated ball bearings shall be furnished in the pump. The pump gears shall be helical, precision cut.

## **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

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operating conditions. The drive unit shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature without supplemental cooling.

## **DRIVELINE**

The pump shall be a "hot-shift" power take-off (PTO) with a torque rating of sufficient size for the intended load.

Power take-off engagement control shall be located in the cab and identified by a nameplate.

The driveshaft between the pump and the PTO shall be a tubular type, minimum O.D. of 2 1/2" with a minimum wall thickness of .083. It shall have a Spicer #1280U-joint and be dynamically balanced to ensure vibration free performance.

The driveshaft shall have a slip yoke with a minimum travel of 2" so that it can be removed.

The tube shall be D.O.M. (drawn over mandrel) made for driveshafts.

They shall be electrically MIG welded by a certified welder on a specially designed driveshaft fabrication machine. After welding. The driveshaft shall be checked for straightness and dynamically balanced by computerized machinery.

## **FIRE PUMP PRIMING SYSTEM**

A Waterous VENTURIS AIR PRIMER shall be provided and installed on the apparatus with the following specifications.

A. The VENTURIS Air Priming system shall include the VENTURIS air primer, primer control and VAP (Vacuum Activate Priming Valve) and associated cabling.

1. The VENTURIS Air Primer shall be mounted directly on a Waterous split-shaft pump transmission or separately mounted.
2. The VENTURIS Air Primer shall have brass body construction and a single barrel design. 3. The VENTURIS Air Primer shall meet NFPA 1901 requirements for Vacuum and Standards.

Priming

4. The VENTURIS Air Primer shall be mounted to the pump transmission with non-corrosive hardware (when specified). For remote mounting locations, primer shall be shipped loose. 5. The VENTURIS Air Primer shall create a vacuum utilizing the on-board compressed air system.
6. The VENTURIS Air Primer shall use 1/2" OD tubing and air supply shall connect to the 3/8" NPT VENTURIS air inlet. 7. The VENTURIS Air Primer shall be operated by a 12-volt, manual, momentary push-button control

## **PUMP PIPING & VALVES**

All discharge valves shall be Akron 8900 series valves. All valves, 3" or larger, when specified, except for the tank to pump line, shall be provided 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.

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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 excepted (NO EXCEPTIONS).**

## **DISCHARGE MANIFOLD**

The discharge manifold shall be constructed with stainless steel and properly sized to fit the end user's requirements. The manifold shall be fixture built and attached to the pump system with bolt flanges or victaulic coupling.

## **VALVE CONTROLS**

Unless otherwise stated in these specifications, the suction and discharge valves shall be operated by twist-lock remote controls. Valve control handles shall be chrome plated T-handles with recess for the color-coded function label. The drains at the pump panel shall be 3/4" and be the "lift-lever" type.

## **MASTER DRAIN VALVE ASSEMBLY**

The master pump drain assembly shall consist of a bronze master drain with a rubber disc and handwheel controlled. The master drain shall provide independent ports for low point drainage of the fire pump and auxiliary devices.

## **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, air actuated, 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.

## **TANK FILL**

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

## **PUMP PANEL AREA**

The fire pump enclosure shall be a weldment of aluminum tubing and angle, located within the enclosed rescue body.

Labels shall be furnished for the discharge and intakes and, where required, for the controls and indicators.

Discharge labels will be color coded, per NFPA, or as directed.

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## **PRESSURE GOVERNOR and ENGINE MONITORING DISPLAY**

Fire Research PumpBoss Max series PBA500-A10 pressure governor and control module kit shall be installed. The kit shall include a control module, discharge pressure sensor, and cables. The control module housing shall be waterproof and have dimensions not to exceed 7 1/2" high by 3 5/8" wide. The control knob shall be 2" in diameter with no mechanical stops, have a serrated grip, and a red idle push button in the center. It shall not extend more than 2" from the front of the control module. The control LCD shall be 3.5" in size with a minimum brightness of 1000 nits and optically bonded to 3mm Borofloat Glass. Inputs for monitored engine information shall be from a J1939 data bus or independent sensors. Outputs for engine control shall be on the J1939 data bus or engine specific signal wiring. Inputs from the pump discharge pressure sensor shall be electrical.

The following continuous displays shall be provided:

- Engine RPM; shown on LCD screen
- Check engine and stop engine warning; shown on LCD screen
- Engine oil pressure; shown on LCD screen
- Engine coolant temperature; shown on LCD screen
- Transmission Temperature; shown on LCD screen
- Battery voltage; shown on LCD screen
- Pressure and RPM operating mode LEDs
- Pressure / RPM setting; shown on LCD screen
- Throttle ready / Ok to Pump LEDs.

On screen (LCD) message display shall show diagnostic and warning messages as they occur. It should show monitored apparatus information, stored data, and program options when selected by the operator. LCD Screen and LED's intensity shall be automatically adjusted for day and nighttime operation.

The program shall store the accumulated operating hours for the pump and engine to be displayed with the push of a button. It shall monitor inputs and support audible and visual warning alarms for the following conditions:

- High Battery Voltage
- Low Battery Voltage (Engine Off)
- Low Battery Voltage (Engine Running)
- High Transmission Temperature
- Low Engine Oil Pressure
- High Engine Coolant Temperature
- Out of Water (visual alarm only)
- No Engine Response (visual alarm only).

The program features shall be accessed via push buttons located on the front of the control module. There shall be a USB port located at the rear of the control module to upload future firmware enhancements.

The pressure governor shall operate in two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between modes. A throttle ready and Ok to Pump LED shall light when the interlock signal is recognized. The pressure governor shall start in pressure mode and set the engine RPM to idle. In pressure mode the pressure governor shall automatically regulate the discharge pressure at the level set by the operator. In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The pressure governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi. Other safety features shall include recognition of low water and no water conditions with an automatic programmed response and a push button to return the engine to idle.

## **WATER LEVEL INDICATOR**

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

## **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.

## **DISCHARGE GAUGE**

One (1) 2.5" white faced individual pressure gauge, liquid filled, 0-400 PSI for each discharge.

## **MAIN SUCTION INLET**

One (1) 2 1/2" NST gated suction inlet shall be provided at the roadside pump panel. Valve shall be the 1/4 turn ball type with control at the valve (swing controls). The valve shall be located behind the pump panel.

The inlet shall be equipped with a chrome plated swivel, removable cleanable strainer, male plug and retainer chain. An individual 3/4" bleeder drain with a push-pull control handle shall be furnished. The drain shall be piped towards the ground.

## **2-1/2" MAIN DISCHARGE VALVE, ROADSIDE**

There shall be {qty} 2-1/2" discharge(s) provided at the roadside. The 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 30-degree elbow with a 2-1/2" cap.

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

## **1-1/2" FRONT PRECONNECT, ROADSIDE**

There shall be one (1) 1-1/2" pre-connect located at the front bumper roadside. The discharge valve shall be a 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. The piping will be 2" with the outlet equipped with a male chrome plated 1-1/2" NST 90-degree swivel elbow located on top of the bumper extension.

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

Pump shall be mounted directly behind the R1 compartment. All pump controls shall be located in the lower portion of the R1 compartment.

## **RELIEF VALVE ALARM**

Y\_\_N\_\_

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An alarm shall be provided for the Waterous model OPM Overheat Protection Manager thermal relief valve.

Y\_\_N\_\_

## **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.

Y\_\_N\_\_

## **ACCEPTANCE PLATE**

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

Y\_\_N\_\_

## **BOOSTER TANK**

The tank shall have a capacity of 300 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.

Tank to be as large as 500 Gallon Min 300 gallon

Y\_\_N\_\_

## **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.

Y\_\_N\_\_

## **BOOSTER TANK WARRANTY**

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

Y\_\_N\_\_

## **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.

Y\_\_N\_\_

## **BODY SPECIFICATIONS**

Y\_\_N\_\_

## **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.

Y\_\_N\_\_

## **CROSSMEMBERS**

3" x 2" x .25" wall thickness, 6061-T6 aluminum extruded rectangular tubing on 16" centers.

To eliminate corrosion, all crossmembers and structural tubing will have the ends capped and solidly

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welded shut on all sides to eliminate the possibility of dirt, water, and salt from entering (NO EXCEPTIONS).

Y\_\_N\_\_

## UPRIGHTS

Between exterior side compartments will have 3" X 2" X .125" wall thickness, 6061-T6 aluminum extruded rectangular tubing.

Y\_\_N\_\_

## ROOF RAFTERS

Roof rafters to be 2" x 2.25" x .125" wall thickness, 6063-T52 aluminum extruded rectangular tubing on 16" centers.

Y\_\_N\_\_

## 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.

Y\_\_N\_\_

## SKIN

Smooth .125" aluminum, bonded to uprights. Body sides to be one piece with no visible splice seams or rivets, for superior appearance and graphics.

Entire front body panel between the corner posts to be .125" bright aluminum treadplate. The treadplate front wall will prevent paint chips from stones or other debris which may be kicked up from the road.

Y\_\_N\_\_

## ROOF

Roof material to be .125" bright aluminum treadplate, seams and perimeter to be 100% welded. To insure a water tight non leaking roof, skip welding or caulking will not be acceptable.

Y\_\_N\_\_

## 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.

Y\_\_N\_\_

## FENDERS

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.

Y\_\_N\_\_

## FENDERETTES

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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.

Y\_\_N\_\_

## **FENDER PANELS**

The body panels above the wheel housing shall be smooth painted aluminum which has been flush fit and welded in place. Polished stainless steel scuff shields shall be furnished along the bottom door jamb of the compartments over the rear wheels to prevent chipping of paint.

Y\_\_N\_\_

## **SPRING SHACKLE CLEARANCE**

Since exterior side compartments are full depth, provisions in the compartments, fore and aft of the rear wheels shall be made for special enclosures around the chassis springs and spring hangers. These enclosures shall be large enough for accessibility into grease fittings and spring pins.

Y\_\_N\_\_

## **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.

Y\_\_N\_\_

## **COMPARTMENT VENTS**

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.

Y\_\_N\_\_

## **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.

Y\_\_N\_\_

## **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

# MILLBROOK NY HEAVY RESCUE

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.

Y\_\_N\_\_

## MATEFLEX GRATING

Black Mateflex grating shall be installed where specified. Where appropriate the grating shall have a beveled edge facing the front of the compartment to prevent snagging while loading equipment.

Y\_\_N\_\_

Y\_\_N\_\_

## 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)**

Y\_\_N\_\_

## ROLL-UP COMPARTMENT DOORS

The body side compartments will be equipped with R•O•M Series IV roll-up shutter doors that shall be constructed from anodized 6063 T6 aluminum.

Shutter slats will feature a double wall extrusion 0.315" thick with a concave interior surface and interlocking end shoe to prevent side to side binding of the shutter door during operation. Slats will have interlocking joints with an inverted locking flange. The slat inner seal shall be a one piece PVC extrusion designed to prevent metal to metal contact while minimizing dirt and water from entering the compartment.

Shutter door track shall be a one-piece design with integral overlapping flange to provide a clean finished look without the need of caulk. Door track shall feature an extruded Santoprene rubber double lip low profile side seal with a silicone co-extruded back to reduce friction during shutter operation.

Shutter bottom rail shall be a one-piece double wall extrusion with integrated finger pull with a linear striated surface to improve operator grip. Bottom rail shall have a smooth contoured interior surface and a double "V" seal made from Santoprene. Bottom rail lift bar shall be a one piece "D" shaped aluminum extrusion with linear striations and a wall thickness of 0.125". The bottom rail shall be supported by no less than two reinforced nylon pivot blocks. Bottom rail end blocks shall have incorporated drain holes which will allow any moisture that collects inside the extrusion to drain out.

The doors will include an additional slat on the bottom to allow for adequate lift bar clearance. 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.

Y\_\_N\_\_

## DOOR FINISH

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

Y\_\_N\_\_

# MILLBROOK NY HEAVY RESCUE

## DOOR FINISH

The body side compartment roll up doors shall be painted by the door manufacturer with a WET paint type coating. The Body Manufacturer shall supply the paint to ensure proper color match. The drip rail and outside tracks shall be painted to match the door slats.

Wet painted doors and tracks,

Y\_\_N\_\_

## BUMPER STEP

The rear bumper step shall be 12" deep and full width. The outside corners will be a 45 degree chamfer to avoid injuries. A space shall be maintained between the body and the step. The step shall be supported by formed angles welded directly to the body.

The step will be fabricated from .188" serrated bright aluminum treadplate.

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."

Rear Step Reduced to meet OAL 32FT

Y\_\_N\_\_

## SIDE RECEIVERS-WINCH

There shall be a Reese style hitch tube assembly mounted under the rubrail and behind the wheel on each side of the body for use with a portable winch. The tube assembly shall be fastened as part of the rear drop frame assembly. The receivers shall include a cap secured with a pin to protect the opening when the hitch isn't in use.

The hitch will be rated for 10,000 lbs and labeled as such.

Y\_\_N\_\_

## SIDE RECEIVERS-WINCH GALVANIZED

The Reese style hitch tube assembly mounted under the rubrail and behind the wheel on each side of the body shall be galvanized.

Y\_\_N\_\_

## LADDER - SWING OUT AND DOWN

There shall be a swing out and down ladder at the rear of the apparatus. The ladder shall have a black powder coat finish. The ladder shall store flat against the body when not in use. The ladder shall pull out to a locked comfortable climbing angle when use is desired also allowing a fold down section to start the ladder climb from the ground. The rungs of the ladder shall meet NFPA slip resistance surface requirements and the hand rails shall be knurled. The ladder shall be wired to the door ajar warning light circuit.

Locate on the curbside.

# MILLBROOK NY HEAVY RESCUE

## 12" ACCESS RAIL

Y\_\_N\_\_

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

One (1) 12" access rail(s) shall be mounted in the location(s) specified.

Y\_\_N\_\_

## 12" ACCESS RAIL

A 12" access rail of 1.25" diameter extruded aluminum tubing in chrome plated stanchions shall be located in the transition from the access ladder into the rooftop walkway. The rail shall be mounted on an angle.

Y\_\_N\_\_

## 24" ACCESS RAIL

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

Two (2) 24" access rail(s) shall be mounted in the location(s) specified.

Y\_\_N\_\_

## 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. When the chassis is two-tone, the body shall be painted the lower/primary color unless specified otherwise.

Y\_\_N\_\_

## PAINT UPPER BODY 2ND COLOR, ABOVE DOORS

The body shall be painted from top of body to a line starting at top of the compartment doors.

# MILLBROOK NY HEAVY RESCUE

## CAB PAINT

Y\_\_N\_\_

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.

## COMPARTMENT FINISH

Y\_\_N\_\_

To reduce marring and scuffing, the insides of the exterior compartments shall be painted with a durable white based spatter paint and a clear coat applied for additional protection.

## SHELF & TRAY FINISH

Y\_\_N\_\_

Any shelves, trays, etc. shall be an aluminum lightly oscillated finish to allow for easy equipment mounting.

## HOSEWELL FINISH

Y\_\_N\_\_

The hosewell shall be finished with a black LINE-X<sup>®</sup> protective coating.

## TOOL WELL FINISH

Y\_\_N\_\_

The tool well shall be finished with a black LINE-X<sup>®</sup> protective coating.

## TOOL WELL FINISH

Y\_\_N\_\_

The tool well shall be finished with a black LINE-X<sup>®</sup> protective coating.

## UNDERCOATING

Y\_\_N\_\_

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.

## REFLECTIVE MATERIAL

Y\_\_N\_\_

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

## REFLECTIVE MATERIAL

Y\_\_N\_\_

A 3M diamond grade reflective tape shall be applied to the front face and sides of any roll-out/pull-out tray, shelf, or toolboard. The reflective tape shall be in a striped pattern and alternate between red and white. The tape shall be laminated and the edge sealed. The stripe shall be placed to divert traffic to the back or away from the vehicle.

## ENCAPSULATED GOLD LEAF LETTERING

Y\_\_N\_\_

# MILLBROOK NY HEAVY RESCUE

Laminated encapsulated gold leaf lettering shall be furnished on the apparatus. The lettering shall be gold leaf (E-Z gold) and have a burnished (engine turned) finish. The letters shall be encapsulated to protect them from the elements. Letters shall be outlined and drop shaded in black. Up to sixty (60) 3" high letters shall be provided. Lettering layout shall be as follows:

MILLBROOK (ARCHED)  
FIRE DEPARTMENT

Y\_\_N\_\_

## ENCAPSULATED GOLD LEAF LETTERING

Twenty-Four (24) 1"-3" high laminated encapsulated gold leaf letters shall be furnished on the apparatus. The lettering shall be gold leaf (E-Z gold) and have a burnished (engine turned) finish. The letters shall be encapsulated to protect them from the elements. Letters shall be outlined and drop shaded in black. Lettering layout shall be as follows:

Millbrook fire department on upper rear body

Y\_\_N\_\_

## ENCAPSULATED GOLD LEAF LETTERING

One (1) 4"-6" high laminated encapsulated gold leaf letters shall be furnished on the apparatus. The lettering shall be gold leaf (E-Z gold) and have a burnished (engine turned) finish. The letters shall be encapsulated to protect them from the elements. Letters shall be outlined and drop shaded in black. Lettering layout shall be as follows:

DIAL 911

Y\_\_N\_\_

## SCOTCHLITE LETTERING

Twelve (12) 4"-6" high Scotchlite letters will be furnished on vehicle. Lettering layout shall be as follows:

Rear Door

Y\_\_N\_\_

## SCOTCHLITE LETTERING

Twenty (20) 10"-15" high Scotchlite letters will be furnished on vehicle. Lettering layout shall be as follows:

FIRE RESCUE

Upper body sides

Y\_\_N\_\_

The Scotchlite lettering will be outlined and drop shaded.

Y\_\_N\_\_

The Scotchlite lettering will be outlined and drop shaded.

# MILLBROOK NY HEAVY RESCUE

## 911 Mural Custom

Y\_\_N\_\_

A pair of 911 custom murals will be provided on the apparatus. A budget for the custom artwork is included.

911 Mural custom customer design. Copy existing

## DECALS

Y\_\_N\_\_

A pair of department patch decals shall be applied on the vehicle where specified. The patch decals shall be Scotchlite vinyl and shall be approximately 12" x 15". The Fire Department shall send photos for the artist to match.

## REFLECTIVE STRIPING

Y\_\_N\_\_

A 1-4-1 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.

## REFLECTIVE STRIPING CHEVRON

Y\_\_N\_\_

A two color 6" Scotchlite diamond grade reflective Chevron shall be applied to the inside of each cab door in the lower portion below the floor level only. The Chevron stripe shall alternate between lime green with red stripes with overlamine.

## REFLECTIVE STRIPING CHEVRON

Y\_\_N\_\_

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.

## ENCAPSULATED GOLD LEAF STRIPING

Y\_\_N\_\_

There shall be laminated encapsulated genuine gold leaf striping furnished on the apparatus . The leaf shall be genuine 23 carat gold leaf and have a burnished (engine turned) texture. The stripe will be encapsulated so as to protect them from the elements. The stripe shall be 3/8" wide and have a 1/16" black border on each side making the total stripe width 1/2".

A 1/8" wide highlight stripe shall be located just above the gold leaf stripe. The highlight stripe shall be a color to accent with the color of the body paint.

Striping shall be applied as directed by the purchaser.

Roll Doors

# MILLBROOK NY HEAVY RESCUE

## ENCAPSULATED GOLD LEAF STRIPING

Y\_\_N\_\_

There shall be laminated encapsulated genuine gold leaf striping furnished on the apparatus. The leaf shall be genuine 23 carat gold leaf and have a burnished (engine turned) texture. The stripe will be encapsulated so as to protect them from the elements. The stripe shall be 3/8" wide and have a 1/16" black border on each side making the total stripe width 1/2".

Striping shall be applied as directed by the purchaser.

Roll Doors

## ENCAPSULATED GOLD LEAF CORNER SCROLLS

Y\_\_N\_\_

Laminated encapsulated genuine gold leaf corner scrolls will be furnished. The leaf shall be genuine 23 carat gold leaf and have a burnished (engine turned) finish. The scrolls will be encapsulated so as to protect them from the elements. The corner scrolls will be of the design specified by purchaser.

Roll Doors

## DESIGNATED STANDING and WALKING SURFACE YELLOW LINE STANDARD

Y\_\_N\_\_

A YELLOW colored line (or an ORANGE colored line should apparatus primary color be yellow), shall be provided for all designated Standing and/or Walking surface edges above 48 inches (4 feet) in height. The designated line is not required where physical features of at least 12 inches high guard the edge, making it apparent where the horizontal (Standing / Walking), surface ends. The CENTER of the YELLOW or ORANGE line to be approximately 3 inches from the edge of the drop-off.

## OVERALL LENGTH REQUIREMENT

Y\_\_N\_\_

The overall length of the body should not exceed \_\_32ft\_\_".

## OVERALL HEIGHT REQUIREMENT

Y\_\_N\_\_

The overall height of the body should not exceed \_9ft11\_\_".

## OVERALL WIDTH

Y\_\_N\_\_

Overall Width = 100" + rubrails.

## ROOF NOTCHED WALKWAY

Y\_\_N\_\_

The center section of the roof area will be recessed to provide a walkway area. The walkway will be constructed of serrated bright aluminum treadplate and reinforced every 16" with the roof rafters. The walkway treadplate will be bent up 90 degrees on both sides to eliminate seams and to provide a water

# MILLBROOK NY HEAVY RESCUE

tight seal. Two (2) drain holes will be provided in the front corners of the walkway and will be routed to drain below the body.

Y\_\_N\_\_

## CURBSIDE REAR EGRESS

An egress shall be provided at the rear of the body on the curbside to allow access to the top of the apparatus. The egress shall be located at the top and in front of the rear access ladder and shall be approximately 18" x 18" in size.

Y\_\_N\_\_

## ROOF STORAGE COMPARTMENTS

There will be four (4) compartment(s) located and accessed from the roof of the body. The approximate sizes of these compartments will be as outlined below.

The outside wall of the hatch compartments shall be of the double wall design to prevent equipment from denting the outside painted surface. The interior of the compartment will be left a natural oscillated finish.

The door(s) will be fabricated from .13" bright aluminum treadplate and shall be designed to be completely weather resistant. The door(s) shall be of the box pan configuration and shall be fully weather stripped. They shall be hinged on the outboard side with aluminum hinges, and shall have pressurized gas cylinders to assist opening and to keep the door in an open and closed position. A latch shall be provided to secure the door during travel.

Construction of the compartment shall be integral with the body side wall construction. Bolt on or additional style compartments shall not be acceptable. **NO EXCEPTIONS.**

LED strip light(s) shall be mounted on the back wall of the compartment as high as practical. The strip light(s) shall be positioned in such a way that it will allow illumination down into the compartment and automatically activated when the door is opened. The door will be wired to the "open door" indicator in the cab.

A drain shall be provided in each compartment floor and routed through a tube that will discharge any water below the body.

Y\_\_N\_\_

## EXTERIOR COMPARTMENT SIZES

Road Side, front to rear. (Nominal door opening sizes)

1. 63" high x 43" wide x 27" deep-lower, transverse-upper. Roll-up door.
2. 63" high x 43" wide x 27" deep-lower, transverse-upper. Roll-up door.
3. 30" high x 57" wide x 27" deep. Roll-up door.
4. 63" high x 43" wide x 27" deep. Roll-up door.

Curb Side, front to rear. (Nominal door opening sizes)

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1. 63" high x 43" wide x 27" deep-lower, transverse-upper. Roll-up door.
2. 63" high x 43" wide x 27" deep-lower, transverse-upper. Roll-up door.
3. 30" high x 57" wide x 27" deep. Roll-up door.
4. 63" high x 43" wide x 27" deep. Roll-up door.

Rear Compartment (Nominal door opening size)

1. 63" high x 40" wide x 27" deep-lower, 108.50" deep-upper. Roll-up door.

Y\_\_N\_\_

## **ENCLOSED WHEEL WELL COMPARTMENT**

There shall be a fully enclosed compartment provided in the rear fender housing area and located as directed. The dimensions of the compartment shall be approximately 15.75" wide x 12.25" high x 25.5" deep with the area by the fenderette angled approximately 40 degrees. The compartment shall have a painted aluminum door with a spring-loaded latch.

Locate roadside and curbside forward.

Y\_\_N\_\_

## **FUEL FILL & STORAGE COMPARTMENT**

The fuel fill shall be located in a fully enclosed compartment provided in the rear fender housing area with the area by the fenderette angled approximately 40 degrees. The compartment shall include a storage area next to the fuel fill to accommodate either an SCBA bottle or fire extinguisher. The storage area shall have an aluminum tube welded in place for the SCBA or extinguisher. The tube shall have rubber stripping to protect the bottle from scuffing. The compartment shall have a painted aluminum door with a trigger latch. The door shall be wired to the open door light.

Y\_\_N\_\_

## **BOTTLE RACK FOR SCBA BOTTLES**

The SCBA bottle rack shall be mounted in the compartment specified and designed to hold ten (10) bottles. For superior strength over PVC, they shall be constructed using an aluminum egg shape design with a 1" downward slope to prevent the bottles from sliding out. An aluminum cradle overlaid with a rubber mat on the bottom and back wall shall be provided for each of the bottles.

C4 compartment forward vertical Qty 10

Y\_\_N\_\_

## **VERTICAL DIVIDER (30" MAX DEPTH)**

Two (2) fixed vertical divider(s) shall be fabricated from .13 smooth aluminum. The divider shall have a 1" lip on all edges for added strength.

R3 Upper next to breaker panel above pump

R4 for little giant

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## REMOVABLE DRAWER(S)

Y\_\_N\_\_

Six (6) pull out, removable drawer(s) shall be provided and fabricated from polypropylene. A hand hold cutout shall be provided in the front and back wall of the drawer so that it can be easily carried when removed.

## FIXED SHELVES (28" MAX DEPTH)

Y\_\_N\_\_

Four (4) fixed shelf(s) shall be provided and fabricated from .188" 5052-H32 aluminum. The shelf is to have a 1.5" lip on the front edge to retain equipment.

R2 /C2 At Frame

R1 At Frame

Rear compartment at Frame

## FIXED SHELVES (67" MAX DEPTH)

Y\_\_N\_\_

One (1) fixed shelf(s) shall be provided and fabricated from .188" 5052-H32 aluminum. The shelf is to have a 1.5" lip on the front edge to retain equipment.

Rear compartment Upper

## ADJUSTABLE SHELVES (28" MAX DEPTH)

Y\_\_N\_\_

Five (5) adjustable shelf(s) shall be provided and fabricated from .188" high strength 5052-H32 aluminum. The shelves are to have a double channel break both front and rear to form a reinforced channel. The rear channel is to be bent in the opposite direction of the front so that the shelf is reversible to provide either a lip to retain equipment or a smooth sweep-out front.

For ease of adjustment and as additional shelving reinforcement, the shelves shall not be bolted directly to the standards but shall be supported by angle shelf holders that in turn are fastened to the standards.

R1 Upper

R2 Lower under fixed shelf

R3 upper above tray

R4 upper above bottle rack

C3 Upper

## SHELVING STANDARDS FOR ADJUSTABLE SHELVES

Y\_\_N\_\_

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Five (5) 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.

Y\_\_N\_\_

## **ROLL-OUT TRAY, 1,000 LB CAPACITY, 25-36" EXTENSION**

Three (3) roll out tray(s) shall be provided in the compartments specified. The floor of the tray shall be fabricated of .188" smooth 5052 aluminum and will fit down into the slides, providing 1" high lips on all four sides. The slides will be Slidemaster 1,000 lb. capacity, model M2-AL all aluminum that extends 70% of the compartment depth. Track will allow the tray to lock in the open and closed position.

Rear Compartment floor

C2 Floor

C2 ON Fixed shelf

Y\_\_N\_\_

## **ROLL-OUT TRAY, 1,000 LB. CAPACITY**

Three (3) roll out tray(s) shall be provided in the compartments specified. Trays shall be fabricated of .188" smooth 5052 aluminum and have a 3" high lip on all four sides. The tray shall be mounted on Slidemaster 1000 lb. capacity, model SM3 slides that extend 100% of the compartment depth. Track will have a powder coating to prevent corrosion and a spring loaded lock to allow the drawer to lock in the open and closed position.

R2 Two Side by Side

Rear Compartment

Y\_\_N\_\_

## **ROLL OUT TRAY, 500 LB CAPACITY, 20" EXTENSION**

Three (3) roll out tray(s) shall be provided in the compartments specified. Trays shall be fabricated of .188" smooth 5052 aluminum and have a 3" high lip on two sides. The tray shall be mounted on support angles attached to Accuride ACC C501-20, 500 lb. capacity, side mount slides which have a 20" extension. A latch shall be provided to hold the tray in the closed position.

C4 Floor

C1 Floor

R3 Floor

Y\_\_N\_\_

## **TRANSVERSE RACK**

A .13" smooth aluminum rack will be mounted transversely in compartment for storing long objects.

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Rack will include four (4) slots and will be open on both ends which will allow access to item from either end of the vehicle. Each slot will have a rounded notch that is centered on the leading edge to allow ease of access to the stored object(s). A Velcro strap will be provided on each end to secure equipment. Compartment interior will be left an oscillated aluminum finish.

The below item shows the actual size of equipment and the body manufacturer will be responsible for adding the tolerances for a proper fit.

Will hold the following

1. Stokes basket
2. folding A Frame
3. struts
4. signs

Y\_\_N\_\_

## **ALUMINUM TOOL BOARDS W/ PEG BOARD HOLES- 300 LB CAP. ROLL OUT**

Four (4) specified tool board(s) shall be furnished. Each board shall be fabricated of .19" smooth aluminum with reinforcement bends, and a hand pull-out. Each board shall be mounted on a 300 lb. capacity Accuride 9301 ball bearing slides with 100% full extension. A gas prop will be provided to hold the board in the open and closed position.

Boards will be left a natural finish with a peg board design. The entire board will include 1/4" holes on 1" centers so as to provide easy mounting of tools.

R4 Two

C1 Two upper

Y\_\_N\_\_

## **ALUMINUM LINING**

One (1) compartment walls will be overlaid with an .13" aluminum.

One Sheet to mount Battery tools under the front cover over top of well recessions.

Y\_\_N\_\_

## **ALUMINUM LINING WITH HOLES**

Two (2) compartment walls will be overlaid with an .13" aluminum peg board design. The entire board will include 1/4" holes on 1" centers so as to provide easy mounting of tools. Spacers will be welded to the wall and the overlay will then be screwed to these spacers.

Mounted Horizontally with A frame gusset to the two trays in C2

Y\_\_N\_\_

## **WHEEL WELL OIL DRY HOPPER**

An oil dry hopper will be provided in the wheel well specified. The hopper will be designed with a

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deployment valve built in the wheel well panel to allow oil dry to exit underneath the vehicle. For convenience, the entire hopper assembly will pull out of the wheel well area for easy and safe refilling.

The compartment shall be wired to the open door warning light circuit.

Curbside wheel well rearward

Y\_\_N\_\_

## **COMPARTMENT MESH**

One (1) black open mesh nylon protector(s), 1" web with 2" squares will be provided over the areas specified. The mesh will be fastened on with velcro around the entire perimeter.

C3 For cribbing

Y\_\_N\_\_

## **REAR VIEW CAMERA**

The Camera provided by Spartan Motors shall be installed at the rear of the apparatus and hooked to the flip down monitor installed in the cab.

Y\_\_N\_\_

## **REAR VIEW CAMERA**

The Spartan provided rear view camera shall be integrated into the Spartan provided Weldon display module that is located in the cab.

Y\_\_N\_\_

## **HAAS ALERT SYSTEM**

HAAS Alert Model Number "HA-5" shall be provided and mounted inside the cab on the dashboard within 10 feet of the officer's seat and with a clear view of the sky.

The device shall be constructed of high strength, impact resistant, RoHS compliant ASA Plastic with IP63 ingress protection. A cellular modem shall be included that connects to commercially available cellular networks to transmit and receive data to/from the HAAS Alert Safety Cloud™. Information sent to the cloud shall include vehicle GPS location, speed, course, acceleration, and emergency lights status (e.g., "on" or "off"). The HAAS Alert Safety Cloud shall receive information every two (2) seconds while the vehicle is moving.

The device shall utilize the HAAS Alert Safety Cloud to send digital R2V (Responder-to-Vehicle) alerts to nearby civilian drivers via in-dash infotainment and IVI (In-vehicle Infotainment) units, Waze and other popular consumer navigation applications when the vehicle is enroute or on scene with the emergency lights engaged.

Dimensions – Length, Width, Height (Inches): 5.4" x 2.7" x 1.3"

Cellular Signal: 3G or 4G LTE

Input Voltage - Power: 12.5V to 15V

Input Voltage - Lights Indicator: 12V to 15V

Amperage: 120 mA peak draw

Operating Temperature Range: -40°C to 85°C

Weight (Ounces): 7 oz.

Y\_\_N\_\_

## **WIRING DIAGRAMS**

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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.

Y\_\_N\_\_

## **12 VOLT WIRING – MULTIPLEXING, V-MUX**

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 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, Vocational Module, input/output switch modules and Power Distribution Modules **(NO EXCEPTION)**.

Junction areas with a removable aluminum cover shall be located inside the front and rear side compartments for ease of service.

A wiring trough shall be built into the upper body roof rail and above the exterior compartment doors. Easily removable panels shall be furnished to gain access to these wiring troughs.

Y\_\_N\_\_

## **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.

Y\_\_N\_\_

## **LOW VOLTAGE ALARM - CHASSIS FURNISHED**

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.

Y\_\_N\_\_

## **RUNNING LIGHTS LED**

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

Clearance lights shall be LED type and located around the roof perimeter or recess mounted behind the rear step depending on the body design.

# MILLBROOK NY HEAVY RESCUE

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

Y\_\_N\_\_

## **MARKER/DIRECTIONAL LIGHTS**

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

Y\_\_N\_\_

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

One (1) rectangular Whelen M6 series Linear Super LED amber arrow light with clear lens each side of body for turn signals.

Y\_\_N\_\_

One (1) rectangular Whelen M6 series Linear Super LED red light with clear lens each side of body for stop and tail.

## **BACKUP LIGHTS**

One (1) Whelen M6 series maximum intensity LED light with chrome flange shall be provided on each side of body for the backup light, wired to the reverse circuit of the truck transmission.

Y\_\_N\_\_

## **R.O.M COMPARTMENT LED STRIP LIGHTS**

Compartment(s) specified shall have two (2) R.O.M LED strip lights provided. The light tube shall include light emitting diodes of 112 lumens of light per 12" section.

Y\_\_N\_\_

## **DOOR AJAR INDICATOR LIGHT - CHASSIS FURNISHED**

There shall be a chassis furnished 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.

Y\_\_N\_\_

## **STEP LIGHTS, LED**

TecNiq #D07 LED surface mounted lights with stainless steel case shall be provided and installed at the rear of the body to illuminate the rear step. Step lights shall be wired through the marker light and parking brake circuit.

Y\_\_N\_\_

## **STEP LIGHTS - WALKWAY**

TecNiq #D07 LED surface mounted lights with stainless steel case will be furnished and installed in the sidewalls of the walkway to illuminate this area.

Y\_\_N\_\_

## **STEP LIGHTS - REAR EGRESS**

A TecNiq model #D07 LED surface mounted light with stainless steel case shall be provided as an upper rear egress light. The light shall be located on the side wall of the egress at the top of the access ladder to illuminate the walking surface. The light shall be activated with the step light circuit.

Y\_\_N\_\_

# MILLBROOK NY HEAVY RESCUE

## **BROW LIGHT REAR WIRED TO REVERSE CIRCUIT**

Y\_\_N\_\_

The Brow lights or rear scene lights shall also be activated by the chassis reverse circuit.

## **BROW LIGHT**

Y\_\_N\_\_

One (1) FireTech #FT-B-27-ML3R-B, 21 LED brow light 27" long shall be provided and installed on the rear of the body in the specified location. The light(s) shall include 3 integrated red clearance lights and a black housing.

## **SCENE LIGHT**

Y\_\_N\_\_

There shall be four (4) FireTech, HiViz #FT-GESM Guardian Elite LED, 12 volt surface mounted light(s) with chrome bezel(s) provided and installed as specified. The scene light(s) shall produce 12,500 measured lumens of light output with 125 watts.

The light(s) shall be activated by a switch in the cab.

Locate upper body sides. One in the forward and rearward corners, inboard of the side upper warning lights.

## **SCENE LIGHT REMOTE SWITCH**

Y\_\_N\_\_

One (1) switch(es) shall be installed remote from the light for turning the specified scene lights on and off. The switch shall be wired through a low voltage relay for safety. The switch(es) shall be in addition to the switch located in the cab for activation of the light.

## **GROUND LIGHTS**

Y\_\_N\_\_

TecNiq model #T44-WD0B-1, 4" round LED ground lights with grommet will be installed under each stepping surface. Lights will be mounted under the rear step and activated through the marker light and parking brake circuit.

## **GROUND LIGHTS**

Y\_\_N\_\_

The lights under the chassis entrance doors that are provided by chassis dealer shall be activated at minimum when the doors are opened in conjunction with other chassis specifications when applicable.

## **ADDITIONAL LED GROUND LIGHTS**

Y\_\_N\_\_

Two (2) additional TecNiq model #T44-WD0B-1, 4" round LED ground light(s) with grommet will be provided under the vehicle in the area specified. The light(s) shall be switched together with the other ground lights.

## **ADDITIONAL LUMA BAR GROUND LIGHTS**

Y\_\_N\_\_

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Four (4) additional Amdor Luma Bar H2O LED light(s) shall be provided under the vehicle in the area specified. The lights shall be switched together with the other ground lights.

Walkway rooftop

Y\_\_N\_\_

## HANDLIGHT

Six (6) orange Streamlight Fire Vulcan LED model #44451 lantern(s) with 12 volt DC charger bases shall be furnished and installed. The Fire Vulcan® LED is a rechargeable, waterproof lantern featuring the latest in power LED technology and lithium-Ion nanotechnology batteries. The lantern includes two (2) ultra-bright blue tail-light LEDs for rear visibility and a momentary switch providing programmable access to various modes of operation. The chargers shall be wired direct to the chassis batteries.

Y\_\_N\_\_

## TRAFFIC ADVISOR

A Whelen model #TAM65 LED Traffic Advisor shall be provided in the area specified. The light shall be 36" long and shall include six (6) individual TIR6 LED amber lamps. The controls for the unit shall be installed in the chassis cab.

Y\_\_N\_\_

## RECESS FOR ARROWSTIK & TRAFFIC ADVISOR

The specified light strip shall be recessed in the body in an enclosure manufactured from the same material as the body.

One Recess For Arrowstik

One Recess For Mini Brow on rear Of body

Y\_\_N\_\_

## LINEAR SUPER LED, SERIES M9, RED

Six (6) Whelen M9 series Linear Super LED red lights with clear lenses and chrome flange shall be provided and mounted as follows:

two each upper body side and rear

One on the face of rooftop compartment rear

Y\_\_N\_\_

## LINEAR SUPER LED, SERIES M6, RED

Four (4) Whelen M6 series Linear Super LED red lights with clear lenses and chrome flange shall be provided and mounted as follows:

One each wheel well and one each side rear of body

Y\_\_N\_\_

## 120 VOLT WIRING & BREAKER PANEL

All 120 volt wiring shall be metallic or nonmetallic liquid tight flexible conduit rated at not less than 90

# MILLBROOK NY HEAVY RESCUE

degree Centigrade or type SO cord with a WA suffix, rated at 600 volts at not less than 90 degree Centigrade. The cord will be number or function coded to assist in trouble shooting.

All electrical equipment shall be circuit breaker controlled from a circuit breaker control panel. A plastic engraved label will be installed near the breaker box to identify the function of each circuit breaker.

A power source specification label shall be permanently attached near the breaker box. The label shall provide the operator with the following information:

- Rated voltage and type
- Phase
- Rated frequency
- Rated Amperage
- Continuous rated watts
- Power source engine speed

Y\_\_N\_\_

## **CIRCUIT BREAKER BOX - 8 POLE**

There shall be a Cutler Hammer 8 pole breaker box located in the same compartment as the generator. A pigtail of 10-4 SO cord shall be furnished to connect to the generator. 15 or 20 amp circuit breakers shall be furnished for each circuit, as required. A plastic engraved label will be installed near the breaker box to identify the function of each circuit breaker.

A power source specification label shall be permanently attached near the breaker box. The label shall provide the operator with the following information:

- Rated voltage and type
- Phase
- Rated frequency
- Rated Amperage
- Continuous rated watts
- Power source engine speed

Y\_\_N\_\_

Remote Mount Generator

Y\_\_N\_\_

## **TRANSFER SWITCH, 120V, SHORELINE & GENERATOR**

Two (2) transfer switch(s) shall be furnished and wired between the generator and the shoreline. The transfer switch will be wired to the electrical items specified. This will provide power to the selected 120 volt items from either the generator or the shoreline. Precautions will be installed so as to prevent back feed into shoreline in case the generator is turned on.

One cab and one body

110 volt outlets

Y\_\_N\_\_

## **HOT SHIFT PTO**

The hydraulic pump shall be driven by the chassis engine VIA a "HOT SHIFT" power take off unit from the

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chassis transmission. The engagement control to be located in cab, and identified by name plate. A console switch will be provided with a light to indicate "Generator Engaged" and an additional green light will be provided to indicate "OK to Operate Generator".

Y\_\_N\_\_

## **10 KW HARRISON HYDRAULIC GENERATOR**

A complete Harrison 10 KW hydraulic generator system shall be furnished and installed on the apparatus.

### **Generator Performance:**

Rating: 10,000 watts (10 KW)  
Volts: 120/240  
Phase: Single  
Cycles: 60 Hertz  
Amp. rating: 83.3 at 120 volts  
Engine speed at engagement: Idle  
Engine speed after engagement: 780 RPM (minimum)

### **Hydraulic Drive Components**

If there is sufficient room, the hydraulic pump will be mounted directly to the PTO. There shall be a triangular brace on the tail of the pump for support and to meet the PTO specifications on weight restriction.

If there is not enough room to direct mount the pump to the PTO then the pump shall be mounted to the frame rails with a drive shaft between them. The drive shaft between the generator and the power take-off shall be a tubular type, minimum outside diameter of 2" with a minimum wall thickness of .083. It shall have Spicer #1280 U-joints and be dynamically balanced to insure vibration free performance. NOTE; Solid bar stock type drive shafting is unacceptable. The drive shaft shall have a slip yoke with a minimum of 1.5" travel so that it can be easily removed. 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 dynamically balanced by computerized machinery. All drive shafts shall be balanced. (No exceptions.)

### **System Components**

System components such as hydraulic hoses, the hydraulic reservoir, hydraulic cooler, etc. shall be furnished and installed in accordance with the manufacturer's recommendations and requirements.

### **Safety Features**

The system shall be furnished with a model SA-4 high fluid temperature sensor, a model SA-3 low fluid level sensor, loading valve with time delay relay and an under voltage shunt trip to provide for better system protection in extreme operating conditions.

### **Manual and Schematics**

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Two (2) complete parts lists, maintenance, wiring schematic, hydraulic schematic, circuit boards, voltage regulator board, and other component manuals shall be provided.

## **Cab Mounted Controls**

In addition to the instruments and controls at the circuit breaker box location, additional controls shall be located in the chassis cab adjacent to the driver.

The following controls shall be provided in cab:

1. One (1) hydraulic generator engagement control with green pilot light.
2. One (1) engine fast idle switch.

There shall be a warning light in the cab to indicate when the PTO is engaged. An additional green light will be installed in the cab and marked "Generator PTO operational".

## **GENERATOR CONTROL PANEL**

There shall be an generator control panel complete with one (1) voltmeter, two (2) ammeters, one (1) frequency meter, one (1) hour meter, and two (2) single pole circuit breakers. The panel shall be located near the 120/240 current breaker panel.

## **GENERATOR LOAD TEST**

The generator shall be load tested at the body builders facility by a third-party testing firm. The generator shall be tested at various loads, from no load to full load to ensure reliable power delivery at various loads. The department shall be given a certificate proving completion of this test. The test shall last for two (2) hour and shall be completed after the generator has been installed on the apparatus.

Y\_\_N\_\_

## **GENERATOR TESTING**

The generator on the apparatus shall be tested by a third party to ensure proper operation as per NFPA 22.15.6 or 22.15.7.3.5 guidelines.

Y\_\_N\_\_

## **REMOTE GENERATOR START/STOP SWITCH**

An additional generator start/stop switch and preheat switch will be provided in the location specified.

Pump panel

Y\_\_N\_\_

## **OUTLET, EXTERIOR**

Six (6) 120 volt AC powerstrips with six (6) outlets shall be furnished and located as directed by the purchaser. The powerstrip(s) shall be surface mounted and labeled with a permanent nameplate listing the voltage, type of current, phase and amp rating.

Y\_\_N\_\_

## **LIGHT TOWER**

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There shall be installed as specified. A Will-Burt NiteScan Profiler powerlite series NS-3.0-00600-1 The lights to be wired directly to the generator system circuit breaker panel with conduit and standard copper wire. the light mast shall be internally wired and equipped with four (4) FRC "Spectra" LED 230 watt lights, 240 volt, mounted on Will-Burt's RCP dual tilt Remote Control Positioner lighting system. The horizontal surface mounted tower shall be raised electrically and pneumatically.

Instruction and warning labels shall be provided near the operating position of the light tower. A label shall also be provided that states the extended tower height from the ground and bulb replacement data. The light tower shall be equipped with a proximity switch. The switch will be wired into the "do not move apparatus when light is on" indicator light in cab and a light located in the area of the light tower controls. The lights will be activated when the light tower is not fully nested.

A 12-volt observation light will be installed on light tower. The light will be activated as soon as the up position switch is activated. The light is position so it will shine up in the air to help check for any overhead obstacles.

## WILL-BURT LIGHT TOWER SPECIFICATIONS

Night Scan Profiler Powerlite NS 3.0-600-1 Will-Burt Night Scan Sirion 120/240 VAC  
Model Number 721088011

### LIGHT TOWER CONTROL

Y\_\_N\_\_

A wired remote control pistol grip with 25' of coiled cable shall be provided and installed to control the light tower. The function of the control shall include full rotation and dual tilting lights, mast up/down and automatic stow and deployment of the light tower.

### GREEN STROBE

Y\_\_N\_\_

A green strobe light will be installed on top of light tower. Strobe light will be powered as specified.

### ELECTRIC CORD REEL

Y\_\_N\_\_

There shall be two (2) Hannay #ECR 1600 Series cord reel(s) mounted in the compartment(s) specified. The color of the reel shall be red.

The reel(s) shall be equipped with a 12 volt DC electric rewind motor. A guarded push button switch, no higher than 72" from the ground, shall be located next to the reel to activate the rewind motor. A label will be provided next to the rewind switch that states the reel type.

A label shall be provided in a readily visible location near reel. The label shall indicate:

- Current rating
- Current type

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- Phase
- Voltage
- Total cable length

Locate One R2 Ceiling  
Locate One C2 ceiling

Y\_\_N\_\_

## **12/3 YELLOW SO CORD**

Four Hundred (400) feet of 12/3 yellow SO cord will be provided and installed as specified.

Y\_\_N\_\_

## **ELECTRICAL JUNCTION BOX**

There shall be a total of two (2) Extenda-Lite model EJB four (4) outlet junction box(es) provided with one attached to the end of the electric cord reel(s) specified. Box to include four (4) backlit outlets with weatherproof snap covers. A mounting bracket shall be furnished on the inside of the compartment door where the cord reel is mounted to hold the connector box.

Outlet configuration will be a NEMA #L5-20R.

Y\_\_N\_\_

## **DISTRIBUTION BOX PIGTAIL**

The two (2) specified cord reel(s) and junction box(s) shall be equipped with mating watertight connectors.

Y\_\_N\_\_

## **CORD REEL BALL STOP**

Two (2) ball stops shall be installed on the specified cord reels.

Y\_\_N\_\_

## **ROLLER GUIDES**

To aid in pulling off and rewinding the cord/hose, there shall be two (2) Hannay 4-way captive roller guides mounted to a full width aluminum plate located at the top of the compartment. This roller assembly will be designed to handle two reels exiting the same compartment.

Y\_\_N\_\_

## **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.

Y\_\_N\_\_

## **WHEEL CHOCKS**

One (1) set (pair) of Worden Model #HGS non- folding NFPA approved type wheel chocks shall be provided. Wheel chocks will be mounted under the body in Worden underbody tracks.

Locate Roadside Front Wheel Well

Y\_\_N\_\_

## **MANUFACTURER NAMEPLATE & IDENTIFICATION**

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Custom Manufacturer nameplates shall be provided in the following locations:

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

Y\_\_N\_\_

## **MISCELLANEOUS FASTENERS**

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

Y\_\_N\_\_

## **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.

Y\_\_N\_\_

## **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.

Y\_\_N\_\_

## **APPARATUS ALIGNMENT**

The apparatus shall have a vehicle road performance wheel alignment conducted after completion of the vehicle assembly and prior to delivery from the Original Equipment Manufacturer. The alignment shall adjust front toe and steering wheel alignment to be within manufacturing specifications. This shall help prevent premature tire wear based on current weight distribution including equipment provided to the manufacturer and any water when applicable.

Y\_\_N\_\_

## **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.

Y\_\_N\_\_

Y\_\_N\_\_

## **PURPOSE**

Through these specifications it is the intent of to provide the Purchaser an apparatus to withstand the duty encountered in the firefighting and rescue apparatus service.

The apparatus will be constructed with due consideration to the nature and distribution of the load to be

# MILLBROOK NY HEAVY RESCUE

sustained, and to the characteristics of the service.

All parts not specifically mentioned herein, but which are necessary in order to furnish a complete fire apparatus, will be furnished and will conform to the best practices known to the emergency vehicle industry.

There will be no subletting of any part of the fabrication, painting, or finishing of this apparatus. The apparatus body will be built completely by Manufacture.

Manufacture will supply the specific brand names, model numbers, dimensions or capacities of components per Purchaser specifications unless noted in the Clarifications or Exceptions.

Manufacture has thirty (30) years experience manufacturing and field testing aluminum bodies for emergency vehicle duty. This shows our commitment to assure a reasonably trouble free life for the body being purchased and the importance we place on public safety associated with fire fighting.

The apparatus and all major components will be manufactured in the United States.

Y\_\_N\_\_

## **REGULATION COMPLIANCE**

Where applicable, Manufactures specifications fully complies with the requirements of the respective N.F.P.A. recommendations, Underwriters Laboratories Inc., State Inspection-Insurance Board, and all State and Federal Department of Transportation vehicle regulations at contract signing.

In the event the apparatus fails to meet a required UL test on the first trial, a second trial may be made at the option of Marion within thirty (30) days of the date of the first trial. The second trial shall be final or conclusive, and failure to comply with these requirements shall be cause for rejection and exercise of the performance bond.

Permission to keep or store apparatus, in any building owned or occupied by the Purchaser, during the above specified period with the permission of the Bidder, shall not constitute acceptance of the same.

Y\_\_N\_\_

## **ROAD REQUIREMENTS**

Road tests will be conducted by Manufacture with the apparatus fully loaded, and a continuous run of ten (10) miles will be made under typical driving conditions, during which time the apparatus will show no loss of power or overheating. The transmission, drive shafts, front and rear axles, etc. will run quietly and be free from abnormal vibration or noise throughout the operating range of the apparatus.

Y\_\_N\_\_

## **REQUIRED BONDING**

No bonds are required.

Y\_\_N\_\_

## **FORM AND DOCUMENT REQUIREMENTS**

**The following items are included in the Manufactures bid proposal:**

- A certified weight distribution diagram stating the payload capacity (G.V.W. less empty weight of apparatus).
- Color photographs of similar apparatus and features manufactured by Marion.

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- A list of a minimum of 100 vehicles similar to this bid that Manufacture previously built that includes names, addresses, and telephone numbers of the Purchasers' Fire Chiefs.
- A separate listing of a minimum of ten customers that have purchased two or more emergency vehicles similar to this proposal that Manufacture has manufactured in the last ten years. The listing includes the names, addresses, and telephone numbers of the Purchasers' Fire Chiefs.
- A statement that guarantees replacement parts will be available for a period of not less than 20 years on all components manufactured builder. This statement is signed by an officer of the company.
- A sample form of the inspection criteria used during the paint process of the apparatus. This form provides information pertaining to the areas of the apparatus painted, when painted, type and quantity of priming and finish paints used, and a graded scale of the finish paint quality. The form is signed by Manufactures paint supervisor, with inspection date, to indicate that each particular step is acceptable and approved.
- A "Driveshaft Alteration Record" on any vehicle where the driveline work is done for installation of a pump or PTO. This shows specific angles used for the pump and/or PTO and is signed and dated by the responsible individual.
- A sample Quality Assurance Certification form used by Manufactures electrical department that indicates, via a checklist and dated signature, that all 12 volt and 120 volt items of the apparatus have been inspected and approved. This includes installation quality as well as function.
- An estimated Amp draw analysis of the proposed apparatus 12 volt electrical system that shows estimated Amp draw of the apparatus responding to the scene and of the apparatus at the scene.
- Builders' full business address and the name of each person signing the bid typed or printed below the signature.
- The name, full address and phone number of the factory authorized sales representative who will coordinate the contract and delivery of the apparatus.

Y\_\_N\_\_

## INSURANCE

A Certificate of Insurance listing the amount of Manufactures Product Liability insurance coverage of \$7,000,000 total aggregate coverage is included in the bid.

Builder will maintain full casualty insurance coverage on the cab and chassis from the time of first possession until title to apparatus is accepted by the Purchaser.

The Purchaser may reserve the right to require proof of insurance from the manufactures insurance carrier prior to entering into contract with Builder.

Y\_\_N\_\_

## APPARATUS DRAWINGS

Builder included with the proposal, two (2) sets of scaled apparatus drawings done exactly to these specifications.

Said drawings are submitted in order for the Purchaser to permit evaluation of the scope of the work

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being proposed by Manufacture and our conformance to the specifications.

At a minimum, the drawings show left side exterior, right side exterior, and rear exterior. When applicable, the body top view or interior floor plan is also shown.

Y\_\_N\_\_

## **THREE DIMENSIONAL BODY DRAWING**

A three dimensional drawing of builders typical extruded aluminum body is submitted with the proposal. The drawing shows all the aluminum extrusions used including type and shape, and where located. The areas where the body crossmembers are mounted to the chassis frame are also shown.

This three dimensional drawing is submitted to give the Purchaser a clear understanding of the structural integrity of the unit.

Y\_\_N\_\_

## **THREE DIMENSIONAL PLUMBING DRAWING**

A three dimensional drawing example of a Manufactures similar truck pump compartment is submitted with the proposal. The drawing includes the pump panels, components, valves, and control rod placement.

Y\_\_N\_\_

## **WIRING DIAGRAM**

A wiring diagram that is typical for the type of unit being proposed by Builder is submitted so that the Purchaser can review the overall electrical system.

Y\_\_N\_\_

## **EXCEPTIONS, VARIATIONS OR CLARIFICATIONS**

Manufacture has provided a complete and accurate description of the proposed apparatus.

To provide for a fair and readily comparable evaluation of the proposals, builder has listed the apparatus description in the same sequence as provided in the Purchaser's bid specification.

Any variations and alternates of the brand, model number, dimension, size, or capacity are detailed clearly in the Clarifications and/or Exception page.

The Clarifications and/or Exception page is a separate sheet on builders letterhead and is numbered to correspond with items numbered in the Purchaser's specifications.

Specifically, Manufacture submits these specifications with their proposal and consecutively numbered each item of the proposal that differs. The number corresponds with builders' exception, variation, or clarification page that is included with the proposal.

Y\_\_N\_\_

## **PATENT INDEMNIFICATION BY BIDDER**

If the Manufactures bid is accepted, will indemnify the Purchaser against patent infringement claims and will defend any and all suits and assume all liability for use and all claims made against the Purchaser or any of its officials or agents for the use of any patents, process, device or article forming a part of the apparatus or any appliance furnished under contract.

Y\_\_N\_\_

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## COMPLETION

Manufacture will specify the estimated number of calendar days that the apparatus will be completed after award of the contract. Builder will not be held liable for delay in delivery caused by events not subject to control such as accidents, strikes or floods.

Y\_\_N\_\_

## FULL DOCUMENTATION AT TIME OF DELIVERY

Builder shall supply the Purchaser at time of delivery the following documentation:

- Complete and detailed operation and maintenance manuals for all apparatus components.
- A complete and exact wiring diagram of the delivered body electrical system.
- A written procedure, on Manufactures letterhead, detailing correct steps to be taken for future mixing of paint for touch up and repaint purposes. This will include exterior job color paint and compartment interior paint.
- A document, on Manufactures letterhead, detailing the procedure for maintenance and cleaning of the apparatus paint, lettering, striping, and aluminum treadplate. The document will detail steps to be taken during the "initial" cleaning process and "final" cleaning process, including type of materials and solutions to be used and required unit measurement of each solution.
- Procedures for correct waxing of the vehicle. The document will include an explanation of the danger of acid rain and the proper precautions to be taken to protect the apparatus. A copy of this maintenance, cleaning, and waxing document is provided with Marion's proposal.
- The delivered apparatus will have a certified G.V.W.R. weight sticker applied to the vehicle on delivery to assure the apparatus meets all laws pertaining to the weight carrying capacity of the vehicle.

Y\_\_N\_\_

## WARRANTY

Manufacture will warrant the apparatus to be free from defects in material and workmanship for a period of two (2) years. Component parts, if found to be defective, will be repaired or replaced without cost to purchaser. This warranty will be exclusive of the chassis, fire pump, and other trade accessories, which is normally warranted by their respective manufacturers.

In addition to the two (2) year base warranty, the following extended warranties will be furnished if applicable:

- A twenty (20) year structural warranty.
- A ten (10) year paint warranty.
- A seven (7) year electrical warranty.
- A ten (10) year stainless steel plumbing warranty.