

## **STOCK UNIT #14850 CHASSIS SPECIFICATIONS**

### **MODEL**

The chassis shall be a Metro Star model. The cab and chassis shall include design considerations for multiple emergency vehicle applications, rapid transit and maneuverability. The chassis shall be manufactured for heavy duty service with the strength and capacity to support a fully laden apparatus, one hundred (100) percent of the time.

### **MODEL YEAR**

The chassis shall have a vehicle identification number that reflects a 2009 model year.

### **COUNTRY OF SERVICE**

The chassis shall be put in service in the country of United States of America (USA).

### **APPARATUS TYPE**

The apparatus shall be a pumper vehicle designed for emergency service use which shall be equipped with a permanently mounted fire pump which has a minimum rated capacity of 750 gallons per minute (3000 L/min). The apparatus shall include a water tank and hose body whose primary purpose is to combat structural and associated fires.

### **VEHICLE TYPE**

The chassis shall be manufactured for use as a straight truck type vehicle and designed for the installation of a permanently mounted apparatus behind the cab. The apparatus of the vehicle shall be supplied and installed by the apparatus manufacturer.

### **AXLE CONFIGURATION**

The chassis shall feature a 4 X 2 axle configuration consisting of a single rear drive axle with a single front steer axle.

### **GROSS AXLE WEIGHT RATINGS FRONT**

The front gross axle weight rating (GAWR) of the chassis shall be 18,000 pounds.

This front gross axle weight rating shall be adequate to carry the weight of the completed apparatus including all equipment and personnel.

### **GROSS AXLE WEIGHT RATINGS REAR**

The rear gross axle weight rating (GAWR) of the chassis shall be 24,000 pounds.

This rear gross axle weight rating shall be adequate to carry the weight of the completed apparatus including all equipment and personnel.

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### CAB STYLE

The cab shall be a custom, enclosed model, built specifically for the fire service by a company specializing in cab and chassis design for all fire service applications.

The cab shall be manufactured for heavy-duty service utilizing adequate strength and capacity for the application of protecting firefighters. The cab shall be of a modular design offering improved strength, durability and reduced weight. The modular design shall allow for faster, less costly replacement of components. Per pound, sheet panel aluminum extrusions offer a higher tensile strength, 45,000 PSI, and yield strength, 40,000 PSI, than that of lower grade sheet such as 3003-H13. For this reason, the cab shall be of aluminum extrusion construction, which shall offer superior strength and the truest, flattest surface ensuring less expensive paint repairs if needed.

The method of cab construction shall use a process incorporating techniques outlined in accordance with the American Welding Society D1.1-96 requirements for structural steel welding. All aluminum welding shall be completed to the American Welding Society and ANSI D1.2-96 requirements for structural welding of aluminum.

To provide a superior finish by reducing welds that fatigue cab metal; the roof, the rear wall and side panels shall be assembled using proven industrial adhesives, designed specifically for aluminum fabrication, which exceed the strength of a weld, for construction.

All interior and exterior seams shall be sealed for optimum noise reduction in addition to the most favorable efficiency for heating and cooling retention.

The cab shall be constructed of 5052-H32 Marine Grade, one hundred percent primary aluminum plate. A single formed, one (1) piece extrusion, manufactured from 6061-T6 100 percent primary one-quarter inch thick aluminum shall be used for the "A" pillar adding strength and rigidity to the cab as well as additional roll-over protection. The cab side wall skins and shall be 0.125 inch thick, the rear wall and roof skin shall be 0.19 inch thick, the front skin shall be 0.125 inch thick.

The cab shall incorporate tongue and groove fitted 6061-T6 0.25 inch thick aluminum extrusions for extreme duty situations. The cab shall include multi-layer composite insulation for improved cab heating and cooling in addition to noise reduction.

Proposals offering products built with anything less than the alloy-temper mentioned or from any other material, other than aluminum, shall not be considered. Additionally, any cabs utilizing recycled or recovered aluminum plate or extrusion products shall not be considered due impurities in the composition leading to a lack of strength.

The cab shall incorporate a fully enclosed design, allowing for a spacious cab area with no partition between the front and rear sections of the cab. The walls of the vehicle shall include roof supports allowing for an open design. The outside dimension of the cab shall be 94.00 inches wide with a minimum interior width of 88.00 inches.

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The cab overall length shall be 128.00 inches in length with 54.00 inches from the centerline of the front of the axle to the back of the cab. The cab shall offer a height of 58.00 inches from the front floor to the headliner and a rear floor to headliner height of 65.00 inches, at a minimum. All interior measurements shall include the area within the interior trimmed surfaces and not to any unfinished surface.

In order to offer the optimum amount of cab space to occupants, there shall be no consideration given for any cab unable to comply with the minimum measurements for interior cab space as listed.

The cab shall include a driver and officer area with two (2) cab door openings. The front door opening shall offer a clear door opening of 43.00 inches wide X 56.00 inches high. The rear door opening shall offer a clear door opening of 34.00 inches wide X 63.00 inches high. This style of cab shall also include a crew area offering up to eight (8) seating positions.

The cab shall incorporate a two (2) step configuration from the ground to the cab floor for each door opening. The lower step shall be constructed of heavy duty safety grating which meets or exceeds Federal Specification RRG-1602-latest revision and performs under dry, greasy, muddy, soapy and icy conditions and offers open drainage.

The first step for the driver and officer area shall measure 11.44 inches deep X 31.13 inches wide. The intermediate step shall measure 8.75 inches deep X 33.00 inches wide. The height from the first step to the intermediate step and the intermediate step to the cab floor shall not exceed 11.00 inches.

The first step for the crew area shall measure 12.13 inches deep X 20.44 inches wide. The intermediate step shall measure 10.50 inches deep X 23.00 inches wide. The height from the first step to the intermediate step and the intermediate step to the cab floor shall not exceed 12.50 inches.

The cab front shall be constructed of 5052-H32 Marine Grade, .090 of an inch thick, one hundred percent primary aluminum plate which shall include a classic front appearance. The front of the cab shall include a cast molded module accommodating up to four (4) Hi/Low beam headlights and two (2) turn signal lights or up to four (4) warning lights.

### **CAB FRONT FASCIA**

The front cab fascia shall be constructed of 5052-H32 Marine Grade, 0.090 of an inch thick, one hundred percent primary aluminum plate which shall be an integral part of the cab.

The cab fascia will encompass the entire front of the aluminum cab structure from the bottom of the windshield to the bottom of the cab and shall be the "Classic" design.

The front cab fascia shall include two (2) molded plastic modules on each side accommodating a total of up to four (4) Hi/Low beam headlights and two (2) turn signal lights or up to four (4) warning lights. Two (2) chrome plated molded plastic bezels shall be provided on each side around each set of two lamps.

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### **FRONT GRILLE**

The front fascia shall include a flat, stainless steel front grille complete with a with a Rosenbauer "R" shall be provided on the front of the cab. The grille shall measure 39.00 inches wide X 33.50 inches high X 1.50 inches deep. The grille shall include a minimum free air intake of 632.90 square inches shall be installed on the front of the cab with the upper portion of the grille hinged. The grille shall include two (2) flush push button latches which shall allow access to the front fluid fills of the cab. The front grille shall offer easy access in examination of and adding engine oil or wiper washer fluid as well as access to the windshield wiper motor and linkage.

### **CAB PAINT EXTERIOR**

The cab shall be painted prior to the installation of glass accessories and all other cab trim to ensure complete paint coverage and the maximum in corrosion protection of all metal surfaces.

All metal surfaces on the entire cab shall be ground by disc to remove any surface oxidation or surface debris which may hinder the paint adhesion. Once the surface is machine ground a high quality acid etching of base primer shall be applied. Upon the application of body fillers and their preparation, the cab shall be primed with a coating designed for corrosion resistance and surface paint adhesion. The maximum thickness of the primer coat shall be 2.00 mils.

The entire cab shall then be coated with an intermediate solid or epoxy surfacing agent that is designed to fill any minor surface defects, provide an adhesive bond between the primer and the paint and improve the color and gloss retention of the color. The finish to this procedure shall be a sanding of the cab with 360 grit paper, the seams shall be sealed with SEM brand seam sealer and painted with two (2) to four (4) coats of an acrylic urethane type system designed to retain color and resist acid rain and most atmospheric chemicals found on the fire ground or emergency scene.

The cab shall then be painted with the specific color designated by the customer with a minimum thickness of 2.00 mils of paint, followed by a clear top coat not to exceed 2.00 mils.

### **CAB PAINT MANUFACTURER**

The cab shall be painted with PPG Industries paint.

### **CAB PAINT PRIMARY/LOWER COLOR**

The lower paint color shall be PPG FBCH 71663 Red.

### **CAB PAINT WARRANTY**

The cab and chassis shall be covered by a limited manufacturer paint warranty which shall be in effect for ten (10) years from the first owner's date of purchase or in service or the first 100,000 actual miles, whichever occurs first.

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### **CAB ENGINE TUNNEL**

The cab interior shall include a fixed type engine tunnel cover sized to accommodate an engine with a smaller block. The engine tunnel shall be an integral part of the cab constructed of 5052-H32 Marine Grade, .190 of an inch thick, one hundred percent primary aluminum plate. The tunnel shall be a maximum of 41.50 inches wide X 23.00 inches high.

The engine tunnel shall be insulated with multi-layer insulating material, consisting of foam, a sound barrier of 1.00 pounds per square foot with a facing which resists heat transfer. This insulation shall be held in place by adhesive, aluminum stick pins and retention caps. Any exposed insulation seams and edges shall be sealed reducing moisture and debris.

### **CAB ENTRY DOORS**

The cab shall include a driver and officer area with two cab door openings which offer a clear door opening of 40.75 inches wide.

The doors shall be constructed of extruded aluminum with a nominal thickness of .125 inch. The exterior skins shall be constructed of .125 inch aluminum plate. The cab shall include four (4) entry doors as high as possible for ease of entering and egress when outfitted with an SCBA.

All cab and crew doors shall be of substantial weight for the optimum strength and rigidity for the best performance in all cab crash testing. Any cab with front and crew doors manufactured of less than the material thickness of .125 inch in both the extrusion and exterior skin shall not be considered.

The doors shall include a double rolled style automotive rubber seal around the perimeter of each door frame and door edge which ensures a weather tight fit.

All door hinges shall be hidden within flush mounted cab doors for a pleasing smooth appearance and perfect fit along each side of the cab. Each hinge shall be .375 inch piano style and be constructed of stainless steel.

The piano style hinge and hidden flush mounted door is the most favorable construction keeping dirt and debris out of the hinge allowing for optimum operation throughout the lifetime of the door.

Proposals offering door hinge thickness any less than stated shall not be considered.

Proposals including doors that do not comply with the flush mounting as described or those including exposed hinges shall not be considered.

### **CAB ENTRY DOOR TYPE**

All cab entry doors shall be full length in design to fully enclose the lower cab steps.

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### **CAB STRUCTURAL WARRANTY**

The cab structure shall be warranted for a period of ten (10) years or one hundred thousand (100,000) miles which ever may occur first. Warranty conditions may apply and shall be listed in the detailed warranty document that shall be provided upon request.

### **CAB TEST INFORMATION**

The cab shall have successfully achieved survival of the International crash test ECE-29, Addendum 28, Revision 1 as indicated below.

As part of the ECE regulation 29 test, the frontal area of the cab is struck by a 3,700 pound pendulum weight. The weight is brought back to a sixty degree angle and then the weight is released and allowed to swing forward, imparting some 32,600 pounds foot of force to the cab front face. The cab shall be so constructed that after the test, there will be minimal intrusion of the cab structure into the passenger area. The doors shall remain usable for both entry and exit. Also, as part of the test the cab roof must withstand a static load bearing test. The cab shall withstand a weight of over 60,000 pounds without permanent damage or collapse. The above tests shall be witnessed by and attested to by an independent third party. The test results shall be recorded on/by cameras, high speed imagers, accelerometers and strain gauges, with notarized copies of the letters verifying the test results and videos of said test shall be available upon request.

### **ELECTRICAL SYSTEM**

The chassis shall include a single starting electrical system which shall include a 12 volt direct current system, suppressed per SAE J551. The wiring shall be appropriate gauge cross link with 311 degree Fahrenheit insulation. All SAE wires in the chassis shall be color coded and shall include the circuit number and function where possible. The wiring shall be protected by 275 degree Fahrenheit minimum high temperature flame retardant loom.

### **OEM WIRING**

The wiring system shall include a custom interface harness designed to the specs provided by the OEM. This shall include one (1) 12 volt 200 amp continuous duty solenoid and 200 amp fuse mounted above the driver's battery box controlled by master power and one rear warning rocker switch will be provided on the rocker switch panel.

### **APPARATUS WIRING PROVISION**

An apparatus wiring panel shall be installed on the officer side bulkhead below the dash which shall include eight (8) open circuits consisting of three (3) 20 amp, one (1) 30 amp, three (3) 10 amp, and one (1) 15 amp circuit, with relays and breakers with trigger wires which shall be routed to the rocker switch panel.

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### **VEHICLE DATA RECORDER**

The chassis shall have a Class One Vehicle Data Recorder system installed. The system shall be designed to meet NFPA 1901. The following information shall be recorded:

- Vehicle Speed
- Acceleration
- Deceleration
- Engine Speed
- Engine Throttle Position
- ABS Event
- Seat Occupied Status
- Seat Belt Status
- Master Optical Warning Device Switch Position
- Time
- Date

Each portion of the data shall be recorded at the specified intervals and stored for the specified length of time to meet NFPA 1901 guidelines and shall be retrievable by connecting a laptop computer to the VDR system.

### **POWER & GROUND STUD**

A 40 amp battery direct power and ground stud shall be provided and installed in the electrical distribution panel. The stud shall be size #10 and protected with a 40 amp circuit breaker.

### **EXTERIOR ELECTRICAL TERMINAL COATING**

All terminals exposed to the elements will be sprayed with a yellow protective rubberized coating to prevent corrosion.

### **ENGINE**

The power plant for the vehicle shall offer a high pressure performance, turbo charged engine which shall feature a high pressure common rail fuel system. This system shall be coupled with a proven Holset turbo which delivers outstanding performance at ratings up to 360 HP. The Cummins ISC engine shall include replaceable mid-stop cylinder liners plus heavy duty roller followers, targeted piston cooling and 30% more efficient oil cooling for improved durability and reliability. The heavy duty design shall also feature stronger braking capacity.

The engine shall be EPA certified to meet the 2007 emissions standards without compromising performance, reliability or durability. The Cummins ISC 360 engine shall feature an air charge cooled engine which consists of an in line six (6) cylinder, four cycle diesel powered engine. The engine shall offer a rating of 360 horse power at 2000 RPM which shall be governed at 2200 RPM. The torque rating shall feature 1050 foot pounds of torque at 1400 RPM with 506 cubic inches of displacement. The Cummins ISC 360 engine shall feature an electronic governor.

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A wiring harness shall be supplied ending at the back of the cab. The harness shall include a connector which shall allow an optional harness for the pump panel. The included circuits shall be provided for a tachometer, oil pressure, engine temperature, hand throttle, high idle and a PSG system. A circuit for J1939 data link shall also be provided at the back of the cab.

The engine shall include an engine mounted combination full flow/by-pass oil filter with replaceable spin on cartridge for use with the engine lubrication system. The engine shall include Citgo brand Citgard 500, or equivalent SAE 15W40 CJ4 low ash engine oil which shall be utilized for proper engine lubrication.

### **ENGINE PROGRAMMING HIGH IDLE SPEED**

The engine high idle control shall maintain the engine idle at approximately 1250 RPM when engaged.

### **ENGINE HIGH IDLE CONTROL**

The vehicle shall be equipped with a high-idle speed control which shall be pre-set to maintain the engine idle at a pre-determined rate when activated manually. This device shall operate when the master switch is activated and safely interlocked only to function when the transmission is in neutral with the parking brake set.

### **ENGINE PROGRAMMING ROAD SPEED GOVERNOR**

The engine shall include programming which will govern the top speed of the vehicle.

### **AUXILIARY ENGINE BRAKE**

The engine shall utilize a variable geometry turbo (VGT). The VGT auxiliary engine brake shall be an integral part of the turbo and shall offer a variable rate of exhaust flow, which when activated shall slow the engine and in turn slow the vehicle.

The VGT shall actuate the vehicle's brake lights when engaged as an auxiliary brake. A cutout relay shall be installed to disable the VGT when in pump mode or when an ABS event occurs. The VGT engine brake shall activate at a 0% accelerator throttle position when in operation mode.

### **AUXILIARY ENGINE BRAKE CONTROL**

An engine variable geometry turbo brake control device shall be included. The electronic control device shall monitor various conditions and shall activate the engine brake only if all of the following conditions are simultaneously detected:

- A valid gear ratio is detected.
- The driver has requested or enabled engine compression brake operation.
- The throttle is at a minimum engine speed position.
- The electronic controller is not presently attempting to execute an electronically controlled final drive gear shift.

The variable geometry turbo brake control shall be controlled through an on/off rocker switch.

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### **FLUID FILLS**

The front of the chassis shall accommodate fluid fills for the engine oil, and the power steering fluid through the grille. This area shall also accommodate checks for the engine oil, and power steering fluid.

### **ELECTRONIC ENGINE OIL LEVEL INDICATOR**

The engine oil shall be monitored electronically and shall send a signal to activate a warning in the instrument panel when levels fall below normal. The warning shall activate in a low oil situation upon turning on the master battery and ignition switches without the engine running.

### **ENGINE WARRANTY**

The Cummins engine shall be warranted for a period of five (5) years or 100,000 miles, whichever occurs first.

### **ENGINE PROGRAMMING REMOTE THROTTLE**

The engine ECM (Electronic Control Module) discreet wire remote throttle circuit shall be turned off for use with a J1939 based pump controller or when the discreet wire remote throttle controls are not required.

### **ENGINE PROGRAMMING IDLE SPEED**

The engine low idle speed will be programmed at 700 rpm.

### **ENGINE FAN DRIVE**

The engine cooling system fan shall be direct drive belt driven on the engine.

### **ENGINE COOLING SYSTEM**

There shall be a heavy-duty aluminum cooling system designed to meet the demands of the fire industry. The cooling system shall have the capacity to keep the engine properly cooled under all conditions of road and pumping operations. The cooling system shall be designed and tested to meet or exceed the requirements specified by the engine and transmission manufacturer and all EPA requirements. The complete cooling system shall utilize heavy-duty welds and be mounted to isolate the entire system from vibration or stress. The individual cores of the cooling system shall be mounted in a manner to allow expansion and contraction at various rates without inducing stress into the adjoining cores.

The cooling system shall be comprised of a stacked, single depth package that provides the maximum cooling capacity for the specified engine as well as offers excellent serviceability. The main components shall include a surge tank, a charge air cooler, a recirculation shield, and a radiator.

Proposals unable to offer a stacked single depth cooling package shall not be considered.

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There shall be a single depth core that allows greater efficiency, enhanced serviceability, and lighter weight with a higher ambient capability.

The cooling package core shall not protrude below the frame of the vehicle by more than 1.1 inch. This feature shall improve the angle of approach thereby reducing possible damage.

The radiator shall be a cross-flow design constructed completely of aluminum with welded side tanks. The radiator shall include a minimum of a 627 square inch core and shall be bolted to the bottom of the charge air cooler to allow a single depth core, thus allowing a more efficient and serviceable cooling system. The radiator shall be equipped with a drain cock to drain the coolant for serviceability.

The cooling system shall include a one piece injected molded Polymer fan blade designed to provide long life in harsh environments. Polymer fans provide a significant weight reduction over metal fans providing longer life for fan clutch linings and bearings along with increased fan belt life.

The cooling system shall be equipped with a surge tank that is capable of removing entrained air from the system. The surge tank shall be equipped with a low coolant probe and sight glass to monitor the level of the coolant. The surge tank shall have a cap that meets the engine manufactures pressure requirements as well as the system design requirements.

All radiator tubes shall be formed from aluminized steel tubing. Recirculation shields shall be installed where required to prevent heated air from reentering the cooling package and affecting performance. When a center bumper compartment is installed an additional shield may be required to redirect the airflow into the coolers.

The charge air cooler shall be a cross-flow design constructed completely of aluminum with welded side tanks. The charge air cooler shall have a minimum of a 390 square inch core and be bolted to the top of the radiator to allow a single depth core, thus allowing a more efficient and serviceable cooling system.

All charge air cooler tubes shall be formed from aluminized steel tubing and installed with silicone hump hoses and stainless steel “constant torque” style clamps meeting the engine manufactures requirements.

### **ENGINE COOLANT**

The cooling package shall include Extended Life Coolant (ELC). The use of ELC provides longer intervals between coolant changes over standard coolants providing improved performance. The coolant shall contain a 50/50 mix of ethylene glycol and de-ionized water to keep the coolant from freezing to a temperature of -34 degrees F.

Proposals offering supplemental coolant additives (SCA) shall not be considered, as this is part of the extended life coolant makeup.

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### **ELECTRONIC COOLANT LEVEL INDICATOR**

The instrument panel shall feature a low engine coolant indicator light which shall be located in the center of the instrument panel. An audible tone alarm shall also be provided to warn of a low coolant incident.

### **ENGINE PUMP HEAT EXCHANGER**

A single bundle type coolant to water heat exchanger shall be installed between the engine and the radiator. The heat exchanger shall be designed to prohibit water from the pump from coming in contact with the engine coolant. This shall allow the use of water from the discharge side of the pump to assist in cooling the engine.

### **COOLANT HOSES**

The cooling systems hose shall be formed silicone hose and formed aluminized steel tubing and include stainless steel constant torque band clamps.

### **ENGINE AIR INTAKE**

The engine air intake system shall include an ember separator air intake filter which shall be located in the front of the cab behind the officer side fascia. This filter shall protect the downstream air filter from embers using a combination of unique flat and crimped metal screens constructed into a galvanized steel frame. This multilayered screen shall be designed to trap embers or allow them to burn out before passing through the pack, while creating only minimal air flow restriction through the system. Periodic cleaning or replacement of the screen shall be all that is required after installation.

The engine shall also include an air intake filter which shall be bolted to the frame and located under the front of the cab on the officer side. The dry type filter shall ensure dust and debris safely contained inside the disposable housing, eliminating the chance of contaminating the air intake system during air filter service via a leak-tight seal.

The air flow distribution and dust loading shall be uniform throughout the high-performance filter cone pack, which shall result in pressure differential for improved horsepower and fuel economy. The air intake shall be mounted within easy access via a hinged panel behind the headlight module. The air intake system shall include a restriction indicator light in the warning light cluster on the instrument panel, which shall activate when the air cleaner element requires replacement.

### **ENGINE EXHAUST SYSTEM**

The exhaust system shall include a diesel particulate filter and a diesel oxidation catalyst to meet current EPA standards.

The system shall utilize 0.065 inch thick stainless steel exhaust tubing between the engine turbo and the diesel particulate filter. This section of the exhaust system shall be wrapped with a thermal cover in order to retain the necessary heat for system regeneration. Zero leak clamps seal all system joints between the turbo and diesel particulate filter.

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From the diesel particulate filter to the end of the tailpipe the system shall be plumbed with 0.065 inch thick aluminized steel tubing connected with overlapping band style clamps. The discharge shall terminate horizontally on the officer side of the vehicle ahead of the rear tires.

The exhaust system shall be mounted below the frame in the outboard position providing maximum space for frame mounted components such as midship pumps.

### **ENGINE EXHAUST ACCESSORIES**

An exhaust temperature mitigation device shall be shipped loose for installation by the body manufacturer on the vehicle. The temperature mitigation device shall lower the temperature of the exhaust by combining ambient air with the exhaust gasses at the exhaust outlet.

### **TRANSMISSION**

The drive train shall include an Allison Gen IV-E model EVS 3000 torque converting, automatic transmission which shall include electronic controls. The transmission shall feature two (2) 10-bolt PTO pads located on the converter housing.

The transmission shall include two (2) internal oil filters and Castrol TranSynd™ synthetic TES 295 transmission fluid which shall be utilized in the lubrication of the EVS transmission. An electronic oil level sensor shall be included with the readout located in the shift selector.

The Gen IV-E transmission shall include prognostic diagnostic capabilities. These capabilities shall include the monitoring of the fluid life, filter change indication, and transmission clutch maintenance.

The transmission gear ratios shall be:

1st	3.49:1
2nd	1.86:1
3rd	1.41:1
4th	1.00:1
5th	0.75:1
6th	0.64:1 (if applicable)
Rev	5.03:1

### **TRANSMISSION MODE PROGRAMMING**

The transmission, upon start-up, will select the fifth speed operation without the need to press the mode button.

### **TRANSMISSION FEATURE PROGRAMMING**

The EVS group package number 127 shall contain the 199 vocational package in consideration of the duty of this apparatus for rescue. This package shall incorporate an automatic neutral with selector override. This feature commands the transmission to neutral when the park brake is

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applied, regardless of drive range requested on the shift selector. This requires re-selecting drive range to shift out of neutral for the override.

An eight (8) pin Delphi connector will be provided next to the steering column connector. This will contain the following input/output circuits to the transmission control module.

Function ID	Description	Wire assignment
C	PTO Request	143
F	Aux. Function Range Inhibit (Special)	101/142
G	PTO Enable Output (See Input Function C)	130
S	Neutral Indicator for PTO	145
	Signal Return	103

### **ELECTRONIC TRANSMISSION OIL LEVEL INDICATOR**

The transmission fluid shall be monitored electronically and shall send a signal to activate a warning in the instrument panel when levels fall below normal.

### **TRANSMISSION SHIFT SELECTOR**

An Allison pressure sensitive range selector touch pad shall be provided and located to the right of the driver within clear view and easy reach. The shift selector shall provide a prognostic indicator (wrench symbol) on the digital display between the selected and attained indicators. The prognostics monitor various operating parameters to determine and shall alert you when a specific maintenance function is required.

### **TRANSMISSION PRE-SELECT WITH AUXILIARY BRAKE**

When the auxiliary brake is engaged, the transmission shall automatically shift to second gear to decrease the rate of speed assisting the secondary braking system and slowing the vehicle.

### **TRANSMISSION COOLING SYSTEM**

The transmission shall include an air to oil cooler integrated into the lower portion of cooling package. The transmission cooling system shall meet all transmission manufacturer requirements. The cooling system shall feature a circuit provision located within the hydraulic transmission oil which shall provide for rapid warm up to the optimum transmission operating temperature.

### **TRANSMISSION WARRANTY**

The Allison EVS series transmission shall be warranted for a period of five (5) years with unlimited mileage. Parts and labor shall be included in the warranty.

### **DRIVELINE**

All drivelines shall be heavy duty metal tube and equipped with Spicer 1710 series universal joints. The shafts shall be dynamically balanced prior to installation to alleviate future vibration. A splined slip joint shall be provided in each driveshaft and shall be coated with Glide coat<sup>®</sup>.

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### **FUEL FILTER/WATER SEPARATOR**

The fuel system shall have a Fleetguard FS1003 fuel filter/water separator as a primary filter. The fuel filter shall have a drain valve.

A water in fuel sensor shall be provided and wired to an instrument panel lamp and audible alarm to indicate when water is present in the fuel/water separator.

A secondary fuel filter shall be included as approved by the engine manufacturer.

### **FUEL LINES**

The fuel system lines shall be brown reinforced nylon tubing rated for diesel fuel with brass fittings installed from the tank to engine including the return.

### **FUEL TANK**

The fuel tank shall have a minimum capacity of fifty (50) gallons and measure 35.00 inches wide X 15.00 inches high X 24.00 inches long. The baffled tank shall be made of 14 gauge aluminized steel. The tank exterior is painted with a PRP Corsol™ black anti-corrosive exterior metal treatment finish. This results in a tank which offers the internal and external corrosion resistance.

The fuel tank shall be mounted 2.00 inches below the frame, behind the rear axle. The tank can be easily lowered and removed for service purposes.

The tank shall have a vent port to facilitate venting to the top of the fill neck for rapid filling without "blow-back" and a roll over ball check vent for temperature related fuel expansion and draw.

The tank is designed with dual draw tubes and sender flanges. The tank shall have 2.00 inch NPT fill ports for right or left hand fill. A 0.5 inch NPT drain plug shall be centered in the bottom of the tank.

### **FUEL TANK FILL PORT**

The fuel tank fill ports shall be offset with the right fill port located in the middle position and the left fill port located in the rearward position on the fuel tank.

### **FRONT AXLE**

The front axle shall be a Meritor Easy Steer Non drive front axle, model number MFS-18. The axle shall include a 3.74 inch drop and a 71.00 inch king pin intersection (KPI). The axle shall include a conventional style hub with a standard knuckle. The weight capacity for the axle shall be rated to 18,000 pounds.

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### **FRONT WHEEL BEARING LUBRICATION**

The front axle wheel bearings shall be lubricated with clear oil. The oil level can be visually checked via clear inspection windows in the front axle hubs.

### **FRONT SHOCK ABSORBERS**

Two (2) Bilstein inert, nitrogen gas filled shock absorbers shall be provided and installed as part of the suspension system. The shocks shall be a monotubular design and fabricated using a special extrusion method, utilizing a single blank of steel without a welded seam, achieving an extremely tight peak-to-valley tolerance and maintains consistent wall thickness. The monotubular design shall provide superior strength while maximizing heat dissipation and shock life.

The ride afforded through the use of a gas shock is more consistent and shall not deteriorate with heat, the same way a conventional oil filled hydraulic shock would.

The Bilstein front shocks shall include a digressive working piston assembly allowing independent tuning of the compression and rebound damping forces to provide optimum ride and comfort without compromise. The working piston design shall feature fewer parts than most conventional twin tube and “road sensing” shock designs and shall contribute to the durability and long life of the Bilstein shock absorbers.

Proposals offering the use of conventional twin tube or “road sensing” designed shocks shall not be considered.

### **FRONT SUSPENSION**

The front suspension shall include four (4), 54.00 inch long and 4.00 inch wide taper leaf springs with a military double wrapped front eye. Both spring eyes shall have a case hardened threaded bushing installed with lubrication counter bore and lubrication land off cross bore with grease fitting. The spring capacity shall be rated at 18,000 pounds.

### **STEERING COLUMN/ WHEEL**

The cab shall include a Douglas Autotech steering column shall be a seven (7) position tilt and 2.25 inch telescopic type with an 18.00 inch steering wheel located on the left side of the cab designating the driver’s position. The steering wheel shall be covered with black absorbite padding.

The steering column shall contain a horn button, self-canceling turn signal switch, four-way hazard switch and headlamp dimmer switch.

### **POWER STEERING PUMP**

The hydraulic power steering pump shall be a TRW PS and shall be gear driven from the engine. The pump shall be a balanced, positive displacement, sliding vane type.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **ELECTRONIC POWER STEERING FLUID LEVEL INDICATOR**

The power steering fluid shall be monitored electronically and shall send a signal to activate an audible alarm and visual warning in the instrument panel when fluid level falls below normal.

### **FRONT AXLE CRAMP ANGLE**

The chassis shall have a front axle cramp angle of 50 degrees to the left and right.

### **CHASSIS ALIGNMENT**

The chassis frame rails shall be measured to insure the length is correct and cross checked to make sure they run parallel and are square to each other. The front and rear axles shall be laser aligned. The front tires and wheels shall be aligned and toe-in set on the front tires by the chassis manufacturer.

The completed apparatus shall be rechecked for proper alignment once the chassis has been fully loaded and before being placed in service.

### **REAR AXLE**

The rear axle shall be a Meritor model number RS-24-160. The axle shall be built of superior construction and quality components to provide the rugged dependability needed to stand up to the fire industry's demands. The axle shall include rectangular shaped, hot-formed housings for extra strength and rigidity. The axles shall also include torsion flow axle shafts that feature a surface hardness which resists fatigue and a resilient core which absorbs shock. There shall be unitized pinion seals within the axle helping to prevent leakage and harmful road contaminants from entering the axle components. The axle shall include a rigid differential case for high axle strength and reduced maintenance.

The axle shall include single reduction gearing and shall have a rated capacity of 24,000 pounds.

### **REAR AXLE DIFFERENTIAL LUBRICATION**

The rear axle differential shall be lubricated with oil.

### **REAR WHEEL BEARING LUBRICATION**

The rear axle wheel bearings shall be lubricated with oil.

### **VEHICLE TOP SPEED**

The top speed of the vehicle shall be approximately 68 MPH +/-2 MPH at governed engine RPM.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **REAR SUSPENSION**

The single rear axle shall feature a Reyco 79KB vari-rate, self-leveling captive slipper type spring suspension, with 57.50 inch X 3.00 inch springs. One (1) adjustable and one (1) fixed torque rod shall be provided.

The rear suspension capacity shall be rated from 21,000 to 31,500 pounds.

### **FRONT TIRE**

The front tires shall be Michelin 315/80R-22.5 20PR "L" tubeless radial XZA1 highway tread.

The front tire stamped load capacity shall be 18,180 pounds per axle with a speed capacity of 75 miles per hour when properly inflated to 130 pounds per square inch.

The front tire US Fire Service Intermittent Usage load capacity shall be 20,000 pounds per axle with a speed capacity of 75 miles per hour when properly inflated to 130 pounds per square inch.

### **REAR TIRE**

The rear tires shall be Michelin 11R-22.5 16PR "H" tubeless radial XDN2 all weather tread designed for exceptional traction and mileage.

The rear tire stamped load capacity shall be 24,020 pounds per axle with a speed capacity of 75 miles per hour when properly inflated to 120 pounds per square inch.

The rear tire US Fire Service Intermittent Usage load capacity shall be 24,820 pounds per axle with a speed capacity of 75 miles per hour when properly inflated to 120 pounds per square inch.

### **TIRE PRESSURE INDICATOR**

There shall be tire pressure indicators at each tire valve stem on the vehicle that shall indicate if there is insufficient pressure in the specific tire.

### **FRONT WHEEL**

The front wheels shall be Accuride hub piloted, 22.50 inch X 9.00 inch steel type wheels. The hub piloted mounting system shall be designed to deliver performance and shall include two-piece flange nuts.

### **REAR WHEEL**

The rear wheels shall be Accuride hub piloted, 22.50 inch X 8.25 inch steel wheels. The hub piloted mounting system shall be designed to deliver performance and shall include two-piece flange nuts.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **WHEEL PAINT**

Each of the steel wheels shall be pretreated in a zinc phosphate bath, coated with an acrylic cathode electro deposited white primer base coat (E-Coat). The E-Coat shall exceed 336 hours under industry standard ASTM salt spray testing.

The wheels shall then be finish painted the same as the primary/lower color of the cab by the chassis manufacturer.

### **BRAKE SYSTEM**

A rapid build-up air brake system shall be provided. The air brakes shall include a two (2) air tank, three (3) reservoir system with a total of 4152 cubic inch of air capacity. A floor mounted treadle valve shall be mounted inside the cab for graduated control of applying and releasing the brakes. An inversion valve shall be installed to provide a controlled service brake application during an unlikely event including primary air supply loss.

The rear axle spring brakes shall automatically apply in any situation when the air pressure falls below 25 PSI and shall include a mechanical means for releasing the spring brakes when necessary. An audible alarm shall designate when the system air pressure is below 60 PSI.

A four (4) sensor, four (4) modulator anti-lock braking system (ABS) shall be installed on the front and rear axles in order to prevent the brakes from locking or skidding while braking during hard stops or on icy or wet surfaces. This in turn shall allow the driver to maintain steering control under heavy braking and in most instances, shorten the braking distance. The electronic monitoring system shall incorporate diagonal circuitry which shall monitor wheel speed during braking through a sensor and tone ring on each wheel. A dash mounted ABS lamp shall be provided to notify the driver of a system malfunction. The ABS system shall automatically disengage the auxiliary braking system device when required. The speedometer screen shall be capable of reporting all active defaults using PID/SID and FMI standards.

### **FRONT BRAKES**

The front brakes shall be Meritor 16.5" x 6" S-cam drum type.

### **REAR BRAKES**

The rear brakes shall be Meritor 16.50 inch X 7.00 inch S-cam drum type.

### **PARK BRAKE**

Upon application of the push-pull valve in the cab, the rear brakes will engage via mechanical spring force. This is accomplished by dual chamber rear brakes, satisfying the FMVSS parking brake requirements.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **PARK BRAKE CONTROL**

A Meritor-Wabco manual hand control push-pull style valve shall operate the parking brake system. The control shall be yellow in color.

The parking brake actuation valve shall be mounted on the left hand dash to the right of the steering column within easy reach of the driver.

### **FRONT BRAKE SLACK ADJUSTERS**

The front brakes shall include Meritor automatic slack adjusters shall be installed on the chassis which features a simple, durable design offering reduced weight. The automatic slack adjusters shall feature a manual adjusting nut which cannot inadvertently be backed off and threaded grease fittings for easy serviceability.

### **REAR BRAKE SLACK ADJUSTERS**

The rear brakes shall include Meritor automatic slack adjusters shall be installed on the chassis which features a simple, durable design offering reduced weight. The automatic slack adjusters shall feature a manual adjusting nut which cannot inadvertently be backed off and threaded grease fittings for easy serviceability.

### **AIR DRYER**

The brake system shall include a Wabco System Saver 1200 air dryer with an integral heater with a Metri-Pack sealed connector. The air dryer incorporates an internal turbo cutoff valve that closes the path between the air compressor and air dryer purge valve during the compressor "unload" cycle. The turbo cutoff valve allows purging of moisture and contaminants without the loss of turbo boost pressure. The air dryer shall be located on the right frame rail behind the officer step.

### **FRONT BRAKE CHAMBERS**

The front brakes shall be provided with MGM type 30 brake chambers.

### **REAR BRAKE CHAMBERS**

The rear axle shall include TSE 30/30 brake chambers which shall convert the energy of compressed air into mechanical force and motion. This shall actuate the brake camshaft, which in turn shall operate the foundational brake mechanism forcing the brake shoes against the brake drum. The TSE Type 30 brake chamber shall offer a 30.00 square inch effective area.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **AIR COMPRESSOR**

The air compressor provided for the engine shall be a Wabco<sup>®</sup> SS318 single cylinder pass-through drive type compressor which shall be capable of producing 18.7 CFM at 1200 engine RPMs. The air compressor shall feature a higher delivery efficiency translating to more air delivery per horsepower absorbed. The compressor shall include an aluminum cylinder head which shall improve cooling, reduce weight and decrease carbon formation. Superior piston and bore finishing technology shall reduce oil consumption and significantly increasing the system component life.

### **AIR GOVERNOR**

An air governor shall be provided to control the cut-in and cut-out pressures of the engine mounted air compressor. The governor shall be calibrated to meet FMVSS requirements. The air governor shall be located on the air cleaner bracket on the right frame rail behind the officer step.

### **MOISTURE EJECTORS**

Manual drain valves shall be installed on all reservoirs of the air supply system.

### **AIR SUPPLY LINES**

A dual air system plumbed with color coded reinforced nylon tubing air lines shall be installed on the chassis. The primary (rear) brake line shall be green, the secondary (front) brake line red, the parking brake line orange and the auxiliary (outlet) will be blue.

Brass compression type fittings shall be used on the nylon tubing. All drop hoses shall include fiber reinforced neoprene covered hoses.

### **WHEELBASE**

The chassis wheelbase shall be 195.00 inches.

### **REAR OVERHANG**

The chassis rear overhang shall be 51.00 inches.

### **FRAME**

The frame shall consist of double channel side rails and cross members forming a ladder style frame. The sides of the rails shall be formed in the shape of a "C" channel, 10.25 inches high X 3.50 inches deep upper and lower flanges X .38 inches thick with an inner channel of 9.44 inches high X 3.13 inches deep and .38 inches thick. The high strength low alloy steel shall have a Tensile Elastic Limit of 110,000 psi. Each double rail shall be rated by a Resistance Bending Moment (RBM) minimum of 3,213,100 inch pounds and have a minimum section modulus of 29.21 cubic inches. The frame shall measure 35.00 inches in width.

Proposals calculating the frame strength using the "box method" shall not be considered.

## **STOCK UNIT #14850 CHASSIS SPECIFICATIONS**

Proposals including heat treated rails shall not be considered. Heat treating frame rails produces rails that are not uniform in their mechanical properties throughout the length of the rail. Rails made of high strength, low alloy steel are already at the required yield strength prior to forming the rail.

A minimum of seven (7) fully gusseted 0.25 inch thick cross members shall be installed. The inclusion of the body mounting, or bumper mounting shall not be considered as a cross member. The cross members shall be attached using zinc coated grade 8 fasteners. The head bolts shall be flanged type with distorted threads, held in place by flanged lock nuts. Each cross member shall be mounted to the frame rails utilizing a minimum of 0.25 inch thick gusset reinforcement plates at all corners balancing the area of force throughout the entire frame.

Any proposals not including additional reinforcement for each cross member shall not be considered.

Frame rails will be manufactured such that bolt attachment holes are specific for each component and shall not include any unnecessary holes.

All relief areas shall be cut in with a minimum 2.00 inch radius at intersection points with the edges ground to a smooth finish to prevent a stress concentration point.

The frame and cross members shall carry a lifetime warranty to the original purchaser. A copy of the frame warranty shall be made available upon request.

Proposals offering warranties for frames not including cross members shall not be considered.

### **FRAME WARRANTY**

The frame and cross members shall carry a limited lifetime warranty to the original purchaser. The warranty shall include conditional items listed in the detailed warranty document which shall be provided upon request.

### **MISCELLANEOUS FRAME OPTIONS**

The cross members following the transmission, throughout the length of the frame shall be inverted accommodating additional room for a rear mount pump application.

### **REAR TOW DEVICE**

Two (2) heavy duty painted tow eyes shall be installed extending rearward from the frame at the rear of the chassis. The tow eyes shall be fabricated from 0.75 inch thick #1020 ASTM-36 hot rolled steel. The inside diameter of the tow eye shall be 2.00 inches and shall have a chamfered edge. The tow eyes shall be bolted one (1) on each side to the outside of the chassis frame with grade 8 bolts.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **FRAME PAINT**

The frame shall be powder coated black prior to any attachment of components.

All powder coatings, primers and paint shall be compatible with all metals, pretreatments and primers used. The cross hatch adhesion test per ASTM D3359 shall not have a fail of more than ten (10) squares. The pencil hardness test per ASTM D3363 shall have a final post-curved pencil hardness of H-2H. The direct impact resistance, per ASTM D2794, shall have a direct impact resistance of 120.00 inches per pound at 2 mils. The salt spray resistance per ASTM B-117-97 shall pass 500 hours of salt spray test. The applied process shall allow the application of other products over it and still maintain or exceed the 500 hours salt spray test.

Any proposals offering painted frame with variations from the above process shall not be accepted. The film thickness of vendor supplied parts shall also be sufficient to meet the performance standards as stated above.

### **FRONT BUMPER**

A one piece, two (2) rib wrap-around style, polished stainless steel front bumper shall be provided. The material shall be 10 gauge 304 stainless steel, 12" high and 99" wide.

### **FRONT BUMPER EXTENSION LENGTH**

The front bumper shall be extended 24.00 inches ahead of the cab.

### **FRONT BUMPER EXTENSION WIDTH**

The front bumper extension shall include an overall width of 34.25 inches.

### **AIR HORN**

The front bumper shall include two (2) Grover brand air horns which shall measure 24.50 inches long with a 6.00 inch round flare. The air horn shall be a trumpet style and shall include a chrome finish.

### **AIR HORN LOCATION**

The air horns shall be recess mounted in the front bumper face, one (1) on the driver side of the bumper in the inboard position relative to the left hand frame rail and one (1) on the officer side of the bumper in the inboard position relative to the right hand frame rail.

### **AIR HORN RESERVOIR**

One (1) air tank, with a 1200 cubic inch reservoir, shall be installed on the chassis to act as a supply tank for operating air horns. The reservoir shall be isolated with a 90 PSI pressure protection valve on the reservoir supply side to prevent depletion of the air to the air brake system.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **FRONT BUMPER TOW HOOKS**

Two (2) heavy duty tow hooks, painted black shall be installed below the front bumper, forward position and bolted directly to the outside of each chassis frame rail with grade 8.00 bolts.

### **CAB TILT SYSTEM**

The entire cab shall be capable of tilting 45.00 degrees to allow for easy maintenance of the engine and transmission.

The electric-over-hydraulic lift system shall include an ignition interlock and red cab lock down indicator lamp on the tilt control which shall illuminate when holding the "Down" button to indicate safe road operation.

It shall be necessary to activate the master battery switch and set the parking brake in order to tilt the cab. As a third precaution the ignition switch must be turned off to complete the cab tilt interlock safety circuit.

Two (2) spring-loaded hydraulic hold down hooks located outboard of the frame shall be installed to hold the cab securely to the frame. Once the hold-down hooks are set in place, it shall take the application of pressure from the hydraulic cab tilt lift pump to release the hooks.

Two (2) cab tilt cylinders shall be provided with velocity fuses in each cylinder port. The cab tilt pivots shall be 1.90 inch ball and be anchored to frame brackets with 1.25 inch diameter studs.

A steel safety channel assembly shall be installed on the right side cab lift cylinder to prevent accidental cab lowering. The safety channel assembly shall fall over the lift cylinder when the cab is in the fully tilted position. A cable release system shall also be provided to retract the safety channel assembly from the lift cylinder to allow the lowering of the cab.

### **CAB TILT CONTROL RECEPTACLE**

The cab tilt shall include a receptacle which shall be temporarily located on the right hand chassis rail rear of the cab to provide a place to plug in the cab tilt remote control pendant. The tilt pump shall include 8.00 feet of cable with a 6-pin Deutsch connector that includes a cap. The remote control pendant shall also include 20.00 feet of cable which also includes a mating connector.

### **CAB WINDSHIELD**

The cab windshield shall have a surface area of 2908.00 square inches and be of a two (2) piece wraparound design for maximum visibility.

The distance from the driver and officer to the windshield shall be a minimum of 42.00 inches at the furthest seated position. This distance shall ensure the safety of the driver and officer from intruding objects in the unlikely event of a head on collision.

## **STOCK UNIT #14850 CHASSIS SPECIFICATIONS**

The glass utilized for the windshield a standard automotive tint. The left and right windshield shall be fully interchangeable thereby minimizing stocking and maintenance costs. All proposals offering windshields not in compliance with the minimum measurement of surface area stated above and are not fully interchangeable shall not be considered.

### **GLASS FRONT DOOR**

The front cab doors shall include a window which is 27.00 inches in width X 26.00 inches in height. These windows shall have the capability to roll down completely into the door housing. This shall be accomplished manually utilizing a crank style handle on the inside of the door.

There shall be an irregular shaped fixed window which shall measure 2.50 inches wide at the top, 8.00 inches wide at the bottom X 26.00 inches in height, more commonly known as “cozy glass” ahead of the front door roll down windows.

The windows shall be mounted within the frame of the front doors trimmed with a black anodized ring on the exterior.

### **GLASS TINT FRONT DOOR**

The windows located in the left and right front doors shall have a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

### **GLASS REAR DOOR RH**

The rear right hand side door shall include a window which is 27.00 inches in width X 26.00 inches in height. This window shall roll up and down manually utilizing a crank style handle on the inside of the door.

### **GLASS TINT REAR DOOR RH**

The window located in the right hand side rear door shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

### **GLASS REAR DOOR LH**

The rear left hand side door shall include a window which is 27.00 inches in width X 26.00 inches in height. This window shall roll up and down manually utilizing a crank style handle on the inside of the door.

### **GLASS TINT REAR DOOR LH**

The window located in the left hand side rear door shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

## **STOCK UNIT #14850 CHASSIS SPECIFICATIONS**

### **GLASS SIDE MID RH**

The cab shall include a window on the officer's side behind the front and ahead of the crew doors which shall measure 16.00 inches wide X 26.00 inches high. This window shall be fixed within this space and shall be rectangular in shape. The window shall be mounted using self locking window rubber. The glass utilized for this window shall include a green automotive tint unless otherwise noted.

### **GLASS TINT SIDE MID RH**

The window located on the right hand side of the cab between the front and rear doors shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

### **GLASS SIDE MID LH**

The cab shall include a window on the driver's side behind the front door and ahead of the crew door and above the wheel well which shall measure 16.00 inches wide X 26.00 inches high. This window shall be fixed within this space and shall be rectangular in shape. The window shall be mounted using self locking window rubber. The glass utilized for this window shall include a green automotive tint unless otherwise noted.

### **GLASS TINT SIDE MID LH**

The window located on the left hand side of the cab between the front and rear doors shall include a standard green automotive tint which shall allow seventy-five percent (75%) light transmittance.

### **CLIMATE CONTROL**

The cab shall include a 57,600 BTU @ 425 CFM front overhead heater/defroster which shall be provided and installed above the windshield between the sun visors. The temperature and blower controls shall be located on the heater/defroster unit.

The cab shall also include a combination heater air-conditioning unit mounted on the engine tunnel. This unit shall offer eight (8) adjustable louvers, (4 forward facing , four rearward facing) a temperature control valve and two (2) blowers offering three (3) speeds which shall be capable of circulating 550 cubic feet of air per minute. The unit shall be rated for 36,000 BTU of cooling and 45,000 BTU of heating. The temperature and blower controls shall be located on the heater/air conditioning unit.

All defrost/heating systems shall be plumbed with one (1) seasonal shut-off valve at the front corner on the right side of the cab.

The air conditioning system shall be capable of lowering the cab interior temperature from 100 degrees to 70 degrees within thirty minutes, with a relative humidity of sixty percent.

The air conditioner lines shall be a mixture of custom bent zinc coated steel fittings and 134-A a/c hose with ATCO crimp fittings.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **CLIMATE CONTROL ACTIVATION**

The heating controls, and air conditioning if included, shall be located on the climate control unit.

### **A/C CONDENSER LOCATION**

A roof mounted A/C condenser shall be installed centered on cab forward of raised roof against the slope rise.

### **A/C COMPRESSOR**

The air-conditioning compressor shall be a belt driven, engine mounted, open type compressor that shall be capable of producing a minimum of 13000 BTU at 1500 engine RPMs. The compressor shall utilize R-134A refrigerant and PAG oil.

### **CAB INSULATION**

The cab ceiling and walls shall include 1.00 inch thick foam insulation. The insulation shall include a foil facing which includes grid reinforcement. The insulation shall act as a barrier absorbing noise as well as assisting in sustaining the desired climate within the cab interior.

### **UNDER CAB INSULATION**

The underside of the cab tunnel surrounding the engine shall be lined with foam insulation, engineered for application inside diesel engine compartments.

The foam insulation shall measure .56 inch thick including a 1.0#/sf PVC barrier and a moisture and heat reflective foil backing, reinforced with fiberglass strands. The foil surface acts as protection against moisture and other contaminants.

The insulation shall act as a noise barrier, absorbing noise thus keeping the decibel level in the cab well within NFPA recommendations. And as an additional benefit, the insulation shall assist in sustaining the desired temperature within the cab interior.

The insulation shall be held in place by 3 mils of acrylic pressure sensitive adhesive and aluminum pins with hard hat, hold in place fastening heads.

The foam shall meet or exceed MVSS 302 flammability test.

The foam shall be cut precisely to fit each section and sealed for additional heat and sound deflection.

### **INTERIOR TRIM FLOOR**

The floor of the cab shall be covered with a multi-layer mat consisting of 0.25 inch sound absorbing closed cell foam and a 0.06 inch non-slip vinyl surface with a pebble grain finish. The covering shall be held in place by a pressure sensitive adhesive with aluminum corner trim. All exposed seams shall be sealed with a silicone caulk matching the color of the floor mat to reduce the chance of moisture and debris retention.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **INTERIOR FLOOR MAT COLOR**

The cab interior floor mat shall be gray in color.

### **INTERIOR TRIM VINYL**

The cab interior shall include trim on the front and rear crew ceiling, the cab walls and the rear wall of the cab. The trim shall be constructed of insulated vinyl over a hard board backing. The trim shall be securely fastened to the interior of the cab utilizing snap style fasteners with a decorative cover for a more appealing appearance.

### **INTERIOR TRIM VINYL COLOR**

The cab interior vinyl trim surfaces shall be gray in color.

### **INTERIOR ABS TRIM COLOR**

The cab interior vacuum formed ABS composite trim surfaces shall be gray in color.

### **HEADER TRIM**

The cab interior shall include the header above the driver and officer positions which shall be constructed of vacuum formed ABS panel. The positions shall include robust styling grooves which shall offer durability and additional structure to the panel.

### **INTERIOR TRIM SUNVISOR**

The header shall include two (2) sun visors, one each side forward of the driver and officer seating positions above the windshield. Each sun visor shall be constructed of Masonite and covered with padded vinyl trim.

### **TRIM LH DASH**

The left hand dash shall be a one (1) piece durable vacuum formed ABS composite housing which shall be custom molded for a perfect fit around the instrument panel and the lower control panels to the left and right of the steering column.

### **TRIM CENTER DASH**

The main center dash area shall be constructed of durable vacuum formed ABS composite.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **TRIM RH DASH**

The right hand dash trim shall consist of a vacuum formed ABS composite module, which contains a glove compartment with a hinged locking door and a Mobile Data Terminal (MDT) provision. The glove compartment size shall be 13.50 inches wide X 6.25 inches high X 5.50 inches deep. The MDT provision shall be provided above the glove compartment, recessed approximately 2.25 inches below the surface of the dash and measure 15.70 inches wide X 9.70 inches deep.

### **CAB PAINT INTERIOR**

The interior metal surfaces shall be painted with a Zolatone #20-72 silver gray texture finish.

### **ENGINE TUNNEL TRIM**

The cab engine tunnel shall be covered with .44 of an inch thick multi-layer mat consisting of .25 inch closed cell foam, .13 of an inch thick PVC acoustical barrier and .06 inch thick non-slip pebble grain. The engine tunnel mat shall be trimmed with anodized aluminum stair nosing trim for an aesthetically pleasing appearance.

### **STEP TRIM**

Each cab entry door shall include a three step entry. The first step closest to the ground shall be constructed of polished 5032 H32 aluminum Grip Strut® grating with angled outer corners. The grating shall allow water and other debris to flow through rather than becoming trapped within the stepping surface. The lower step shall be mounted to a frame which is integral with the construction of the cab for rigidity and strength. The middle step shall be integral with the cab construction and shall be trimmed with a Flex-Tred® adhesive grit surface material.

### **INTERIOR DOOR TRIM**

The doors of the cab shall include an aluminum plate the same weight and grade as the cab on the interior of the door. The aluminum shall be then painted.

### **CAB PAINT INTERIOR DOOR TRIM**

The inner door panel surfaces shall be painted with a Zolatone #20-72 silver gray texture finish.

### **DOOR TRIM CUSTOMER NAMEPLATE**

The interior door trim on the front doors shall include a customer nameplate which states the vehicle was custom built for their Department.

### **CAB DOOR TRIM REFLECTIVE**

The interior of each door shall include high visibility reflective tape. A white reflective tape that measures 1.00 inch in width shall be provided vertically along the rear outer edge of the door. The lowest portion of each door skin shall include a reflective tape chevron with red and white stripes and a Spartan logo. The chevron tape shall measure 6.00 inches in height.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **INTERIOR GRAB HANDLE "A" PILLAR**

A rubber covered 11.00 inch grab handle shall be provided on the inside of the cab on the hinge post at the driver and officer doors. The handle shall assist personnel in exiting and entering the cab.

### **INTERIOR GRAB HANDLE FRONT DOOR**

Each front door shall include one (1) ergonomically contoured 9.00 inch cast aluminum handle mounted horizontally on the interior door panels. The handles shall feature a textured black powder coat finish and provide ease of access and exiting the cab.

### **INTERIOR GRAB HANDLE REAR DOOR**

A black powder coated cast aluminum assist handle shall be provided on the inside of each rear crew door the full width of the door below the window glass and shall measure 30 inches in length. The handle shall assist personnel in exiting and entering the cab.

### **DASH PANEL GROUP**

The main center dash area shall include three (3) removable panels located one (1) to the right of the driver position, one (1) in the center of the dash and one (1) to the left of the officer position. The center panel shall be within comfortable reach of both the driver and officer.

### **SWITCHES CENTER PANEL**

The center dash panel shall include six (6) switch positions in the upper left portion of the panel.

A rocker switch with a blank legend installed directly above shall be provided for any position without a switch and legend designated by a specific option. The non-specified switches shall be two-position, black switches with a green indicator light. Each blank switch legend can be custom engraved by the body manufacturer. All switch legends shall have red backlighting provided.

### **SWITCHES LEFT PANEL**

The left dash panel shall include eight (8) switches. There shall be six (6) switches across the top of the panel and two (2) staggered on the left hand portion of the panel. Five (5) of the top row of switches shall be rocker type and the left one (1) shall be the headlight switch. The remaining switches shall consist of one (1) windshield wiper/washer control switch and one (1) instrument lamp dimmer switch.

A rocker switch with a blank legend installed directly above shall be provided for any position not designated by a specific option. The non-designated switches shall be two-position, black switches with a green indicator light. Each blank switch legend can be custom engraved by the body manufacturer. All switch legends shall have red backlighting provided.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **SWITCHES RIGHT PANEL**

The right dash panel shall include no rocker switches or legends.

### **SWITCH PANEL IGNITION**

The vehicle shall be equipped with a keyless ignition and master, with an “Off/ On” and a two switch for “Off/ Start”.

### **SEAT BELT WARNING**

A Class One seat belt warning system, integrated with the Vehicle Data Recorder system, shall be installed for each seat within the cab. The system shall provide visual and audible warning when any seat is occupied (sixty pounds minimum), the corresponding seat belt remains unfastened, and the park brake is released.

Once activated, the visual and audible indicators shall remain active until all occupied seats have the seat belts fastened. The instrument panel shall include an indicator display showing the occupancy of each seat.

### **SEAT MATERIAL**

The seats shall include a covering of high strength, wear resistant fabric made of durable ballistic polyester. A PVC coating shall be bonded to the back side of the material to help protect the seats from UV rays and from being saturated or contaminated by fluids. Common trade names for this material are Imperial 1200 and Durawear.

### **SEAT COLOR**

All seats supplied with the chassis shall be gray in color.

### **SEAT BACK LOGO**

The seat back shall include a black and red capital R representing the Rosenbauer logo. The logo shall be centered on the standard headrest of the seat back and on the left side of a split headrest.

### **SEAT DRIVER**

The driver's seat shall be an H.O. Bostrom Firefighter Sierra model seat. The seat shall feature eight-way electric positioning. The eight positions shall include up and down, fore and aft with 8.00 inches of travel, back angle adjustment and seat rake adjustment. The seat shall feature integral springs to isolate shock.

The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a red, three-point shoulder harness with the lap belt, automatic retractor and buckle as an integral part of the seat assembly.

## **STOCK UNIT #14850 CHASSIS SPECIFICATIONS**

The minimum vertical dimension from the seat H-point to the ceiling for this belted seating position shall be 35.00 inches measured with the seat height adjusted to the lowest position of travel.

This model of seat shall have successfully completed the static load tests set forth by FMVSS 207, 209, and 210 in effect at the time of manufacture. This testing shall include a simultaneous forward load of 3000 pounds each on the lap and shoulder belts and twenty (20) times the weight through the center of gravity.

The materials used in construction of the seat shall also have successfully completed testing with regard to the flammability of materials used in the occupant compartments of motor vehicles as outlined in FMVSS 302, of which dictates the allowable burning rate of materials in the occupant compartments of motor vehicles.

### **SEAT BACK DRIVER**

The driver's seat shall include a standard seat back incorporating the all belts to seat feature (ABTS). The seat back shall feature a contoured head rest.

### **SEAT OFFICER**

The officer's seat shall be a H.O. Bostrom Firefighter series. The seat shall feature a tapered and padded seat, and cushion. The seat shall be mounted in a fixed position.

The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a red, three-point shoulder harness with the lap belt and automatic retractor as an integral part of the seat assembly. The buckle portion of the seat belt shall extend from the seat base towards the driver position within easy reach of the occupant.

The minimum vertical dimension from the seat H-point to the ceiling for this belted seating position shall be 35.00 inches.

This model of seat shall have successfully completed the static load tests by FMVSS 207/210. This testing shall include a simultaneous forward load of 3000 pounds each on the lap and shoulder belts and twenty (20) times the weight through the center of gravity. This model of seat installed in the cab model, as specified, shall have successfully completed the dynamic sled testing using FMVSS 208 as a guide with the following accommodations. In order to reflect the larger size outfitted firefighters, the test dummy used shall be a 95th percentile hybrid III male weighing 225 pounds rather than the 50th percentile male dummy weighing 165 pounds as referenced in FMVSS 208. The model of seats shall also have successfully completed the flammability of materials used in the occupant compartments of motor vehicles as outlined in FMVSS 302, of which decides the burning rate of materials in the occupant compartments of motor vehicles.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **SEAT BACK OFFICER**

The officer's seat shall feature a SecureAll™ SCBA locking system which shall be one bracket model and store all U.S. and International SCBA brands and sizes while in transit or for storage within the seat back. The bracket shall be easily adjustable with all adjustment points using similar hardware and adjustments with one tool.

The bracket system shall be free of straps and clamps that may interfere with auxiliary equipment on SCBA units. The center guide fork shall keep the taken in place for a safe and comfortable fit in the seat back cavity. The SCBA unit simply needs to be pushed against the pivot arm to engage the patented auto- locking system. Once the lock is engaged, the top clamp shall surround the top of the SCBA tank for a secure fit in all directions.

The SecureAll™ shall include a release handle which shall be integrated into the seat cushion for quick and easy release. This shall eliminate the need for straps or pull cords to interfere with other SCBA equipment.

### **POWER SEAT WIRING**

The power seat or seats installed in the cab shall be wired directly to battery power.

### **SEAT REAR FACING OUTER LOCATION**

The crew area shall include two (2) rear facing crew seats, which include one (1) located directly behind the driver seat and one (1) located directly behind the officer seat.

### **SEAT CREW REAR FACING OUTER**

The crew area shall include a seat in the rear facing outboard position which shall be a H.O. Bostrom Firefighter series. The seat shall feature a tapered and padded seat, and cushion. The seat shall be mounted in a fixed position.

The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a red, three-point shoulder harness with the lap belt and automatic retractor as an integral part of the seat assembly. The buckle portion of the seat belt shall extend from the seat base towards the driver position within easy reach of the occupant.

The minimum vertical dimension from the seat H-point to the ceiling for each belted seating position shall be 35.00 inches.

This model of seat shall have successfully completed the static load tests by FMVSS 207/210. This testing shall include a simultaneous forward load of 3000 pounds each on the lap and shoulder belts and twenty (20) times the weight through the center of gravity. This model of seat installed in the cab model, as specified, shall have successfully completed the dynamic sled testing using FMVSS 208 as a guide with the following accommodations. In order to reflect the larger size outfitted firefighters, the test dummy used shall be a 95th percentile hybrid III male weighing 225 pounds rather than the 50th percentile male dummy weighing 165 pounds as referenced in FMVSS 208. The model of seats shall also have successfully completed the flammability of materials used in the occupant compartments of motor vehicles as outlined in

## **STOCK UNIT #14850 CHASSIS SPECIFICATIONS**

FMVSS 302, of which decides the burning rate of materials in the occupant compartments of motor vehicles.

### **SEAT BACK REAR FACING OUTER**

The rear facing outboard seat shall feature a Bostrom SecureAll™ SCBA locking system which shall store all U.S. and International SCBA brands and bottle sizes while in transit or for storage within the seat back. The bracket shall be easily adjustable at all adjustment points with one tool.

The bracket system shall be free of straps, that may interfere with auxiliary equipment on SCBA units. The center guide fork shall keep the SCBA bottle in place for a safe and comfortable fit in the seat back cavity. The SCBA unit simply needs to be pushed against the pivot arm to engage the patented auto-locking system. Once the lock is engaged, the top clamp shall surround the top of the SCBA tank for a secure fit in all directions.

The SecureAll™ shall include a release handle which shall be integrated into the center of the bottom seat cushion for easy access and to eliminate hooking the release handle with clothing or other equipment.

### **SEAT MOUNTING REAR FACING OUTER**

The rear facing outer seat shall be mounted facing the rear of the cab.

### **SEAT BELT ORIENTATION CREW**

The crew position seat belts shall follow the standard orientation which extends from the outboard shoulder extending to the inboard hip.

### **SEAT FRAME FORWARD FACING**

The forward facing center seating positions shall include an enclosed seat frame which is located and installed on the rear wall. The seat frame shall measure 42.38 inches wide X 12.38 inches high X 22.00 inches deep and shall be fully open offering storage within this area. There shall be (2) access points to this storage area, (1) via the driver side of the seat frame and (1) via the officer side of the seat frame. The seat frame shall be constructed of 5052-H32 Marine Grade, .190 inch thick, 100 percent primary smooth aluminum plate. The seat box shall be painted with the same color as the remaining interior.

### **SEAT FRAME FORWARD FACING STORAGE ACCESS**

There shall be two (2) access points to the seat frame storage area which shall be located one (1) on the left side and one (1) on the right side.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **WINDSHIELD WIPER SYSTEM**

The cab shall include a parallel arm wiper system which shall clear the windshield of water, ice and debris. There shall be two (2) windshield wipers, one (1) for the driver and one (1) for the officer, which shall be affixed to a rod style arm. The system shall include dual motors which shall initiate the arms in which both the driver and officer windshield wipers are attached, initiating a back and forth motion for each wiper. The wiper motors shall be activated by an intermittent wiper control located within easy reach of the driver's position.

### **ELECTRONIC WINDSHIELD FLUID LEVEL INDICATOR**

The windshield washer fluid level shall be monitored electronically. When the washer fluid level becomes low the yellow "Check Message Center" indicator light on the instrument panel shall illuminate and the message center in the speedometer shall display a "Check Washer Fluid Level" message.

### **CAB DOOR HARDWARE**

The cab entry doors shall be equipped with exterior pull handles, suitable for use while wearing firefighter gloves. The handles shall be FRP composite with a black matt finish. All doors shall include keyed alike locks that are designed to prevent accidental lockout.

The interior latches shall be black flush paddle type, which are incorporated into an upper door panel.

### **DOOR LOCKS**

Each cab entry door shall include a manually operated door lock. The each door lock may be actuated from the inside of the cab by means of a red knob located on the paddle handle of the respective door or by using a TriMark key from the exterior. The door locks are designed to prevent accidental lock out.

### **GRAB HANDLES**

The cab shall include one (1) 18.00 inch knurled, anti-slip, one-piece exterior assist handle behind each cab door. The grab handle shall be made of 14 gauge 304- stainless steel and be 1.25 inch diameter to enable non-slip assistance with a gloved hand.

### **REARVIEW MIRRORS**

Retrac West Coast style single vision mirror heads model 1171 shall be provided and installed on each of the front cab doors. The mirrors shall be mounted to the cab doors with tubular stainless steel swing away arms and the mirror heads shall be center mounted on the arms to provide rigid mounting to reduce vibration.

The flat mirrors shall measure 7.00 inches wide x 16.00 inches high. A separate lower 8.00 inch round manually adjustable convex mirror model 980-4 shall be provided below the flat mirror for a wider field of vision. The mirror glass shall be held in a plastic housing with a stainless steel back. The mirrors shall be manufactured with the finest quality non-glare glass.

## **STOCK UNIT #14850 CHASSIS SPECIFICATIONS**

The flat mirrors shall be remotely adjustable vertically and horizontally via four way actuation switches. The control switches shall be mounted in the cab with in easy reach of the driver.

### **CAB FENDER**

Full width wheel well liners shall be installed on the extruded cab to limit road splash and enable easier cleaning. The two-piece liners shall consist of an inner liner 16" wide made of vacuum formed ABS composite and an outer fenderette 3.50" wide made of 12 gauge polished aluminum.

### **CAB EXTERIOR MODEL NAMEPLATE**

The cab shall not include any custom model nameplates relative to any specific model.

### **IGNITION**

The master starting system, ignition system shall include chrome thumb turn switch which shall be mounted on the driver side of the cab to the left of the steering wheel on the dash. Each switch will be accompanied by (1) green LED indication light which shall light when the ignition is in the "ON" position and (1) for the master battery switch when in the "ON" position. The thumb turn switches shall also be accompanied by a chrome push button which shall only operate when both the master battery and ignition thumb switches are in the "ON" position.

### **BATTERY**

The single start electrical system shall include (3) Harris BCI 31 950 CCA batteries with a 210 minute reserve capacity and 4/0 welding type dual path starter cables per SAE J541. The cables shall have encapsulated ends with heat shrink and sealant.

### **BATTERY TRAY**

The batteries shall be installed on a steel battery tray located on the left side of the chassis, securely bolted to the frame rails. The battery tray shall be coated with the same material as the frame.

The battery tray shall include drain holes in the bottom for sufficient drainage of water. A durable, non-conducting, interlocking mat made by Dri-Dek shall be installed in the bottom of the tray to allow for air flow and help prevent moisture build up. The batteries shall be held in place by non-conducting phenolic resin hold down boards.

### **BATTERY CABLE**

The starting system shall include cables which shall be protected by 275 degree F. minimum high temperature flame retardant loom, sealed and encapsulated at the ends with heat shrink and sealant.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **BATTERY JUMPER STUD**

The starting system shall include battery jumper studs. These studs shall be located in the forward most portion of the driver's side lower step. The studs shall allow the vehicle to be jump started, charged, or the cab to be raised in an emergency in the event of battery failure.

### **ALTERNATOR**

The starting system shall include a 270 amp Leece Neville 12 volt alternator. The alternator shall include a self-excited integral regulator.

### **HEADLIGHTS**

The cab front shall include (4) rectangular halogen headlamps with separate high and low beams mounted in bright chrome bezels. The headlamps shall be equipped with the "Daytime Running" light feature, which shall illuminate the headlights to 80% brilliance when the ignition switch is in the "On" position and the parking brake is released.

The headlights shall be controlled through a rocker switch on the driver's dash.

### **FRONT TURN SIGNALS**

The front fascia shall include two (2) Whelen model 600 4.00 inch X 6.00 inch halogen amber arrow shaped turn signals which shall be installed outboard of the warning lights. The turn signal light heads shall be mounted in chrome plastic bezels and shall be located above the headlamps.

### **HEADLIGHT LOCATION**

The headlights shall be located on the front fascia of the cab directly below the front warning lights.

### **SIDE TURN/MARKER LIGHTS**

The sides of the cab shall include (2) incandescent round side marker lights which shall be provided just behind the front cab radius corners.

### **MARKER AND ICC LIGHTS**

In accordance with FMVSS, there shall be five (5) cab LED marker lamps designating identification, center and clearance provided. These lights shall be installed on the face of the cab within full view of other vehicles from ground level.

### **GROUND LIGHTS**

Each door shall include an incandescent NFPA compliant ground light mounted to the under side of the cab step below each door. Each light shall include a polycarbonate lens, a housing which is vibration welded and a bulb which shall be shock mounted for extended life. The ground lighting shall be activated by the opening of the door on the respective cab side as well as rocker switched.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **STEP LIGHTS**

The middle step located at each door shall include a NFPA compliant 4.00” round incandescent light which shall activate with the opening of the respective door.

The lights shall have 21 candle power of illumination and draw 1.5 amps.

### **ENGINE COMPARTMENT LIGHT**

There shall be an incandescent NFPA compliant light mounted under the engine tunnel for area work lighting on the engine. The light shall include a polycarbonate lens, a housing which is vibration welded and a bulb which shall be shock mounted for extended life.

### **INTERIOR OVERHEAD LIGHTING**

The cab shall include a two-section incandescent dome lamp with a red and white lens located over each door. The dome lamps shall be rectangular in shape and shall measure approximately 9.50 inches in length X 5.00 inches in width with a black colored bezel. The white portion of each lamp shall be activated by opening the respective door and both the red and white portions can be activated by individual switches on each lamp.

An additional incandescent three (3) light module with dual map lights shall be located over the engine tunnel which can be activated by individual switches on the lamp.

### **DO NOT MOVE APPARATUS LIGHT**

The front headliner of the cab shall include a red flashing light, located in the center for greatest visibility. The light shall be 6.00 inches long X 2.50 inches wide X 1.75 inches high and shall be clearly labeled "Do Not Move Apparatus". In addition to the flashing red light, an audible alarm shall be included which shall sound when a door is open and the parking brake is released.

The light and alarm shall be interlocked for activation when a cab door is not firmly closed, an apparatus cabinet door is not closed and the parking brake is released.

### **MASTER WARNING SWITCH**

The optical warning system shall be controlled by a master switch which shall include all “ON” and all “OFF” capability via a red rocker switch on the main panel. Any warning light switches left in the “ON” position shall activate when the master switch is activated. This switch shall be clearly labeled for identification.

### **INBOARD FRONT WARNING LIGHTS**

The cab front fascia shall include dual Whelen series 600 halogen warning lights which shall offer snap-in halogen lights. The lights shall be mounted to the front fascia of the cab within a chrome bezel in the inboard position.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **INBOARD FRONT WARNING LIGHTS COLOR**

The front warning lights mounted on the fascia for the inboard position shall be red.

### **FRONT WARNING SWITCH**

The front warning lights shall be controlled via rocker switch on the main panel. This switch shall be clearly labeled for identification.

### **HORN RING SELECTOR SWITCH**

A rocker switch shall be installed in the switch panel between the driver and officer to allow control to either the air horn or the electric horn from the steering wheel horn button. The electric horn shall sound by default when the selector switch is in either position which is in accordance with FMVSS requirement.

### **AIR HORN ACTIVATION**

The air horn actuation shall be accomplished by the steering wheel horn button and a right side officer's mounted Linemaster model SP491-S81 foot switch. An air horn activation circuit shall be provided to the chassis harness pump panel harness connector.

### **BACK-UP ALARM**

An ECCO model 575 backup alarm shall be installed at the rear of the chassis with an output level of not less than 107 dB. The alarm shall automatically activate when the transmission is placed in reverse.

### **INSTRUMENTATION**

An ergonomically designed instrument panel shall be provided. The gauges shall be backlit with red LED lamps. All gauges shall be driven by stepper motor movements. The instrumentation system shall be multiplexed and shall receive engine and transmission information over the J1939 data bus to reduce redundant sensors.

The instrument panel shall contain the following gauges:

One (1) electronic tachometer shall be included. The scale on the tachometer shall read from 0 to 3000 RPM.

One (1) electronic speedometer with an integral LCD odometer/ trip odometer and hour meter shall be included. The speedometer shall have a dual scale with miles per hour (MPH) as the dominant scale and kilometers per hour (KPH) on the minor scale. The speedometer scale shall read from 0 to 90 MPH (0 to 140 KPH). The odometer shall display up to 9,999,999.9 miles. The trip odometer shall display up to 9,999.9 miles. The LCD screen shall also be capable of displaying certain diagnostic functions. The hour meter shall display engine hours of operation.

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

One (1) three function gauge with primary system, secondary system and fuel level shall be included. The scale on the air pressure gauges shall read from 0 to 140 pounds per square inch (PSI). The air pressure scales shall be non-linear to expand the scales in the region of normal operation. A red indicator light in the gauge shall indicate a low air pressure. The scale on the fuel level gauge shall read from empty to full. A yellow indicator light shall indicate low fuel at the quarter tank level.

One (1) four function gauge with engine oil pressure, coolant temperature, transmission oil temperature and a voltmeter shall be included. The scale on the engine oil pressure gauge shall read from 0 to 140 pounds per square inch (PSI). The engine oil pressure scale shall be non-linear to expand the scale in the region of normal operation. A red indicator light in the gauge shall indicate low engine oil pressure. The scale on the coolant temperature gauge shall read from 160 to 250 degrees Fahrenheit (F). A red indicator light in the gauge shall indicate high coolant temperature. The scale on the transmission oil temperature gauge shall read from 100 to 300 degrees Fahrenheit (F). A red indicator light in the gauge shall indicate high transmission oil temperature. The scale on the voltmeter shall read from 8 to 16 volts. A red indicator light shall indicate high or low system voltage.

The instrument panel shall contain an Enunciator Module that contains the following indicator lights. All indicator lights shall contain LED lamps.

### **RED LAMPS**

Stop Engine - indicates critical engine fault. (5)

Park Brake - indicates park brake is set.

Volts - indicates high or low system voltage. (4)

Low Oil Press - indicates low engine oil pressure. (4)

High Coolant Temp - indicates excessive engine coolant temperature. (4)

High Trans Temp - indicates excessive transmission oil temperature. (4)

Low Air - indicates low air pressure in either system one or system two. (4)

Low Coolant Level - indicates low engine coolant level. (1) (5)

Air Filter - indicates excessive engine air intake restriction. (5)

Brake System Fault – indicates a failure in the brake system (hydraulic brake systems only). (5)

Seat Belt Indicator – indicates when a seat is occupied and corresponding seat belt remains unfastened.

### **YELLOW LAMPS**

Check Engine - indicates engine fault. (5)

Check Trans - indicates transmission fault. (5)

Wait to Start - indicates active engine air preheat cycle. (2) (5)

ABS - indicates anti-lock brake system fault. (5)

Water in Fuel - indicates presence of water in fuel filter. (1) (5)

Check Message Center – indicates there is a fault message present in the LCD digital display.

SRS – indicates a problem in the RollTek supplemental restraint system. (1) (5)

DPF – indicates a restriction of the diesel particulate filter. (3) (5)

HEST – indicates a high exhaust system temperature. (3) (5)

MIL – indicates an engine emission control system fault. (3) (5)

Low Fuel – indicates low fuel. (4)

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

### **GREEN LAMPS**

Left and Right turn signal indicators.

Aux Brake Active - indicates secondary braking device is active. (1)

High Idle - indicates engine high idle is active. (1)

ATC – indicates low wheel traction for automatic tractions control equipped vehicles, also indicates mud/snow mode is active for ATC system. (1) (5)

OK to Pump – indicates the pump engage conditions have been met. (1)

Pump Engaged – indicates the pump is currently in use. (1)

### **BLUE LAMPS**

High beam indicator.

The instrumentation system shall provide a constant audible alarm for the following situations:

Low air pressure.

Low engine oil pressure.

High engine coolant temperature.

High transmission oil temperature.

Low coolant level. (1)

High or low system voltage

Critical engine fault (Stop Engine).

The Check Message Center icon will illuminate and a message will be displayed in the LCD screen for the following situations:

Cab Ajar

Low Oil Level

Door Ajar

Engine Communication Error

Transmission Communication Error

ABS Communication Error

High Coolant Temp

Turn Signal Reminder (turn signal left on for more than one (1) mile)

Low Fuel

Low Oil Pressure

Low Coolant Level

Low Battery Voltage

High Battery Voltage

Low Primary Air Pressure

Low Secondary Air Pressure

High Trans Temp

The instrumentation system will provide a continuous alarm for the following situations:

Stop Engine

Low Coolant Level (1)

Brake System Fault

Check Trans

Check Engine

ABS

## STOCK UNIT #14850 CHASSIS SPECIFICATIONS

Engine Communications Error  
Transmission Communications Error  
ABS Communications Error  
Low Fuel  
Low Primary Air Pressure  
Low Secondary Air Pressure  
Low or High Battery Voltage  
High Trans Temp  
Low Oil Pressure  
High Coolant Temp

The instrumentation system will provide a 160 millisecond second alarm every 880 milliseconds for the following situations:

Seat Belt  
Air Filter  
Water in Fuel (1)  
Cab Ajar  
Low Oil Level  
Door Ajar

The instrumentation system will provide a 160 millisecond second alarm every 5 seconds for the following situation:

Turn Signal Reminder (turn signal left on for more than one (1) mile)

- (1) *Feature only available when optionally equipped.*
- (2) *Feature only available on engines with pre-heat capability.*
- (3) *Feature only on vehicles with diesel particulate filter (DPF).*
- (4) *Warning light is present in gauge.*
- (5) *A message in the LCD screen will also be displayed.*

### **CAB EXTERIOR PROTECTION**

The cab face shall have a removable plastic film installed over the painted surfaces to protect the paint finish during transport to the body manufacturer.

### **FIRE EXTINGUISHER**

A 2.50 pound D.O.T approved fire extinguisher with BC rating shall be shipped loose with the cab.

### **DOOR KEYS**

The cab and chassis shall include a total of four (4) door keys for the manual door locks.

### **AS BUILT WIRING DIAGRAMS**

The cab and chassis shall include one (1) complete set of wiring schematics and option wiring diagrams.

## **STOCK UNIT #14850 CHASSIS SPECIFICATIONS**

### **WARRANTY - CAB AND CHASSIS**

The chassis manufacturer shall provide a limited parts and labor warranty to the original purchaser of the custom built cab and chassis for a period of twelve (12) months, or the first 24,000 miles, whichever occurs first. The warranty period shall commence on the date the vehicle is delivered to the end user. The warranty shall include conditional items listed in the detailed warranty document which shall be provided upon request.

### **OPERATORS AND PARTS LIST MANUAL**

There shall be one (1) chassis operator's manual which includes a parts list. Also, wiring and air plumbing diagrams shall be provided as well as a list of any parts or equipment that is shipped loose with the vehicle. All standard wiring and plumbing diagrams shall be created specifically to the chassis model.

### **ENGINE AND TRANSMISSION OPERATION MANUALS**

There shall be one (1) set of engine operation and maintenance manuals and one (1) set of transmission operation manuals specific to the models ordered included with the final vehicle in the ship loose items.

**STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

CENTER OF GRAVITY

The apparatus, prior to acceptance, will be required to meet the vehicle stability of the applicable NFPA Automotive Fire Apparatus Standard.

A calculated center of gravity shall be provided. The calculated or measured center of gravity (CG) shall be no higher than 80-percent of the rear axle track width.

One (1)

BUMPER TO BUMPER WARRANTY

We warrant each new motorized fire apparatus manufactured by ROSENBAUER AMERICA, LLC for a period of ONE YEAR from the date of delivery, except for chassis and other components noted herein.

Under this warranty we agree to furnish any parts to replace those that have failed due to defective material or workmanship where there is no indication of abuse, neglect, unusual or other than normal service providing that such parts are, at the option of ROSENBAUER AMERICA, LLC, made available for our inspection at our request, returned to our factory or other location designated by us with transportation prepaid within thirty days after the date of failure or within one year from the date of delivery of the apparatus to the original purchaser, whichever occurs first, and inspection indicates the failure was attributed to defective material or workmanship.

The warranty on the chassis and chassis supplied components, storage batteries, generators, electrical lamps and other devices subject to deterioration is limited to the warranty of the manufacturer thereof and adjustments for the same are to be made directly with the manufacturer by the customer.

This warranty will not apply to any fire apparatus that has been repaired or altered outside our factory in any way, which in our opinion might affect its stability or reliability.

This warranty shall not apply to those items that are usually considered normal maintenance and upkeep services: including, but not limited to, normal lubrication or proper adjustment of minor auxiliary pumps or reels.

This warranty is in lieu of all other warranties, expressed or implied, and all other obligations or liabilities on our part. We neither assume nor authorize any person to assume for us any liability in connection with the sales of our apparatus unless made in writing by ROSENBAUER AMERICA, LLC.

One (1)

STAINLESS STEEL BODY WARRANTY - TEN YEAR

Rosenbauer America, LLC warrants to the original purchaser only, that the all stainless steel body, fabricated by Rosenbauer America, LLC, under normal use and with reasonable maintenance, be structurally sound and will remain free from corrosion perforation for a period of TEN (10) years.

## STOCK UNIT #14850 BODY SPECIFICATIONS

This warranty does not apply to the following items that are covered by a separate warranty: paint finish, hardware, moldings, and other accessories attached to this body. In addition, this warranty does not apply to any part or accessory manufactured by others and attached to this body.

ROSENBAUER AMERICA, LLC MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO THE STAINLESS STEEL BODY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND HEREBY DISCLAIMED.

Rosenbauer America, LLC will replace without charge, repair or make a fair allowance for any defect in material or workmanship demonstrated to its satisfaction to have existed at the time of delivery or not due to misuse, negligence, or accident. If Rosenbauer America, LLC elects to repair this body, the extent of such repair shall be determined solely by Rosenbauer America, LLC, and shall be performed solely at the Rosenbauer America, LLC factory, or at an approved facility. The expense of any transportation to or from such repair facility shall be borne by the purchaser and is not an item covered under this warranty.

Rosenbauer America, LLC will not be liable for consequential damages and under no circumstances will its liability exceed the price for a defective body. The remedies set forth herein are exclusive and in substitution for all other remedies to which the purchaser would otherwise be entitled.

Rosenbauer America, LLC will be given a reasonable opportunity to investigate all claims. The purchaser must commence any action arising out of, based upon or relating to agreement or the breach hereof, within twelve months from the date the cause of the action occurred.

Note: Surety bond, if required, will cover standard one year warranty period only and will not cover any extended warranties allowed by seller or other component manufacturers.

One (1)

### SUBFRAME WARRANTY

Subject to the provisions, limitations and conditions set forth in this warranty, Rosenbauer America, LLC (hereby referred to as "seller"), hereby warrants to each original purchaser only that each new body subframe (exclusive of paint finish and hardware) is structurally sound and free of all structural defects of both material and workmanship and further warrants that it will maintain such structural integrity for a period of twenty (20) years of ownership by the original purchaser. This warranty terminates upon transfer of possession or ownership by original purchaser.

This warranty is conditioned upon normal use and reasonable maintenance of such subframe; prompt written notice of all defects to seller or one of the seller's then authorized dealers in the area; no repair or additions there to except by seller or authorized by it; said defect not resulting from misuse, negligence, accident, remount, overloading beyond applicable weight rating by customer or third

## STOCK UNIT #14850 BODY SPECIFICATIONS

parties. If any such conditions are not complied with, this warranty shall become void and unenforceable.

Should repairs become necessary under the terms or the warranty, the extent of that repair shall be determined solely by the seller and shall be performed solely at Rosenbauer America, LLC or a repair facility designated by the seller. The expense of any transportation to or from such repair facility shall be that of the purchaser and is not an item covered by this warranty.

Seller reserves the unrestricted right at any time from time to time to make changes in the design of and/or improvements on its products without thereby imposing any obligation on itself to make corresponding changes or improvements in or on its products theretofore manufactured.

**EXCLUSIONS AND LIMITATIONS: THIS MANUFACTURER'S WARRANTY IS PROVIDED IN PLACE OF ANY AND ALL OTHER REPRESENTATIONS OR IMPLIED WARRANTIES. NO PERSON IS AUTHORIZED TO MAKE ANY REPRESENTATIONS OR WARRANTY ON BEHALF OF ROSENBAUER AMERICA, LLC OR ANY OF ITS DISTRIBUTORS OTHER THAN SET FORTH IN THIS MANUFACTURER'S WARRANTY. YOUR RIGHT TO SERVICE AND REPLACEMENT OF PARTS ON THE TERMS EXPRESSLY SET FORTH HERIN ARE YOUR EXCLUSIVE REMEDIES AND NEITHER THE MANUFACTURER NOR ANY OF ITS DISTRIBUTORS SHALL BE LIABLE FOR DAMAGES, WHETHER ORDINARY, INCIDENTAL OR CONSEQUENTIAL.**

Note: Surety bond, if required, will cover standard one year warranty period only and will not cover any extended warranties allowed by seller or other component manufacturers.

One (1)

### PAINT WARRANTY FIVE YEAR

The PPG paint performance guarantee will cover the areas of the vehicle finished with the specified product for a period of FIVE (5) years beginning the day the vehicle is delivered to the purchaser.

The areas as outlined on the guarantee certificate will be covered for the following paint failures:

#### Guarantee Inclusions:

Full apparatus body manufactured and painted by Rosenbauer America. LLC:

1. Peeling or delaminating of the topcoat and/or other layers of paint.
2. Cracking or checking.
3. Loss of gloss caused by cracking, checking, or hazing.

## STOCK UNIT #14850 BODY SPECIFICATIONS

4. Any paint failure caused by defective PPG Fleet Finishes, which are covered by this guarantee.

All guarantee exclusions, limitations, and methods of claims are covered in the full certificate provided to the original purchaser.

Note: Surety bond, if required, will cover standard one year warranty period only and will not cover any extended warranties allowed by seller or other component manufacturers.

One (1)

### PUMP WARRANTY

Rosenbauer America, LLC (Rosenbauer) warrants, to the original buyer only, that products and parts manufactured by Rosenbauer America, LLC will be free from defects in material and workmanship under normal use and service for a period of two (2) years from the date the product is first placed in service, or one and one half years from the date of shipment by Rosenbauer America, LLC, whichever period will be the first to expire; provided the buyer notifies Rosenbauer in writing, of the defect in said product within the warranty period, and said product is found by Rosenbauer America to be conforming with the aforesaid warranty.

When required in writing by Rosenbauer, defective products must be promptly returned by the buyer to the Rosenbauer plant or at such other place as may be specified by Rosenbauer with transportation and other charges prepaid. A Return Goods Authorization (RGA) is required for all products and parts and may be requested by phone, fax or mail. The aforesaid warranty excludes any responsibility or liability of Rosenbauer America, LLC for:

A. Damages or defects due to accident, abuse, misuse, abnormal operating conditions, negligence, accidental causes or improper maintenance, or attributable to written specifications or instructions furnished by buyer;

B. Defects in products manufactured by others and furnished by Rosenbauer America hereunder, it being understood and agreed by the parties that the only warranty provided for such products shall be the warranty provided by the manufacturer thereof which, if assignable, Rosenbauer America will assign to the buyer, if requested by Buyer;

C. Any product or part, altered, modified, serviced or repaired other than by Rosenbauer America, without its prior written consent.

D. The cost of dismantling, removing, transporting, storing, or insuring the defective product or part and the cost of reinstallation.

E. Normal wear items (packing, strainers, filters, light bulbs, anodes, intake screens, etc.)

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

All other warranties are excluded, whether expressed or implied by operation of law or otherwise, including all implied warranties of merchantability or fitness for purpose. Rosenbauer America shall not be liable for consequential or incidental damages directly or indirectly arising or resulting from breach of any of the terms of this limited warranty or from the sale, handling, or use of any other product or part. Rosenbauer America liability hereunder, either for breach of warranty or for negligence, is expressly limited at Rosenbauer America option:

A. To the replacement at the agreed point of delivery of any product or part, which upon inspection by Rosenbauer America or its duly authorized representative, is found not to conform to the limited warranty set forth above, or

B. To the repair of such product or part, or

C. To the refund or crediting to buyer of the net sales price of the defective product or part.

Buyer's remedies contained herein are exclusive of any other remedy otherwise available to the buyer.

One (1)

### **STAINLESS STEEL PLUMBING WARRANTY**

Subject to the provisions, limitations and conditions set forth in this warranty, Rosenbauer America, LLC (hereby referred to as "seller"), hereby warrants to each original purchaser only that stainless steel plumbing components and ancillary brass fittings used in the construction of the water/foam plumbing system shall be warranted for a period of ten (10) years. This covers structural failures caused by defective design or workmanship, or perforation caused by corrosion, provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original purchaser for a period of ten years from the date of the delivery and shall terminate upon the transfer of possession or ownership by original purchaser.

This warranty is conditioned upon normal use and reasonable maintenance of such plumbing; prompt written notice of all defects to seller or one of the seller's then authorized dealers in the area; no repair or additions there to except by seller or authorized by it; said defect not resulting from misuse, negligence, accident, remount, overloading beyond applicable weight rating by customer or third parties. If any such conditions are not complied with, this warranty shall become void and unenforceable.

Should repairs become necessary under the terms or the warranty, the extent of that repair shall be determined solely by the seller and shall be performed solely at Rosenbauer America, LLC or a repair facility designated by the seller. The expense of any transportation to or from such repair facility shall be that of the purchaser and is not an item covered by this warranty.

## STOCK UNIT #14850 BODY SPECIFICATIONS

Seller reserves the unrestricted right at any time from time to time to make changes in the design of and/or improvements on its products without thereby imposing any obligation on itself to make corresponding changes or improvements in or on its products theretofore manufactured.

EXCLUSIONS AND LIMITATIONS: THIS MANUFACTURER'S WARRANTY IS PROVIDED IN PLACE OF ANY AND ALL OTHER REPRESENTATIONS OR IMPLIED WARRANTIES. NO PERSON IS AUTHORIZED TO MAKE ANY REPRESENTATIONS OR WARRANTY ON BEHALF OF ROSENBAUER AMERICA, LLC OR ANY OF ITS DISTRIBUTORS OTHER THAN SET FORTH IN THIS MANUFACTURER'S WARRANTY. YOUR RIGHT TO SERVICE AND REPLACEMENT OF PARTS ON THE TERMS EXPRESSLY SET FORTH HERIN ARE YOUR EXCLUSIVE REMEDIES AND NEITHER THE MANUFACTURER NOR ANY OF ITS DISTRIBUTORS SHALL BE LIABLE FOR DAMAGES, WHETHER ORDINARY, INCIDENTAL OR CONSEQUENTIAL.

One (1)

### COMPLETE PRINTED MANUAL

ROSENBAUER shall provide with the vehicle upon delivery, one (1) complete delivery manual. This manual shall be in a notebook type binder, with reference tabs for each section of the vehicle. A companion compact disk (CD) with all of the printed material in an electronic format (Adobe Acrobat PDF) shall be provided.

Within each section shall be:

1. Individual component manufacturer instruction and parts manuals
2. Warranty forms for the body
3. Warranty forms for all major components
4. Warranty instructions and format to be used in compliance with warranty obligations
5. Wiring diagrams
6. Installation instruction and drawings for major parts
7. Visual graphics and electronic photos for the installation of major parts
8. Necessary normal routine service forms, publications and components of the body portion of the apparatus
9. Technical publications for training and instruction on major body components
10. Warning and safety related notices for personnel protection
11. Cab and chassis manuals on parts, service and maintenance shall be provided

One (1)

### "ON-LINE" SERVICE MANUAL SUPPORT

As part of the standard delivery manual, ROSENBAUER shall give a password-protected link to the end user, allowing access to the manufacturers' database on service parts. The internet-based system shall allow the end user to access the major component supplier's service parts listing such as Hale, Waterous, Akron, etc. This shall be accomplished with simplistic point and click features on the manufacturer line item within the "stripper" or "line item sheet". This will

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

include, automatic updates, printable schematics and manufacturer's web links and is available in the commercially available format of Adobe Acrobat Reader to access these documents. Rosenbauer America, LLC shall submit with the bid proposal, a sample set of on line Adobe formatted material that has been printed from the manufacturers website.

### Parts Listings within Manuals

The manuals will include cross-reference part numbers from the ROSENBAUER part number to the vendor parts. Example: ROSENBAUER Hydraulic Ladder Rack, Part #LR-MN-0002 cross-referenced to Ziamatic Corporation Part 098-MN2345. This will allow for reference between individual parts and complete installation assemblies as completed by the body builder. The manuals will list all components of the vehicle that includes a vendor part utilized in a complete installation via the manufacturers "line item sheet" or "stripper" utilized to manufacture the completed vehicle. These are "As Built" and proposals with "typical" or "generic" manuals will be rejected.

### Illustrative Schematics within Manuals

ROSENBAUER shall include installation diagrams and drawings of all major sub assemblies. This will include components such as hydraulic ladder rack assemblies, pump panels, tanks, fire pumps, etc. The drawings shall be linked via an Internet based service program, in an electronic format from the manufacturers "stripper" (line item listing) of the manufacturing document. ROSENBAUER shall submit, upon request, a sample schematic.

### Digital Images within Manuals

In addition to two and three-dimensional installation drawings, ROSENBAUER shall make accessible, via an internet based link, the actual photos of the installed components listed within the "stripper" or line sheet. This will include, but not limited to wiring terminals, main body distribution strips, fire pump shifting, auxiliary components, etc. ROSENBAUER shall submit a sample of these upon request.

### Installation Instructions within Manuals

ROSENBAUER "work instructions" or "installation instructions" shall be included with the service manuals. These documents shall be accessible via a web-based link to the individual vehicle manufactured. The work instructions shall give systematic instructions of the component installation process. ROSENBAUER shall submit, upon request, a sample set of instructions.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

### Automatic Updates of Manuals and Parts Listings

The online manuals will include automatic updates that are accessible via the web link. When clicking on the part within the manufacturers stripper or line sheet, it will allow the end user to access the component manufacturer website for updated information. This will allow for latest parts and service components from the individual part manufacturer or vendor.

### Electrical Schematics

To maintain the vehicles electrical systems, the manufacturer shall provide to the purchaser the instructional manuals, complete electrical information and schematics on the vehicle. The electrical information shall be provided as follows:

#### Wiring Systems 12 and 120 Volt:

1. Graphic symbols for electrical diagrams.
2. Wire labeling, imprinting codes and index.
3. Computer generated electrical schematics indicating the circuit number, wire size, switches, circuit breaker and terminals on the vehicle.

ROSENBAUER shall submit, upon request, a sample set of diagrams.

One (1)

### SPARTAN CUSTOM CHASSIS

A Spartan custom fire truck chassis shall be furnished with the following apparatus body and equipment. See attached specifications for exact chassis configuration.

One (1)

### FLUID DATA PLAQUE

One (1) fluid data plaque containing required information shall be provided based on the applicable components for this apparatus, compliant with NFPA Standards:

1. Engine oil
2. Engine coolant
3. Chassis transmission fluid
4. Drive axle lubricant
5. Power steering fluid
6. Pump transmission lubrication fluid
7. Paint manufacturer and color numbers
8. Other NFPA applicable fluid levels or data as required

Location shall be in the driver's compartment or on driver's door.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### APPARATUS DIMENSION DATA

One (1) highly visible label indicating the overall height, length, width and weight of the vehicle shall be installed in the cab dash area.

One (1)

### NO RIDE LABEL

One (1) "NO RIDERS" label shall be applied on the vehicle at the rear step area or other applicable areas. The label shall warn personnel that riding in or on these areas, while the vehicle is in motion is prohibited.

One (1)

### CAB SEATING POSITION LIMITS

One (1) label shall be installed in the cab to indicate seating positions for firefighters. A weight allowance of 250 pounds for each shall be factored into the gross vehicle weight rating of the chassis.

One (1)

### HELMET WARNING TAG

One (1) label shall be installed in the cab, visible from each seating position. The label shall read "DO NOT WEAR HELMET WHILE SEATED."

One (1)

### REAR TOWING PROVISIONS

There shall be two tow eyes furnished under the rear of the body and attached directly to each chassis frame rail. There shall be a reinforcement spreader bar connecting the two tow eyes. Tow eyes are to be constructed of 3/8" plate steel with a 4" I.D. hole, large enough for passing through a tow chain end hook.

One (1)

### TOW PLATE PAINTING

The tow plates shall be painted black.

One (1)

### FRONT BUMPER GRAVELSHIELD

A 24" front to rear filler panel constructed from NFPA compliant, slip resistant aluminum tread plate shall be provided on the front chassis frame extension. The extension shall be covered on the top and sides, up to the level of front bumper and shall be reinforced to support one (1) firefighter (approximately 250 pounds) and the equipment specified to be installed.

One (1)

### STAINLESS STEEL WHEEL COVERS

The front and rear outer wheels of the single rear axle apparatus shall have Real Wheels, mirror finish stainless steel full wheel covers complete with stainless steel hub and lug nut covers. The rear wheels shall be furnished with braided stainless steel air valve extensions.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### **TIRE PRESSURE INDICATOR**

There shall be a tire pressure indicator at each tire's valve stem on the vehicle that shall indicate if there is insufficient pressure in the specific tire.

One (1)

### **EXHAUST SYSTEM**

The chassis exhaust shall be modified and redirected to the right side of the apparatus and will exit ahead of the rear wheel.

One (1)

### **EXHAUST HEAT SHIELD**

A heat shield shall be installed under the body in the areas where the exhaust system is routed.

One (1)

### **FRONT MUD FLAPS**

One (1) pair of black mud flaps shall be installed behind the front wheels.

One (1)

### **REAR MUD FLAPS**

One (1) pair of black mud flaps shall be installed behind the rear wheels.

One (1)

### **INTERIOR CABINET**

There shall be one (1) full height storage cabinet installed on the back wall of the interior cab. The cabinet shall be constructed of smooth aluminum plate. The cabinet shall have approximate interior dimensions of 36" Wide x 18" Deep x Full Height.

Three (3) vertically adjustable shelves shall be installed in the cabinet. The shelves shall be constructed of smooth aluminum plate. Each shelf shall have a 1" front bend for added strength.

The shelves shall be mounted with extruded aluminum adjustable shelf track attached to the walls and secured with aluminum brackets to the tracks to allow for vertical height adjustment.

The cabinet shall be equipped with a roll-up door constructed of anodized aluminum.

One (1)

### **DOOR LOCKS**

A cylindrical door lock shall be provided on the roll up door(s). The door lock shall operate a rod mechanism located within the bottom rail of the door that extends into both side rails when locked.

## STOCK UNIT #14850 BODY SPECIFICATIONS

Three (3)

### ADDITIONAL COMPARTMENT LIGHT

Three (3) additional sealed light shall be provided and installed for compartments with shelves, as directed by the Fire Department. The additional lights shall be mounted to a bracket attached to the unistrut shelf standard. Lights mounted to the shelf brackets shall have additional wire to allow the light to be adjusted with the shelf. Lights shall be wired to switch on and off with the automatic door jamb switch.

One (1)

### ROSENBAUER NH55 FIRE PUMP

A Rosenbauer Model NH55 fire pump shall be mounted and installed. The midship combination normal and high pressure pump system shall have a rated capacity of 1250 GPM and shall meet all applicable sections of NFPA standards. The pump shall be constructed and mounted in accordance with the following specifications.

Pump shall deliver the percentage of rated discharge at pressures indicated below:

100% of rated capacity at 150 pounds net pressure  
70% of rated capacity at 200 pounds net pressure  
50% of rated capacity at 250 pounds net pressure  
100% of rated capacity at 165 pounds net pressure

#### Pump Body

The pump shall incorporate a high pressure, three-stage pump. The high-pressure side shall be capable of developing 100 GPM at 600 PSI simultaneously while pumping the rated volume specified above.

The main pump body shall be easily removable without disturbing setting of the pump on the chassis or engine. The pump body is to be of high quality seawater resistant light alloy. All parts that come into contact with water shall be special treated light alloy or stainless steel.

The pump manufacturer shall test the pump for 10 minutes hydrostatically at a pressure of 500 PSIG. Hydrostatic certification by the pump manufacturer shall be provided.

#### Impeller and Shaft

The high-grade light alloy impellers shall be accurately balanced and mounted on a stainless steel pump shaft. The shaft shall be supported by three roller bearings; two located in the gearbox and one in the suction inlet. Bearings shall be protected from water and sediment by maintenance free self-adjusting mechanical seals.

## STOCK UNIT #14850 BODY SPECIFICATIONS

### Pump Drive System

Fire pump shall incorporate high strength helical gear drive single stage transmission. Pump drive system shall be with a heavy-duty PTO system bolted directly to the chassis transmission. There shall be a heavy-duty drive shaft furnished from the PTO to the midship pump transmission.

One (1)

### PUMP WARRANTY

Rosenbauer America, LLC (Rosenbauer) warrants, to the original buyer only, that products and parts manufactured by Rosenbauer America, LLC will be free from defects in material and workmanship under normal use and service for a period of two (2) years from the date the product is first placed in service, or one and one half years from the date of shipment by Rosenbauer America, LLC, whichever period will be the first to expire; provided the buyer notifies Rosenbauer in writing, of the defect in said product within the warranty period, and said product is found by Rosenbauer America to be conforming with the aforesaid warranty.

When required in writing by Rosenbauer, defective products must be promptly returned by the buyer to the Rosenbauer plant or at such other place as may be specified by Rosenbauer with transportation and other charges prepaid. A Return Goods Authorization (RGA) is required for all products and parts and may be requested by phone, fax or mail. The aforesaid warranty excludes any responsibility or liability of Rosenbauer America, LLC for:

A. Damages or defects due to accident, abuse, misuse, abnormal operating conditions, negligence, accidental causes or improper maintenance, or attributable to written specifications or instructions furnished by buyer;

B. Defects in products manufactured by others and furnished by Rosenbauer America hereunder, it being understood and agreed by the parties that the only warranty provided for such products shall be the warranty provided by the manufacturer thereof which, if assignable, Rosenbauer America will assign to the buyer, if requested by Buyer;

C. Any product or part, altered, modified, serviced or repaired other than by Rosenbauer America, without its prior written consent.

D. The cost of dismantling, removing, transporting, storing, or insuring the defective product or part and the cost of reinstallation.

E. Normal wear items (packing, strainers, filters, light bulbs, anodes, intake screens, etc.)

## STOCK UNIT #14850 BODY SPECIFICATIONS

All other warranties are excluded, whether expressed or implied by operation of law or otherwise, including all implied warranties of merchantability or fitness for purpose. Rosenbauer America shall not be liable for consequential or incidental damages directly or indirectly arising or resulting from breach of any of the terms of this limited warranty or from the sale, handling, or use of any other product or part. Rosenbauer America liability hereunder, either for breach of warranty or for negligence, is expressly limited at Rosenbauer America option:

A. To the replacement at the agreed point of delivery of any product or part, which upon inspection by Rosenbauer America or its duly authorized representative, is found not to conform to the limited warranty set forth above, or

B. To the repair of such product or part, or

C. To the refund or crediting to buyer of the net sales price of the defective product or part.

Buyer's remedies contained herein are exclusive of any other remedy otherwise available to the buyer.

One (1)

### ENGINE/PUMP GOVERNOR

The apparatus shall be equipped with one (1) Class 1 "Captain" engine/pump governor/throttle system. The OEM shall supply and install the unit directly to the Electronic Control Module (ECM) mounted on the engine. The "Captain" is to operate as a pressure sensing governor .

A special preset feature shall permit a predetermined pressure or RPM to be set. The preset shall be easily adjustable by the operator.

One (1)

### ENGINE MONITOR

The apparatus shall be equipped with one (1) Class1 ENFO IV Engine Information Display and be installed on the pump panel. The ENFO IV shall provide engine RPM, system voltage display and alarm, engine oil pressure display and alarm, and engine temperature display and alarm. The ENFO IV is available in either English or Metric and uses the SAE J-1939 data bus for its information and does not require any additional sensors to be mounted.

One (1)

### PRIMER SYSTEM

The fire pump primer system shall be a positive displacement double piston type that is driven by a belt from the input shaft of the fire pump. The pump shall be lubricated from an oil reservoir but shall not oil or discharge oil in the exhaust. Primers that use 12 volt electricity to drive the primer shall not be acceptable due to voltage loss on the electrical system.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

The primer system shall be a "hands off" automatic style primer that, when engaged for drafting operations shall be able to be left unattended for the duration of the drafting operation. Once pump pressure of approximately 5 PSI is achieved, the primer shall disengage. When the pump pressure drops below 5 PSI the primer shall re-engage itself to re-prime the fire pump.

This feature adds to the safety of fire fighters by automatically keeping the pump primed and allows the pump operator to assist in other duties on the fire scene. Primers that do have this automatic feature will not be acceptable, no exceptions.

One (1)

### **PTO FIRE PUMP SHIFT -- STATIONARY PUMPING**

The Rosenbauer power-take-off driven fire pump shall be equipped with a Hot-Shift electrically operated PTO engagement in the cab.

The system shall include applicable the NFPA standard interlocks, pump shift and OK TO PUMP indicator lights in the cab and pump panel. The fire pump system shall be equipped with an interlock system shall be provided to ensure that the pump drive system components are properly engaged in the pumping mode of operation so that the pumping system can be safely operated from the pump operator's position in a stationary pumping mode.

One (1)

### **HIGH PRESSURE VALVE**

A 1 1/2" electrically operated valve shall be provided to feed the high pressure manifold. The specified valve shall be an Akron 8800 Series one and one half-inch (1-1/2") valve with a stainless ball. The valve shall be equipped with a KZCO KZ Valve Model EH-2 12 volt electric actuator. The valve control shall be push button or rocker type switch with indicator light provided. When the valve is open, the indicator light shall illuminate. When the valve is closed the indicator light shall be off. The valve shall be controlled from the cab and rear of truck and shall be properly labeled.

One (1)

### **PLUMBING - HIGH PRESSURE SIDE**

The high pressure side of the Rosenbauer pump shall be plumbed to the hose reel.

One (1)

### **PUMP ANODES**

One (1) pair of replaceable corrosion-protection anodes shall be provided, one (1) on the discharge and one (1) on the intake side of the pump.

One (1)

### **PUMP PLUMBING SYSTEM**

The fire pump plumbing system shall be of rigid or flexible piping with stainless steel fittings. Victaulic couplings shall be installed to permit flexing of the plumbing system and allow for quick removal of piping or valves for service. Flexible hose couplings shall be threaded stainless steel or Victaulic connections.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

The fire pump and plumbing shall be hydrostatically tested in compliance to applicable sections of NFPA standards, with test results submit with the delivery documentation.

One (1)

### **FIRE PUMP MASTER DRAIN**

The fire pump plumbing system and fire pump shall be piped to a single pump panel mounted 'handwheel' type master pump drain assembly. The master drain valve shall be a bronze master drain with a rubber disc seal, a universal joint and a handwheel control on the pump panel. The master drain shall also provide for low point drainage of the fire pump and auxiliary devices.

### **ADDITIONAL LOW POINT DRAINS**

The plumbing system shall be equipped with additional low point manually operated drain valves to allow total draining of the fire pump plumbing system. These valves shall be accessible from the side of the vehicle and labeled for exact location.

One (1)

### **STAINLESS STEEL INTAKE MANIFOLD**

The suction manifold assembly shall be fabricated with Schedule #10 type 304 stainless steel. All threaded fittings shall be a minimum of Schedule 10 stainless steel. The suction manifold assembly shall have radiused sweep elbows to minimize water turbulence into the suction volute. The suction manifold shall be welded and pressure tested prior to installation. The stainless steel manifold assembly shall be attached to the pump intake volute with a heavy-duty, flexible Victaulic coupling.

The stainless steel manifold assembly shall have a ten (10) year warranty.

One (1)

### **STAINLESS STEEL DISCHARGE MANIFOLD**

The discharge manifold assembly shall be fabricated with Schedule #10 type 304 stainless steel. All threaded fittings shall be a minimum of Schedule 10 stainless steel. The discharge manifold assembly shall have radiused sweep elbows to minimize water turbulence into the discharge header. The manifold shall be welded and pressure tested prior to installation. The stainless steel manifold assembly shall be attached to the pump intake volute with a heavy-duty, flexible Victaulic coupling.

The stainless steel manifold assembly shall have a ten (10) year warranty.

One (1)

### **FIRE PUMP & PLUMBING SYSTEM PAINTING**

The fire pump and plumbing system shall be painted by the fire apparatus manufacturer. The fire pump and the plumbing shall be painted metallic silver.

## STOCK UNIT #14850 BODY SPECIFICATIONS

One (1)

### HOSE THREADS

The hose threads shall be National Standard Thread (NST) on all base threads on the apparatus intakes and discharges.

One (1)

### LEFT SIDE -- 6" UNGATED INTAKE

One (1) 6" ungated suction intake shall be installed on the left side pump panel to supply the fire pump from an external water supply. The threads shall be 6" NST. The intake shall be provided with a removable screen.

One (1)

One (1) 6" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped long handles.

One (1)

### RIGHT SIDE -- 6" UNGATED INTAKE

One (1) 6" ungated suction intake shall be installed on the right side pump panel to supply the fire pump from an external water supply. The intake shall be provided with a removable screen.

One (1)

One (1) 6" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped long handles.

One (1)

### WATER TANK TO PUMP LINE

One (1) 3" water tank to fire pump line shall be provided with a full flow quarter turn ball valve, 3" piping, and with flex hose and stainless steel hose clamps. The tank to pump line shall be equipped with a check valve to prevent pressurization of the water tank.

The line shall be flow tested during the fire pump testing and shall meet applicable requirements of NFPA standards.

One (1)

The specified valve shall be an Akron 8800 Series three-inch (3") valve with a stainless ball.

One (1)

One (1) Akron valve equipped with a manually operated pull rod, with quarter turn locking feature and a manual slow close device shall be provided on the specified discharge. The handle shall be equipped with color coded engraved type name plate.

One (1)

### FIRE PUMP TO WATER TANK FILL LINE

One (1) 2" fire pump to water tank refill and pump bypass cooler line shall be provided. The valve shall be a full flow quarter turn ball valve with 2" piping and flex hose to tank. The valve control handle shall have a nameplate located near the valve control.

## STOCK UNIT #14850 BODY SPECIFICATIONS

One (1)

The specified valve shall be an Akron 8800 Series two-inch (2") valve with a stainless ball.

One (1)

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

One (1)

### ROSENBAUER FOAM SYSTEM -- PUMP PANEL CONTROLLED

One (1) built in Rosenbauer Fix Mix foam system, suitable for all commercially available foaming agents, shall be incorporated into the construction of the Rosenbauer pump. The system shall provide a constant proportioning rate of 0.5% regardless of water pressure and volume. The Rosenbauer Fix Mix system shall be capable of providing foam at high pressure.

The foam system shall be controlled from the pump panel

One (1)

### 1" FOAM TANK CONTROL -- CLASS A

One (1) Class A foam tank shall be plumbed with 1" valve and corrosion resistant hose from the foam tank to the foam inlet of the foam system. The manually opened valve shall be provided behind the pump panel with a label.

One (1)

### INTEGRAL CLASS A FOAM TANK -- 20 GALLON

One (1) twenty (20) gallon Class A foam tank shall be installed within the water tank. The non-corrosive foam tank shall meet applicable sections of NFPA standards. The foam concentrate tank shall be provided with sufficient wash partitions so that the maximum dimension perpendicular to the plane of any partition shall not exceed 36 inches. The swash partition(s) shall extend from wall to wall and cover at least 75 percent of the area of the plane of the partition.

The foam concentrate tank shall be provided with a fill tower or expansion compartment having a minimum area of 12 square inches and having a volume of not less than 2 percent of the total tank volume. The fill tower opening shall be protected by a completely sealed air-tight cover. The cover shall be attached to the fill tower by mechanical means. The fill opening shall be designed to incorporate a 1/4 inch removable screen and shall be located so that foam concentrate from a five (5) gallon container can be dumped directly to the bottom of the tank to minimize aeration without the use of funnels or other special devices.

## STOCK UNIT #14850 BODY SPECIFICATIONS

The foam tank fill tower shall be equipped with a pressure/vacuum vent that enables the tank to compensate for changes in pressure or vacuum when filling or withdrawing foam concentrate from the tank. The pressure/vacuum vent shall not allow atmospheric air to enter the foam tank except during operation or to compensate for thermal fluctuations. The vent shall be protected to prevent foam concentrate from escaping or directly contacting the vent at any time. The vent shall be of sufficient size to prevent tank damage during filling or foam withdrawal.

A color coded label or visible permanent marking that reads "FOAM TANK FILL" shall be placed at or near any foam concentrate tank fills opening. A label shall be placed at or near any foam concentrate tank fill opening that specifies the type of foam concentrate the system is designed to use. Any restrictions on the types of foam concentrate that can be used with the system shall also be stated, and a warning message that reads "WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM."

The foam concentrate tank outlet connection shall be designed and located to prevent aeration of the foam concentrate and shall allow withdrawal of 80 percent of the foam concentrate tank storage capacity under all operating conditions with the vehicle level.

One (1)

The foam tank(s) shall be fabricated by United Plastic Fabricating.

One (1)

### FOAM TANK DRAIN -- UNDER TANK

The foam tank shall have one (1) 1" gate valve drain provision installed.

One (1)

### FOAM TANK GAUGE

The apparatus shall be equipped with one (1) Class1 "Intelli-Tank" foam tank level gauge and shall be installed on the pump panel. The tank level gauge shall indicate the liquid level on an easy to read LED display and show increments of 1/8 of a tank.

#### Each tank level gauge system shall include:

- 1) A pressure transducer mounted on the outside of the tank in an easily accessible area. Sealed foam tanks will require zero pressure vacuum vents.
- 2) Super bright LED 4-light display with a visual indication at nine accurate levels.
- 3) Weather resistant connectors to connect to the digital display, to the pressure transducer and to the apparatus power.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### **MIDSHIP FIRE PUMP DRIVESHAFTS AND INSTALLATION**

The midship PTO fire pump shall be installed and shall include installation of the fire pump, modification and/or fabrication of new drivelines and all pump-mounting brackets. The PTO drive shaft(s) shall be spin balanced prior to final installation.

One (1)

### **UNDERWRITERS LABORATORIES FIRE PUMP TEST**

The pump shall undergo an Underwriters Laboratories Incorporated test per applicable sections of NFPA standards, prior to delivery of the completed apparatus.

The UL acceptance certificate shall be furnished with the apparatus on delivery.

One (1)

### **FIRE PUMP TEST LABEL**

A fire pump performance and rating label shall be install on the fire apparatus pump panel. The label shall denote levels of pump performance and testing completed at factory. These shall include GPM at net pump pressure, RPM at such level, and other pertinent data as required by applicable NFPA standards. In addition, the pressure control device, tank to pump flow tests, and other required testing shall be completed.

In addition, the entire pump, suction and discharge passages shall be hydrostatically tested to a pressure as required by applicable NFPA standards. The pump shall be fully tested at the pump manufacturer's factory to the performance specifications as outlined by applicable NFPA standards. Pump shall be free from objectionable pulsation and vibration.

If applicable, the fire pump shall be tested and rated as follows:

- 100% of rated capacity at 150 pounds net pressure.
- 70% of rated capacity at 200 pounds net pressure.
- 50% of rated capacity at 250 pounds net pressure.
- 100% or rated capacity at 165 pounds net pressure.

One (1)

### **INTAKE RELIEF/DUMP VALVE**

One (1) Elkhart Model 40, 2-1/2" intake relief/dump valve preset at 125 psi shall be permanently installed on the suction side of the fire pump. The valve shall have an adjustment range of 75 psi to 250 psi, and shall be designed to automatically self-restore to a non-relieving position when excessive pressure is no longer present.

Discharge side of the intake relief valve shall be plumbed to the side the apparatus, away from the pump operator, and shall terminate with a 2-1/2" NST male thread. The outlet shall be marked with an engraved tag "Intake pressure relief outlet - Do Not Cap".

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### **FIRE PUMP COOLING**

The fire pump shall be equipped with 3/8" cooling line from the pump to the water tank. This re-circulation line shall be controlled by a pump panel control valve with nameplate label noting it as the "fire pump bypass cooler". There shall be a check valve installed in the pump cooler line to prevent tank water from back flowing into the pump when it is not in use.

One (1)

### **CHASSIS ENGINE HEAT EXCHANGER COOLING SYSTEM**

The apparatus shall be equipped with a heat exchanger for supplementary chassis engine cooling during fire pump operations. A manually opened valve, mounted at the operator's panel, shall direct water from the fire pump to the heat exchanger that is mounted in the engine radiator cooling hose. The system shall provide cooling water from the fire pump to circulate around the engine radiator coolant without mixing or coming in direct contact with the engine coolant. The unit shall be installed by the chassis manufacturer and connected to the plumbing system by the fire apparatus manufacturer.

A nameplate label shall be installed on the pump panel noting "engine cooling system" with "on-off" opening directions noted.

One (1)

### **LEFT SIDE -- 2-1/2" GATED INTAKE**

One (1) 2-1/2" gated suction intake shall be installed on left side pump panel to supply the fire pump from an external water supply. The control valve shall be a quarter turn ball valve and shall have 2-1/2" NST female thread of chrome plated brass.

The intake shall be equipped with a 3/4" drain and bleeder valve. A nameplate label and removable screen shall be installed.

One (1)

One (1) 2-1/2" chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain or cable securement.

One (1)

The specified valve shall be an Akron 8800 Series two and one half-inch (2-1/2") valve with a stainless ball.

One (1)

The specified intake valve shall be equipped with one (1) manually operated swing type manual control located adjacent the intake. The valve shall be equipped with a color coded engraved type name plate.

One (1)

### **TWO (2) 1-1/2" SPEEDLAY DISCHARGES**

Two (2) 1-3/4" pre-connect hose speedlays shall be installed ahead of the front of body or pump enclosure, controlled with quarter turn 2" diameter ball valves. The outlets shall be equipped 2" NPT female swivel x 1-1/2" male NST hose threads.

## STOCK UNIT #14850 BODY SPECIFICATIONS

The hosebed decking shall be constructed with slots integrated into the hosebed floor.

Two (2)

The hose bed shall provide a minimum capacity of 200 feet of 1-3/4" diameter double jacket hose with hose and nozzle provided by fire department.

Two (2)

A Class 1 automatic type 3/4" bleeder valve shall be installed on discharges larger than 1-1/2" in size.

### ROLLERS FOR PRE-CONNECTED SPEEDLAY HOSE BED

Two (2)

The pre-connect speedlay hosebed shall be equipped stainless steel "U" shaped roller system, one on each end of the hosebed.

### PRE-CONNECT 2" HOSEBED -- ROLLOUT TRAY

A slide tray shall be installed in the 2" crosslay hosebed area. The tracks shall have slidemaster slides. The tray shall be constructed of aluminum, fabricated with two sides and floor. The tray shall have latching devices on each end of the tray. The tray shall be capable of pulling out fully from either side of the vehicle and shall be lockable in the "in" and "out" positions.

The tray shall hold the specified hose load and nozzle (both provided by fire department.) The chocks swivel shall be located over the tray area. Plastic matting shall be installed in the floor of the tray.

Two (2)

The hose bed openings shall be equipped with hose and nozzle securement devices to comply to applicable NFPA standards.

Two (2)

The specified valve shall be an Akron 8800 Series two-inch (2") valve with a stainless ball.

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

Two (2)

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

Two (2) 2-1/2" pressure gauge rated at 0-400 PSI shall be provided. The gauge shall include a color coded label and be installed on the pump instrument panel. The face of the gauge shall have a white dial with black letters.

**STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

VINYL SPEEDLAY END COVERS

The speedlay hosebeds shall be equipped with a vinyl cover with end flaps and shall be secured with a hook and loop fastening system.

Two (2)

LEFT SIDE PUMP PANEL -- 2-1/2" DISCHARGE

Two (2) 2-1/2" discharge shall be installed on the left side pump panel area and shall be controlled by a quarter turn ball valve. The discharge shall have 2-1/2" NST male hose threads and a chrome plated elbow with rocker lugs with 2-1/2" NST swivel female x 2-1/2" NST male hose threads. A color coded nameplate label shall be provided adjacent the control handle.

Two (2)

A 3/4" quarter turn bleeder valves shall be installed on gated intakes and discharges larger than 1-1/2" in size.

Two (2)

Two (2) chrome plated elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" NST male hose threads.

Two (2)

Two (2) 2-1/2" NST rocker lug chrome plated vented cap and cable or chain securement shall be provided.

Two (2)

The specified valve shall be an Akron 8800 Series two and one half-inch (2-1/2") valve with a stainless ball.

Two (2)

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

Two (2)

Two (2) 2-1/2" pressure gauge rated at 0-400 PSI shall be provided. The gauge shall include a color coded label and be installed on the pump instrument panel. The face of the gauge shall have a white dial with black letters.

One (1)

RIGHT SIDE PUMP PANEL -- 2-1/2" DISCHARGE

One (1) 2-1/2" discharge shall be installed on the right side pump panel area and shall be controlled by a quarter turn ball valve. The discharge shall have 2-1/2" NST male hose threads and a chrome plated elbow with rocker lugs with 2-1/2" NST swivel female x 2-1/2" NST male hose threads. A color coded nameplate label shall be provided adjacent the control handle.

## STOCK UNIT #14850 BODY SPECIFICATIONS

One (1)

A 3/4" quarter turn bleeder valves shall be installed on gated intakes and discharges larger than 1-1/2" in size.

One (1)

One (1) chrome plated elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" NST male hose threads.

One (1)

One (1) 2-1/2" NST rocker lug chrome plated vented cap and cable or chain securement shall be provided.

One (1)

The specified valve shall be an Akron 8800 Series two and one half-inch (2-1/2") valve with a stainless ball.

One (1)

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

One (1)

One (1) 2-1/2" pressure gauge rated at 0-400 PSI shall be provided. The gauge shall include a color coded label and be installed on the pump instrument panel. The face of the gauge shall have a white dial with black letters.

One (1)

### RIGHT SIDE PUMP PANEL -- 3" x 4" DISCHARGE

One (1) 3" discharge shall be installed on the right side pump panel area and shall be controlled by a full flow 3" slow-close quarter turn ball valve. The discharge shall have 4" NST male hose threads. A color coded nameplate label shall be provided adjacent the control handle.

One (1)

A 3/4" quarter turn bleeder valves shall be installed on gated intakes and discharges larger than 1-1/2" in size.

One (1)

One (1) lightweight aluminum elbow with 30 degree slant and bright finish shall be provided. Threads shall be 5" Storz with lugs and manual locks x 4" female swivel NST with rocker lugs.

One (1)

One (1) 5" lightweight aluminum color coded Storz cap with cable or chain securement shall be provided.

One (1)

The specified valve shall be an Akron 8800 Series three-inch (3") valve with a stainless ball.

## STOCK UNIT #14850 BODY SPECIFICATIONS

One (1)

One (1) Akron valve equipped with a manually operated pull rod, with quarter turn locking feature and a manual slow close device shall be provided on the specified discharge. The handle shall be equipped with color coded engraved type name plate.

One (1)

One (1) 2-1/2" pressure gauge rated at 0-400 PSI shall be provided. The gauge shall include a color coded label and be installed on the pump instrument panel. The face of the gauge shall have a white dial with black letters.

One (1)

### LEFT SIDE FRONT OF HOSEBED -- 2-1/2" DISCHARGE

One (1) 2-1/2" discharge shall be installed to the left side front of hosebed area and controlled by a quarter turn ball valve on the pump panel. The discharge shall have 2-1/2" NPT x 2-1/2" NST male hose threads. An engraved nameplate label shall be provided adjacent the control handle.

One (1)

A Class 1 automatic type 3/4" bleeder valve shall be installed on discharges larger than 1-1/2" in size.

One (1)

The specified valve shall be an Akron 8800 Series two and one half-inch (2-1/2") valve with a stainless ball.

One (1)

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

One (1)

One (1) 2-1/2" pressure gauge rated at 0-400 PSI shall be provided. The gauge shall include a color coded label and be installed on the pump instrument panel. The face of the gauge shall have a white dial with black letters.

One (1)

### 3" MONITOR DISCHARGE

One (1) 3" discharge shall be piped to the area over the pump enclosure with 3" NPT male threads provided. The pipe shall be equipped with Victaulic couplings (if necessary) and shall be properly secured to prevent movement when a monitor or deck gun is attached. The quarter turn ball valve shall be controlled on pump panel.

A color coded nameplate label shall be provided adjacent the valve control handle.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

A 3/4" quarter turn bleeder valves shall be installed on gated intakes and discharges larger than 1-1/2" in size.

One (1)

The specified valve shall be an Akron 8800 Series three-inch (3") valve with a stainless ball.

One (1)

One (1) Akron valve equipped with a manually operated pull rod, with quarter turn locking feature and a manual slow close device shall be provided on the specified discharge. The handle shall be equipped with color coded engraved type name plate.

One (1)

One (1) 2-1/2" pressure gauge rated at 0-400 PSI shall be provided. The gauge shall include a color coded label and be installed on the pump instrument panel. The face of the gauge shall have a white dial with black letters.

One (1)

### ELECTRIC REWIND HOSE REEL

One (1) Hannay unpainted aluminum hose reel with leak proof ball bearing swing joint, adjustable friction brake, electric and crank rewind shall be installed. The reel shall be plumbed with wire reinforced, high-pressure hose coupled. The reel shall be bolted to a mounting system for easy service or removal.

The hose reel is to be mounted in the front bumper extension.

One (1)

### ALUMINUM COVER FOR HOSE REEL

The hose reel shall be installed within an aluminum tread plate enclosure for protection against cold weather. Access to the hose and nozzle shall be through a hinged door.

One (1)

### HOSE REEL REWIND SWITCH

A push button hose reel rewind switch shall be installed to control the electric rewind hose reel. The exact location shall be determined at construction.

One (1)

### 1-1/2" HOSE REEL DISCHARGE

One (1) 1-1/2" discharge shall be provided and piped from the fire pump to the hose reel with flexible high pressure hose. The quarter turn ball valve shall be controlled on pump panel. Color coded engraved nameplate label shall be provided near the valve control handle.

One (1)

A 3/4" quarter turn bleeder valves shall be installed on gated intakes and discharges larger than 1-1/2" in size.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### **HOSE REEL DISCHARGE**

The specified hose reel shall be piped to the high pressure side of the fire pump.

One (1)

The specified valve shall be an Akron 8800 Series one and one half-inch (1-1/2") valve with a stainless ball.

One (1)

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

One (1)

One (1) 2-1/2" pressure gauge rated at 0-400 PSI shall be provided. The gauge shall include a color coded label and be installed on the pump instrument panel. The face of the gauge shall have a white dial with black letters.

One (1)

### **HOSE FOR REEL**

Three (3) 50' foot lengths of 1" water hose (150') with pin lug couplings and 800 PSI working pressure shall be provided and mounted on the specified hose reel.

One (1)

### **HOSE REEL NOZZLE**

One (1) Rosenbauer Servo-Nepiro 'normal pressure' nozzle with detachable foam tube shall be furnished and installed on the specified booster hose reel.

One (1)

### **BOOSTER REEL AIR BLOWOUT**

One (1) air blow out shall be provided for the booster reel. The air supply must be supplied from the chassis air system and be connected to an air inlet fitting located on the pump operators panel.

The air inlet shall be a Parker Model #B53 male with female fitting.

One (1)

### **SIDE MOUNT PUMP ENCLOSURE**

The side mount pump enclosure shall be removable and supported from the chassis frame rails. This enclosure will allow independent flexing of the pump enclosure from the body and allow for quick removal. The support structure shall be constructed of extruded aluminum tubing and angle.

## STOCK UNIT #14850 BODY SPECIFICATIONS

All pump suction and discharge controls are to be mounted on the driver side pump operator's panel so as to permit operation of the pump from a central location. The fire pump, valves and controls shall be accessible for service and maintenance as required by applicable sections of NFPA standards.

The "master" gauges shall be suitably enclosed and mounted on a full pump compartment width "hinged" gauge panel constructed of the same material as the pump operators control panel, allowing access to the backside of all gauges and gauge lines. The individual gauges shall be mounted inline with the control handle or adjacent to the control handle. Panel is to include a stainless steel piano hinge, flush mounted chrome plated trigger latch, and stainless steel cable end stops. Electrical wiring and all gauge lines shall be properly tie wrapped to prevent kinking or cutting of the lines when the panel is opened.

The following controls and equipment shall be provided on the pump panel or within the pump enclosure:

- 1) Electric primer.
- 2) Pump and plumbing area service lights.
- 3) Pressure control device and throttle control.
- 4) Fire pump and engine instruments.
- 5) Pump intakes and discharge controls.
- 6) Master intake and discharge gauges.
- 7) Tank fill control.
- 8) Tank suction control.
- 9) Water tank level gauge.
- 10) Pump panel lights

One (1)

### OPEN DUNNAGE COMPARTMENT -- OVER PUMP ENCLOSURE

One (1) open compartment shall be located on the top of the pump module. The compartment will be constructed as large as space permits with removable slip resistance floor material or decking in the base of the compartment.

One (1)

### LEFT SIDE RUNNING BOARD -- SIDE MOUNT PANEL

The left side mount pump panel shall be equipped with side running board. The running board will extend along the width of the pump enclosure from the forward end of the body module to behind the chassis cab.

The running board shall be constructed of aluminum tread plate, bolted in place with stainless steel fasteners. The step surfaces shall be in compliance to applicable sections of NFPA requirements.

## STOCK UNIT #14850 BODY SPECIFICATIONS

One (1)

### RIGHT SIDE RUNNING BOARD -- SIDE MOUNT PANEL

The right side mount pump panel shall be equipped with side running board. The running board will extend along the width of the pump enclosure from the forward end of the body module to behind the chassis cab.

The running board shall be constructed of aluminum tread plate, bolted in place with stainless steel fasteners. The step surfaces shall be in compliance to applicable sections of NFPA requirements.

One (1)

### RIGHT SIDE PUMP PANEL ACCESS -- INTERMEDIATE STEP

An auxiliary step constructed of aluminum tread plate or equal surface, compliant with applicable sections of NFPA standards shall be installed. This step shall serve as an intermediate step on the right side of the pump panel.

One (1)

### PUMP ENCLOSURE ACCESS DOOR -- RIGHT SIDE UPPER

A pump panel access door shall be provided on the upper right side of the side mount pump enclosure. The access door shall be approximately 18" high and as wide as possible. The door shall be constructed of aluminum tread plate with push button type latches.

One (1)

### PUMP PANELS -- SIDE MOUNT

The pump operator's panel, along with the lower left hand and right hand pump panels shall be constructed of 14 gauge #304 brushed stainless steel and be fastened to the pump enclosure with 1/4" stainless steel bolts and nutserts.

The instrument area shall have a stainless steel continuous hinge that shall swing for easy access to gauges.

One (1)

### HINGED PUMP PANEL -- LEFT SIDE

The pump panel installed on the on the left hand side of the pump enclosure shall be hinged with push-button latches.

One (1)

### HINGED PUMP PANEL -- RIGHT SIDE

The pump panel installed on the on the right hand side of the pump enclosure shall be hinged with push-button latches.

## STOCK UNIT #14850 BODY SPECIFICATIONS

One (1)

### LogicColor™ PUMP CONTROL PANEL

The pump module shall be furnished with a durable, high-impact laminated .250” neutral gray control panel that graphically tracks each pump discharge control on the panel with a top-down perspective schematic of the apparatus depicting the location each discharge on the apparatus. Separate colored graphical lines shall be used to graphically connect the actual discharge control on the panel to the imprinted schematic showing the location of the discharge.

The graphics used on the panel shall be function and easy-to-read. The connection points between the discharge controls on the panel and the schematic shall include all pump discharges; crosslays/speedlays; front and rear discharges; deck guns and hose reels.

The high-impact panel shall be affixed on top of a .125” thick aluminum panel and secured to the pump module. The control panel shall be furnished with a .250” stainless steel piano-style hinge and three (3) durable “lift-and-twist” latching mechanisms that will allow the panel to be dropped down for maintenance access. The underside of the panel shall be furnished with a 360 rubberized gasket affixed to the aluminum plate to prevent the introduction of moisture and water into the underside of the panel.

The pump control panel shall be designed in such a way as to ensure inclusion of other specified critical control points on the apparatus, including but not limited to the pressure governor, foam system, lights, air-horn button, etc.

One (1)

### PUMP PANEL TRIM -- STAINLESS STEEL

Stainless steel trim plates shall be provided for each of the suction and discharge outlets on the apparatus.

One (1)

### BODY AND PUMP HOUSE FLEX JOINT RUBBER GASKET

A flexible rubber gasket shall be installed between the pump compartment and the apparatus body. This gasket will be designed to seal the pump compartment to the apparatus body as tightly as practical. This gasket is necessary for winter operation in extremely cold climates.

One (1)

### LABELS

Safety, information, data, and instruction labels for apparatus shall be provided and installed at the operator's instrument panel.

The labels shall include rated capacities, pressure ratings, and engine speeds as determined by the certification tests. The no-load governed speed of the engine, as stated by the engine manufacturer, shall also be included.

The labels shall be provided with all information and be attached to the apparatus prior to delivery.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### COLOR CODED PUMP PANEL LABELING AND NAMEPLATES

Discharge and intake valve controls shall be color coded in compliance to guidelines of applicable sections of NFPA standards.

Permanent type nameplates and instruction panels shall be installed on the pump panel for safe operation of the pumping equipment and controls.

One (1)

### MIDSHIP PUMP PANEL LIGHTS -- LEFT SIDE

Three (3) Weldon #2025 or equal lights with clear lenses shall be installed under an instrument panel light hood on the left side pump panel. The lights shall be controlled by a switch located on the operators instrument panel.

One (1)

### MIDSHIP PUMP PANEL LIGHTS -- RIGHT SIDE

Two (2) Weldon #2025 or equal lights with clear lenses shall be installed under an instrument panel light hood on the right side pump panel. The lights shall be controlled by a switch located on the operator's instrument panel.

One (1)

### PUMP PANEL LIGHTS

One (1) pump panel light shall be illuminated at the time the fire pump is engaged into operation. The remaining lights shall be controlled by a switch located on the operator's instrument panel.

One (1)

### MASTER DISCHARGE AND INTAKE GAUGES

Two (2) 4-1/2" diameter discharge pressure and intake gauges (30-0-600 PSI) with engraved, color coded metal labels, shall be provided on the pump instrument panel.

One (1)

### TEST TAPS

Test taps for pump intake and pump pressure shall be provided on the pump instrument panel and be properly labeled.

## STOCK UNIT #14850 BODY SPECIFICATIONS

One (1)

### WATER TANK GAUGE

The apparatus shall be equipped with one (1) Class1 "Intelli-Tank" water tank level gauge and shall be installed on the pump panel. The tank level gauge shall indicate the liquid level on an easy to read LED display and show increments of 1/8 of a tank.

Each tank level gauge system shall include:

- 1) A pressure transducer mounted on the outside of the tank in an easily accessible area. Sealed foam tanks will require zero pressure vacuum vents.
- 2) Super bright LED 4-light display with a visual indication at nine accurate levels.
- 3) Weather resistant connectors to connect to the digital display, to the pressure transducer and to the apparatus power.

One (1)

### AIR HORN PUSH-BUTTON

One (1) push button with a label shall be installed on the pump instrument panel to operate the air horns.

One (1)

### WATER TANK - 1000 GALLON

The apparatus shall be equipped with a one-thousand (1000) gallon polypropylene water tank. The tank shall be equipped with a four-inch (4") overflow pipe.

One (1)

### WATER TANK

The apparatus shall be equipped with a polypropylene water "T" shaped tank.

One (1)

### WATER TANK FILL TOWER

A fill tower measuring approximately 10" x 10" square shall be provided on the water tank up to and including 1500 gallons total capacity.

One (1)

The apparatus shall be equipped with a polypropylene water tank. The tank body and end bulkheads shall be constructed of .5" thick, polypropylene, nitrogen-welded and tested inside and out. Tank construction shall conform to applicable NFPA standards. The tank shall carry a lifetime warranty.

The transverse and longitudinal .375" thick swash partitions shall be interlocked and welded to each other as well as to the walls of the tank. The partitions shall be designed and equipped with vent holes to permit air and liquid movement between compartments.

The .5" thick cover shall be recessed .375" from the top of the side walls. Hold down dowels shall extend through and be welded to both the covers and the transverse partitions, providing rigidity during fast fill operations. Drilled and tapped holes for lifting eyes shall be provided in the top area of the booster tank.

## STOCK UNIT #14850 BODY SPECIFICATIONS

The water fill tower shall be provided at front of the tank. The 0.5" thick polypropylene fill and overflow tower shall be equipped with a hinged lid and a removable polypropylene screen. The overflow tube shall be installed in fill tower and piped with schedule 40 PVC pipe through the tank.

The water tank sump shall be located in the forward area of the tank. There will be a schedule 40 polypropylene tank suction pipe from the front of the tank to the tank sump. The tank drain and clean out shall be located in the bottom of the tank sump.

The pump to tank refill connection shall be a sized to mate with tank fill discharge line. A deflector shield inside the tank will also be provided.

The water tank manufacturer shall certify the capacity of the water tank prior to delivery of the apparatus. This capacity shall be recorded on the manufacturer's record of construction and the certification shall be provided to the purchaser when the apparatus is delivered.

One (1)

The apparatus shall be equipped with a water tank manufactured by United Plastic Fabricating.

One (1)

### WATER TANK WARRANTY

UNITED PLASTIC FABRICATION INC. Warrants each UPF POLY-TANK IIE Booster/Foam tank to be free from manufacturing defects in material and workmanship for the service life of the vehicle (vehicle must be actively used in fire suppression). The UPF POLY-TANK IIE must be installed in accordance with the United Plastic Fabricating installation manual. Every UPF POLY-TANK IIE is thoroughly inspected and tested for leaks before leaving our facility. Should any problems develop with your UPF POLY-TANK IIE booster/foam tank and will not meet performance criteria during the service life of the vehicle, notify UPF in writing or call our TOLL FREE SERVICE HOT LINE 1-800-USA-POLY. Provide UPF with the serial number and a description of the problem. If the tank problem would render the truck out of service, UPF will dispatch a service technician WITHIN 48 HOURS (2 DAYS) to repair the tank. (This time period is for North America only). If the vehicle can remain in service, UPF will dispatch a service technician within a mutually agreed upon time period.

We will repair, or at our option, replace the tank with a new UPF POLY-Tank IIE. UPF will cover customary and reasonable costs to remove and install the UPF POLY-TANK IIE. This warranty will not cover tanks that have been improperly installed, misused or abused, and the serial number must not have, been altered, defaced or removed. UPF will not cover any unauthorized third party repairs or alterations. Any of these actions may void the warranty.

## STOCK UNIT #14850 BODY SPECIFICATIONS

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF. THERE IS NO EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. ADDITIONALLY, THIS WARRANTY IS IN LIEU OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF UNITED PLASTIC FABRICATION, INC.

This warranty contains the entire warranty. It is the sole warranty and price agreements or representation, whether oral or written, are either merged herein or expressly cancelled. UNITED PLASTIC FABRICATION, INC. Neither assumes, nor authorizes any person supposing to act on its behalf, to change, nor assume for it, any warranty or liability concerning its product.

IN NO EVENT WILL UNITED PLASTIC FABRICATION, INC BE LIABLE FOR AN AMOUNT IN EXCESS OF THE PRESENT RETAIL, PURCHASE PRICE PLUS INSTALLATION AND REMOVAL COST OF THE BOOSTER TANK, FOR ANY LOSS OR DAMAGE, WHETHER DIRECT OR INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR OTHERWISE ARISING OUT OF FAILURE OF ITS PRODUCT.

This warranty gives you specific legal rights, and you may have other rights, which vary from state to state. Some states do not allow exclusion or limitation of incidental or consequential damage, so the above limitation or exclusion may not apply to you. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

One (1)

### DIRECT TANK FILL

One (1) 2-1/2" diameter direct tank fill inlet shall be provided, including a 2-1/2" female NH swivel, plug and screen.

One (1)

The valve shall be located and controlled on the right side pump panel.

One (1)

One (1) 2-1/2" chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain or cable securement.

One (1)

### TANK FILL ELBOW

The direct tank fill shall be equipped with a 30-degree elbow and a 3/4" drain.

### HOSEBED WIDTH

The width of the pumper body hosebed shall be 70".

## STOCK UNIT #14850 BODY SPECIFICATIONS

One (1)

### ALUMINUM HOSEBED GRATING SINGLE AXLE

The hose bed compartment deck shall be constructed entirely from maintenance-free, extruded aluminum slats. The slats shall have an anodized, radiused ribbed top surface. The slats shall be of widths approximately 3/4" high x 6" wide and shall be welded into a one-piece grid system to prevent the accumulation of water and allow ventilation to assist in drying hose.

One (1)

### HOSE BED STORAGE CAPACITY

The hose bed shall be designed to have a storage capacity for a minimum of 55 cubic feet of fire department supplied fire hose.

Eight (8)

The hose bed shall be designed to have storage capacity for eight (8) 50-ft lengths of 2.5" Double Jacket fire hose.

Ten (10)

The hose bed shall be designed to have storage capacity for ten (10) 100-ft lengths of 5" LDH Single Jacket rubber fire.

Two (2)

### ALUMINUM HOSEBED DIVIDER

Two (2) adjustable hosebed divider constructed of .250" aluminum shall be installed on the apparatus.

One (1)

### ALUMINUM BOX

There shall be a full width smooth aluminum box fabricated around the fill tower(s).

One (1)

### VINYL HOSEBED COVER

The apparatus shall be equipped with a vinyl hosebed cover with a weighted rear flap.

The cover, approximately 48" wide, shall be secured utilizing a Velcro fastening system at the front and sides of the hosebed body.

One (1)

### HOSEBED RISERS

Hosebed risers shall be provided and installed at the front and along each side of the main hosebed for added depth to meet the hose storage requirement. Risers shall form the right and left side vertical hosebed sides. Hosebed risers shall be fabricated of aluminum treadplate.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### **MODULAR BODY**

The apparatus body shall be designed and built using a computer aided drafting and three dimensional modeling program. This engineering program shall have finite element analysis capability, so the design can be studied and stress points identified. This will allow for a total design review to ensure the strongest and most durable body possible. The use of this engineering system will ensure accuracy and repeatability for service parts in the event of accidental damage. The body components shall be fabricated using CNC equipment to cut and bend the individual body parts.

One (1)

### **BODY WIDTH**

The overall width of the pumper body shall not exceed 98".

### **COMPARTMENT DEPTH**

The side compartments on the pumper body shall have the maximum available height and depth dimensions. These dimensions shall remain consistent for the full height and depth of the compartment. The compartment shall be 28" deep.

One (1)

### **12 GA STAINLESS STEEL BODY**

The compartment modules shall be fabricated using 12 ga stainless steel sheets. The individual compartment pieces shall be cut using a CNC high definition plasma or large cutting equipment. The pieces shall incorporate a "notch and tab" design. This design will ensure that all parts fit accurately. These compartment modules shall bolt to the subframe creating a completely independent modular body.

One (1)

### **COMPARTMENT TOPS**

The compartment top shall be formed from .190 aluminum treadplate, meeting NFPA slip resistant standards and shall extend down the side 5-inches minimum.

One (1)

### **STAINLESS STEEL SUB-FRAME**

The apparatus shall be designed using a structural subframe, designed as an independent assembly, separate of the chassis frame. This will allow for a totally modular body, capable of being remounted to a different chassis if the need arises. Designs which do not use a modular subframe assembly will not be allowed.

This subframe shall be designed using heavy duty stainless steel and plates to form a subframe capable of carrying the loads designated by the Fire Department. The subframe shall be designed to carry a minimum of 500 lbs per compartment, distributed. The subframe shall be powder coated before assembly to prevent corrosion. Subframes that are painted or undercoated will not be acceptable.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

The subframe shall be assembled with “Huck” bolts to ensure maximum tightening and clamping force at all joints. It shall be bolted securely at the rear with a minimum of four (4) 5/8” grade 8 bolts on each side and mounted at the front using four (4) spring loaded assemblies and lateral guides to allow for maximum twist, yet keeping the body aligned on the chassis.

The subframe shall consist of formed cross members, spaced no more than 16-inches apart, to adequately support the water tank. There shall be ¼” thick hard rubber channel pads covering the cross members, which will help prevent tank damage due to road shock. The tank shall be held in place by four (4) formed angle brackets, at least 3” high. These four brackets will prevent fore and aft and lateral movement of the tank. These cross members shall be attached to two (2) longitudinal 3x3 angles. These angles shall be at the ends of the cross members to allow the compartment to be attached and supported by these pieces. There shall be at least two down and out compartment supports under each compartment, ahead of and behind the rear wheels.

One (1)

### **ROLL UP DOOR CONSTRUCTION**

The roll up door(s) shall be fabricated from aluminum extrusions and be manufactured and assembled in the United States.

The door slats shall be double-wall extrusions with dimensions of 1.366" high x .315" thick. The exterior surface shall be flat and the interior surface concave to deflect loose equipment to prevent the door from jamming. Each slat shall have interlocking end shoes to prevent the slat from moving side to side resulting in binding of the door. Each slat shall be separated by a co-extruded PVC and rubber inner seal to prevent metal to metal contact and minimize dirt and moisture from entering the compartment. The inner seal shall not be visible from the exterior to maintain a clean appearance of door. The slats shall have interlocking joints with a folding locking flange to provide security and prevent penetration by sharp objects.

The track shall be a one (1) piece aluminum assembly that has an attaching flange and finishing flange incorporated into the design that facilitates installation and provides a finished look to the door without additional trim or caulking. A low profile side seal shall be utilized to maximize usable compartment space.

A drip rail designed to prevent water from dripping into the compartment shall be provided. The drip rail shall have a built in replaceable non-contacting seal to eliminate scratching of the surface of the door.

Bottom rail extrusion must have smooth back to prevent loose equipment from jamming the door and have “V” shaped double seal to prevent water and debris from entering the compartment. The door latch system shall be a full width one (1) piece lift bar that enables the user to operate with one hand.

## STOCK UNIT #14850 BODY SPECIFICATIONS

The roll mechanism shall have a clip system that connects the curtain slats to the operator drum to allow for easy tension adjustment without tools. A four (4) inch diameter counterbalanced operator drum to shall be incorporated to assist in lifting the door.

One (1)

### ROLLUP DOORS

The rollup doors shall be ROM manufacturing roll up doors.

Seven (7)

### PULL DOWN STRAPS

Nylon straps shall be provided and installed on each roll up door . The straps shall be secured to the side wall of the interior compartment in a way that will allow the strap to automatically tuck inside the compartment when closed to prevent the strap from dangling and hindering closing of the door. The straps shall be black in color.

Seven (7)

### DOOR DRIP PANS

An aluminum drip pan shall be provided on the roll up door.

One (1)

### BODY CONFIGURATION

The modular stainless steel apparatus body shall be 156" long.

One (1)

### LEFT SIDE COMPARTMENTS

One (1)

### COMPARTMENT HEIGHT

The body compartments shall be 72" in height.

One (1)

### FORWARD COMPARTMENT

There shall be one (1) full height compartment module located ahead of the rear wheels. The compartment module shall be equipped with a full height natural finish roll up door and shall be 38" wide.

The compartment shall be equipped with the following:

One (1)

### COMPARTMENT LOUVER

A removable louvered ventilation shall be provided in the afore mentioned compartment.

One (1)

### ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### ADJUSTABLE SHELF

One (1) adjustable shelf shall be constructed of .188" smooth aluminum plate with 1.5" formed vertical lip front & back. Shelf supports on each side to be constructed of .188" aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8" bolts and spring-loaded cam locks. If shelf is longer than 40" a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf. Trim-Lok trim shall be installed on the front lip edge to afford protection to equipment and firefighter when loading/unloading.

One (1)

### 250# ROLLOUT TRAY

One (1) roll-out equipment tray shall be installed in a standard depth compartment. The tray with telescoping slides and roller bearings shall be rated to a maximum load of 250 lbs. Tray shall be of a closed-in design, formed of .188" smooth aluminum plate, fabricated with two (2) inch sides. Trim-Lok edge trim shall be installed on the front lip to afford protection to equipment and firefighter when loading/unloading. Reflective material measuring 1" x 6" shall be installed on the each front corner both on the face and side of tray for firefighter safety.

The tray unit shall roll out to full extension of the compartment, with latching mechanism to hold tray in both fully-extended and stored positions.

One (1)

### PULL-OUT AND DROP-DOWN

One (1) roll-out and tilt-down equipment tray shall be installed in the customer-specified compartment. The tray with roller bearing tracks shall be rated to a maximum load of 250 lb. Construction shall consist of four (4) inch tall extruded aluminum sides and .125" aluminum plate with two (2) inch formed rear wall and three (3) inch formed front. Trim-Lok edge trim shall be installed on the front lip to afford protection to equipment and firefighter when loading/unloading. Reflective material measuring 1" x 6" shall be installed on the each front corner both on the face and side of tray for firefighter safety.

Track assembly shall allow tray to roll out and tilt down at approximately a 30-degree angle.

One (1)

### LED COMPARTMENT LIGHTS

Two (2) ROM vertically mounted roll-up compartment LED door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat build up.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### **COMPARTMENT LIGHT SWITCH**

The exterior compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1)

### **OVERWHEEL COMPARTMENT**

There shall be one (1) compartment module above the rear wheels. The compartment module shall be equipped with a natural finish roll up door and shall be 68" wide.

The compartment shall be equipped with the following:

One (1)

### **COMPARTMENT LOUVER**

A removable louvered ventilation shall be provided in the afore mentioned compartment.

One (1)

### **ADJUSTABLE SHELVING TRACKS**

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

One (1)

### **PULL-OUT AND DROP-DOWN**

One (1) roll-out and tilt-down equipment tray shall be installed in the customer-specified compartment. The tray with roller bearing tracks shall be rated to a maximum load of 250 lb. Construction shall consist of four (4) inch tall extruded aluminum sides and .125" aluminum plate with two (2) inch formed rear wall and three (3) inch formed front. Trim-Lok edge trim shall be installed on the front lip to afford protection to equipment and firefighter when loading/unloading. Reflective material measuring 1" x 6" shall be installed on the each front corner both on the face and side of tray for firefighter safety.

Track assembly shall allow tray to roll out and tilt down at approximately a 30-degree angle.

One (1)

### **LED COMPARTMENT LIGHTS**

Two (2) ROM vertically mounted roll-up compartment LED door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat build up.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### **COMPARTMENT LIGHT SWITCH**

The exterior compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1)

### **REAR COMPARTMENT**

There shall be one (1) full height compartment module located behind the rear wheels. The compartment module shall be equipped with a full height natural finish roll up door and shall be 50" wide.

An easy to reach panel with hinged door shall be provided to access the wiring components in the rear compartment.

The compartment shall be equipped with the following:

One (1)

### **COMPARTMENT LOUVER**

A removable louvered ventilation shall be provided in the afore mentioned compartment.

One (1)

### **ADJUSTABLE SHELVING TRACKS**

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

Two (2)

### **ROLL-OUT ALUMINUM TOOL BOARD**

Two (2) roll-out tool board panel shall be mounted vertically within compartment. The panel and tracks shall be rated to a maximum load of 500 lb. Panel to be formed of .188" smooth aluminum with an opening to accommodate a gloved-hand to slide tool board.

The tool board shall slide out to full extension of the compartment, with a device to hold tool board in both fully-extended and stored positions.

One (1)

### **LED COMPARTMENT LIGHTS**

Two (2) ROM vertically mounted roll-up compartment LED door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat build up.

## STOCK UNIT #14850 BODY SPECIFICATIONS

One (1)

### COMPARTMENT LIGHT SWITCH

The exterior compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1)

### RIGHT SIDE COMPARTMENTS

One (1)

### COMPARTMENT HEIGHT

The body compartments shall be 72" in height.

One (1)

### FORWARD COMPARTMENT

There shall be one (1) full height compartment module located ahead of the rear wheels. The compartment module shall be equipped with a full height natural finish roll up door and shall be 38" wide.

The compartment shall be equipped with the following:

One (1)

### COMPARTMENT LOUVER

A removable louvered ventilation shall be provided in the afore mentioned compartment.

One (1)

### ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

One (1)

### ADJUSTABLE SHELF

One (1) adjustable shelf shall be constructed of .188" smooth aluminum plate with 1.5" formed vertical lip front & back. Shelf supports on each side to be constructed of .188" aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8" bolts and spring-loaded cam locks. If shelf is longer than 40" a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf. Trim-Lok trim shall be installed on the front lip edge to afford protection to equipment and firefighter when loading/unloading.

Locate in the shallow portion of the compt.

One (1)

### LED COMPARTMENT LIGHTS

Two (2) ROM vertically mounted roll-up compartment LED door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

## STOCK UNIT #14850 BODY SPECIFICATIONS

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat build up.

One (1)

### COMPARTMENT LIGHT SWITCH

The exterior compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1)

### OVERWHEEL COMPARTMENT

There shall be one (1) compartment module above the rear wheels. The compartment module shall be equipped with a natural finish roll up door and shall be 68" wide.

The compartment shall be equipped with the following:

One (1)

### COMPARTMENT LOUVER

A removable louvered ventilation shall be provided in the afore mentioned compartment.

One (1)

### ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

One (1)

### SWING-OUT ALUMINUM TOOL BOARD

One (1) swing-out vertical tool board assembly constructed of .188" smooth aluminum shall be provided. with locks for holding it in the "in" and "out" positions.

The tool board shall have a hand hole cut-out to accommodate a gloved hand.

One (1)

### LED COMPARTMENT LIGHTS

Two (2) ROM vertically mounted roll-up compartment LED door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat build up.

One (1)

### COMPARTMENT LIGHT SWITCH

The exterior compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

## STOCK UNIT #14850 BODY SPECIFICATIONS

One (1)

### REAR COMPARTMENT

There shall be one (1) full height compartment module located behind the rear wheels. The compartment module shall be equipped with a full height natural finish roll up door and shall be 50" wide.

An easy to reach panel with hinged door shall be provided to access the wiring components in the rear compartment.

The compartment shall be equipped with the following:

One (1)

### COMPARTMENT LOUVER

A removable louvered ventilation shall be provided in the afore mentioned compartment.

One (1)

### ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

One (1)

### ADJUSTABLE SHELF

One (1) adjustable shelf shall be constructed of .188" smooth aluminum plate with 1.5" formed vertical lip front & back. Shelf supports on each side to be constructed of .188" aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8" bolts and spring-loaded cam locks. If shelf is longer than 40" a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf. Trim-Lok trim shall be installed on the front lip edge to afford protection to equipment and firefighter when loading/unloading.

Locate in the shallow upper portion of the compartment

One (1)

### 250# ROLLOUT TRAY

One (1) roll-out equipment tray shall be installed in a standard depth compartment. The tray with telescoping slides and roller bearings shall be rated to a maximum load of 250 lbs. Tray shall be of a closed-in design, formed of .188" smooth aluminum plate, fabricated with two (2) inch sides. Trim-Lok edge trim shall be installed on the front lip to afford protection to equipment and firefighter when loading/unloading. Reflective material measuring 1" x 6" shall be installed on the each front corner both on the face and side of tray for firefighter safety.

The tray unit shall roll out to full extension of the compartment, with latching mechanism to hold tray in both fully-extended and stored positions.

Floor mounted

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### **LED COMPARTMENT LIGHTS**

Two (2) ROM vertically mounted roll-up compartment LED door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat build up.

One (1)

### **COMPARTMENT LIGHT SWITCH**

The exterior compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1)

### **REAR CENTER COMPARTMENT**

There shall be one (1) full height compartment located at the rear of the apparatus. The compartment shall be 60" high x 24" deep x 42" wide and be equipped with a natural finish roll up door. The compartment shall be partitioned off from the side compartments.

The compartment shall be equipped with the following:

One (1)

### **COMPARTMENT LOUVER**

One (1) louver with filter shall be installed on the back wall of the specified compartments.

One (1)

### **COMPARTMENT LOUVER**

A removable louvered ventilation shall be provided in the afore mentioned compartment.

One (1)

### **ADJUSTABLE SHELVING TRACKS**

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

One (1)

### **500# ROLLOUT TRAY**

One (1) roll-out equipment tray shall be installed in a standard depth compartment. The tray with telescoping slides and roller bearings shall be rated to a maximum load of 500 lbs. Tray shall be of a closed-in design, formed of .188" smooth aluminum plate, fabricated with two (2) inch sides. Trim-Lok edge trim shall be installed on the front lip to afford protection to equipment and firefighter when loading/unloading. Reflective material measuring 1" x 6" shall be installed on the each front corner both on the face and side of tray for firefighter safety.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

The tray unit shall roll out to full extension of the compartment, with latching mechanism to hold tray in both fully-extended and stored positions.

Floor mounted

One (1)

### **PULL-OUT AND DROP-DOWN**

One (1) roll-out and tilt-down equipment tray shall be installed in the customer-specified compartment. The tray with roller bearing tracks shall be rated to a maximum load of 250 lb. Construction shall consist of four (4) inch tall extruded aluminum sides and .125" aluminum plate with two (2) inch formed rear wall and three (3) inch formed front. Trim-Lok edge trim shall be installed on the front lip to afford protection to equipment and firefighter when loading/unloading. Reflective material measuring 1" x 6" shall be installed on the each front corner both on the face and side of tray for firefighter safety.

Track assembly shall allow tray to roll out and tilt down at approximately a 30-degree angle.

Locate on adjustable tracks

One (1)

### **ADJUSTABLE SHELVING TRACKS**

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

One (1)

### **LED COMPARTMENT LIGHTS**

Two (2) ROM vertically mounted roll-up compartment LED door lights shall be installed one each side of the door opening. The compartment lights shall be integrated into the roll-up door tracks with the light actuation with the door opening.

The lights shall have a polycarbonate lens to eliminate breakage from impact and eliminate heat build up.

One (1)

### **COMPARTMENT LIGHT SWITCH**

The exterior compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1)

### **SLIDE OUT VERTICAL LADDER MOUNTINGS**

The ladder shall slide into the right rear of the apparatus, through the right side of the body. The vertically mounted slide in assembly shall be an integral part of the body and accessible through a hinged door.

**STOCK UNIT #14850 BODY SPECIFICATIONS**

Two (2)

PIKE POLE MOUNTING BRACKET

Two (2) tube shall be provided for pike pole mounting. The tube shall have a 2" interior diameter and shall be mounted in the ladder tunnel.

One (1)

HARD SUCTION MOUNTING

One (1) hard suction hose compartment shall be provided at the top of the body compartments, behind the roll up door, on the left side. The design shall allow the hose to be individually removed from the rear of the apparatus. The hard suction hose compartment shall have an aluminum treadplate door with a stainless steel hinge and a push to latch door catches.

One (1)

HARD SUCTION MOUNTING

One (1) hard suction hose compartment shall be provided at the top of the body compartments, behind the roll up door, on the right side. The design shall allow the hose to be individually removed from the rear of the apparatus. The hard suction hose compartment shall have an aluminum treadplate door with a stainless steel hinge and a push to latch door catches.

One (1)

FOLDING STEP LEFT SIDE FRONT

Three (3) 8" square folding steps of chrome plated die cast aluminum shall be provided. The steps shall comply to NFPA #1901 non-slip standards and shall be installed on the left side front compartment face.

One (1)

FOLDING STEP RIGHT SIDE FRONT

Two (2) 8" square folding steps of chrome plated die cast aluminum shall be provided. The steps shall comply to NFPA #1901 non-slip standards and shall be installed on the right side front compartment face.

One (1)

HANDRAIL TOP OF BODY SIDES

Two (2) extruded aluminum non-slip handrails, approximately 12" in length, shall be provided and mounted, one (1) each side at the top of the body sides, at the front of the apparatus body.

One (1)

FRONT BODY PROTECTION PANELS

Aluminum tread plate overlays and panels shall be installed on the front of the body from the lower edge to the top of the compartment doors.

One (1)

REAR BODY PROTECTION PANELS

Smooth aluminum shall be installed on the rear of the body, to allow for the proper application and installation of a "Chevron" stripe on the rear.

**STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

POLISHED COMPARTMENT TOP WELDS

The compartment top welds to be polished.

One (1)

REAR STEP - 16" BOLT-ON

A 16" deep step surface shall be provided at the rear of the apparatus body, bolted in place and easily removable for replacement or repair. The tailboard shall be constructed of .188" aluminum diamond plate or equal non-slip surface in compliance with NFPA #1901 standards.

The maximum height of the step assembly shall be no more than 24" from the ground when the apparatus is in the loaded condition. A label shall be provided warning personnel that riding on the rear step while the apparatus is in motion is prohibited.

One (1)

FOLDING STEP LEFT REAR

Four (4) 8" square folding steps of chrome plated die cast aluminum shall be provided. The steps shall comply to NFPA #1901 non-slip standards and shall be installed on the rear left side of the body.

One (1)

HANDRAIL REAR STEP

Two (2) extruded aluminum non-slip handrails, approximately 48" in length, shall be provided and vertically mounted on the rear of the apparatus, one (1) on each side of the body.

One (1)

HANDRAIL BELOW HOSEBED

One (1) extruded aluminum non-slip handrail, approximately 48" in length, shall be provided and horizontally mounted below the hosebed on the rear of the apparatus.

One (1)

HANDRAIL TOP OF BODY SIDES

Two (2) extruded aluminum non-slip handrails, approximately 12" in length, shall be provided and mounted, one (1) each side at the top of the body sides, at the rear of the apparatus body.

One (1)

EXTRUDED ALUMINUM RUB RAILS

Full body length polished aluminum rub rails shall be bolted in place on the lower right and left body sides. The side rub rails shall be a heavy extruded aluminum "C" channel. Red and white reflective material shall be applied to the vertical surface of the "C" channel.

**STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

NYLON SPACERS FOR RUB RAILS

There shall be nylon spacers provided between the rubrail and the body. This shall allow wash out and replacement in the event of damage.

One (1)

WHEEL WELL COMPARTMENT LOCATION

One (1) wheel well compartment shall be located on the left side in ahead of the rear wheel well panel.

One (1)

FOUR (4) SCBA BOTTLE COMPARTMENT IN WHEELWELL

One (1) bottle storage compartment for four (4) SCBA bottles shall be provided and located in the rear wheel well of the apparatus body.

The storage compartment shall be constructed entirely of aluminum. The door assemblies shall be provided with a gasket between door and body side, bolted in-place and removable for repair or replacement. A painted door shall be provided.

Four (4)

SCBA COMPARTMENT STRAPS

Four (4) one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

One (1)

WHEEL WELL COMPARTMENT LOCATION

One (1) wheel well compartment shall be located on the left side behind the wheel well panel.

One (1)

FUEL PIPING AND FILL CAP

There shall be a fuel fill cap provided in the recessed area of the left side rear wheel well clearly marked, "DIESEL FUEL ONLY". The fill shall be piped to the fuel tank.

One (1)

WHEEL WELL COMPARTMENT LOCATION

One (1) wheel well compartment shall be located on the right side in ahead of the rear wheel well panel.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### **FOUR (4) SCBA BOTTLE COMPARTMENT IN WHEELWELL**

One (1) bottle storage compartment for four (4) SCBA bottles shall be provided and located in the rear wheel well of the apparatus body.

The storage compartment shall be constructed entirely of aluminum. The door assemblies shall be provided with a gasket between door and body side, bolted in-place and removable for repair or replacement. A painted door shall be provided.

Four (4)

### **SCBA COMPARTMENT STRAPS**

Four (4) one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

One (1)

### **WHEEL WELL COMPARTMENT LOCATION**

One (1) wheel well compartment shall be located on the right side in behind the rear wheel well panel.

One (1)

### **FLOOR DRY COMPARTMENT IN WHEELWELL**

One (1) storage compartment for floor dry shall be provided and located in the rear wheel well of the apparatus body. A door shall be provided.

One (1)

### **LOW VOLTAGE ELECTRICAL SYSTEM SPECIFICATIONS**

The electrical system shall include all panels, electrical components, switches and relays, wiring harnesses and other electrical components. The electrical equipment installed by the apparatus manufacturer shall conform to current automotive electrical system standards, the latest Federal DOT standards, and the requirements of the applicable NFPA standards.

All wiring shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for the protected circuit. Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent. The wiring and wiring harness and insulation shall be in conformance to applicable SAE and NFPA standards. The wiring harness shall conform to SAE J-1128 with GXL temperature properties. All exposed wiring shall be protected in a loom with a minimum 289 degree Fahrenheit rating. All wiring looms shall be properly supported and attached to body members. The electrical conductors shall be constructed in accordance with applicable SAE standards, except when good engineering practice requires special construction.

## STOCK UNIT #14850 BODY SPECIFICATIONS

The wiring connections and terminations shall use a method that provides a positive mechanical and electrical connection and shall be installed in accordance with the device manufacturer's instructions. Electrical connections shall be with mechanical type fasteners and large rubber grommets where wiring passes through metal panels.

The wiring between the cab and body shall be joined using Deutsche type connectors or an enclosed in a terminal junction panel area. This system will permit body removal with minimal impact on the apparatus electrical system. All connections shall be crimp-type with insulated shanks to resist moisture and foreign debris such as grease and road grime. Weather-resistant connectors shall be provided throughout to ensure the integrity of the electrical system.

There shall be no exposed electrical cabling, harnesses, or terminal connections located in compartments, unless they are enclosed in a junction box or covered with a removable electrical panel. The wiring shall be secured in place and protected against heat, liquid contaminants and damage. Wiring shall be uniquely identified every three-inches (3") by color coding or permanent marking with a circuit function code and identified on a reference chart or electrical wiring schematic per requirements of applicable NFPA #1901 standards.

The electrical circuits shall be provided with low voltage overcurrent protective devices. Such devices shall be accessible and located in required terminal connection locations or weather resistant enclosures. The overcurrent protection shall be suitable for electrical equipment and shall be automatic reset type and meet SAE standards. All electrical equipment, switches, relays, terminals, and connectors shall have a direct current rating of 125 percent of maximum current for which the circuit is protected. The system shall have electro-magnetic interference suppression provided as required in applicable SAE standards.

The electrical system shall include the following:

- a) Electrical terminals in weather exposed areas shall have a non-conductive grease or spray applied. A corrosion preventative compound shall be applicable to all terminal plugs located outside of the cab or body.
- b) The electrical wiring shall be harnessed or be placed in a protective loom.
- c) Holes made in the roof shall be caulked with silicone. Large fender washers shall be used when fastening equipment to the underside of the cab roof.
- d) Any electrical component that is installed in an exposed area shall be mounted in a manner that will not allow moisture to accumulate in it.
- e) A coil of wire must be provided behind an electrical appliance to allow them to be pulled away from mounting area for inspection and service work.
- f) All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

The warning lights shall be switched in the chassis cab with labeled switches in an accessible location. Individual rocker switches shall be provided only for warning lights provided over the minimum level of warning lights in either the stationary or moving modes. All electrical equipment switches shall be mounted on a switch panel mounted in the cab convenient to the operator. The warning light switches shall be of the rocker type. For easy nighttime operation, an integral indicator light shall be provided to indicate when the circuit is energized. All switches shall be appropriately identified as to their function.

A single warning light switch shall activate all required warning lights. This switch will allow the vehicle to respond to an emergency and "call for the right of way". When the parking brake is applied, a "blocking right of way" system shall automatically activate per requirements of the applicable NFPA standards. All "clear" warning lights shall be automatically turned off upon application of the parking brake.

### **NFPA REQUIRED TESTING OF ELECTRICAL SYSTEM**

The apparatus shall be electrically tested upon completion of the vehicle and prior to delivery. The electrical testing, certifications, and test results shall be submitted with delivery documentation per requirements of the applicable NFPA standards. The following minimum testing shall be completed by the apparatus manufacturer:

#### **1. Reserve capacity test:**

The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged. The engine shall be shut off and the minimum continuous electrical load shall be activated for ten (10) minutes. All electrical loads shall be turned off prior to attempting to restart the engine. The battery system shall then be capable of restarting the engine. Failure to restart the engine shall be considered a failed test.

#### **2. Alternator performance test at idle:**

The minimum continuous electrical load shall be activated with the engine running at idle speed. The engine temperature shall be stabilized at normal operating temperature. The battery system shall be tested to detect the presence of battery discharge current. The detection of battery discharge current shall be considered a test failure.

#### **3. Alternator performance test at full load:**

The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed. The test duration shall be a minimum of two (2) hours. Activation of the load management system is permitted during this test. However, if an alarm sounds due to excessive battery discharge, as detected by the system requirements in the NFPA standards, or a

## STOCK UNIT #14850 BODY SPECIFICATIONS

system voltage of less than 11.7 volts dc for more than 120 seconds is present, the test has failed.

### 4. Low voltage alarm test:

Following the completion of the above tests, the engine shall be shut off. The total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates. The battery voltage shall be measured at the battery terminals. With the load still applied, a reading of less than 11.7 volts dc for a 12 volt system shall be considered a test failure. The battery system shall then be able to restart the engine. Failure to restart the engine shall be considered a test failure.

### NFPA REQUIRED DOCUMENTATION

The following documentation shall be provided on delivery of the apparatus:

- a. Documentation of the electrical system performance tests required above.
- b. A written load analysis, including:
  1. The nameplate rating of the alternator.
  2. The alternator rating under the conditions.
  3. Each specified component load.
  4. Individual intermittent loads.

One (1)

### LOW VOLTAGE ELECTRICAL SYSTEM

The electrical junction or terminal boxes shall be weather resistant and located away from water spray conditions. In addition, the main body junction panel shall house the automatic reset breakers and relays where required. The main body junction panel shall be located in the pump compartment.

One (1)

### LOAD MANAGER 2

The apparatus shall be equipped with a Kussmaul model 091-79 Automatic Load Shedding System for performing continuous electrical load management. The Load Manager shall have the following features:

- Monitor 12-volt system and detect low voltage.
- Capability to control two (2) loads.
- Automatic reset when voltage rises.
- Adjustable voltage setpoint.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

The load manager shall be protected against reverse polarity and shorted outputs, and be enclosed in a enclosure to enhance EMI/RFI protection. Rosenbauer shall provide for all electrical loads in excess of the NFPA minimum electrical requirements that exceed the alternator output.

One (1)

### **DASH MOUNTED EMERGENCY ELECTRICAL SWITCH PANEL**

An electrical switch panel shall be designed and mounted in the cab dash area. All switches shall be provided with backlighted snap-in legend inserts.

### **SWITCHES**

All emergency light switches shall be lighted, rocker style. Switches shall be internally lit when the switch circuit is in the on position. A plug-in identification label is to be provided and installed adjacent to each rocker switch with backlighting provided behind the label.

An internally lighted "master" switch shall be provided and wired through a heavy-duty relay to activate power to the emergency lights.

One (1)

### **BATTERY SYSTEM**

The chassis shall be provided with 12 volt Group 31, 650 CCA maintenance free batteries. The batteries shall be wired into the system to form a "single" battery system.

One (1)

### **MASTER ELECTRIC SWITCH**

One (1) chassis provided battery disconnect switch shall be located conveniently to the driver of the apparatus. The switch shall disconnect the 12 volt power supply from the battery system.

One (1)

### **BATTERY CHARGER AND AIR COMPRESSOR**

One (1) Kussmaul Pump Plus 1000 model #091-56-12-B1 battery charger and air compressor system shall be installed. The 120 volt compressor system shall be designed to maintain the air pressure in the chassis brake system whenever the pressure drops below a predetermined level.

The battery charger shall be supplied from the 120 volt shore power receptacle and be a fully automatic high output charging system. The unit shall be mounted in a clean dry area and will be accessible for service and/or maintenance.

One (1)

### **AUTO-EJECT**

A Kussmaul "Super Auto-Eject" 20-amp automatic disconnect device shall be provided and installed on the 110 volt shoreline connection complete with weatherproof cover and matching plug. The Auto-Eject shall be activated by the chassis starter switch to disconnect the plug. The Super Auto-Eject shall be

## STOCK UNIT #14850 BODY SPECIFICATIONS

completely sealed to prevent contamination of the mechanism by inclement weather and road conditions. The Super Auto-Eject shall have an internal switch to open and close the AC circuit after the mating connector is inserted and before the connector is removed.

One (1)

### SHORE POWER PLUG

The shore power plug shall be located over the left front wheel of the custom chassis.

One (1)

### ALTERNATOR

The alternator shall be supplied by the chassis manufacturer.

One (1)

### INTERIOR CAB CEILING LIGHT

One (1) ceiling mounted dome light with on/off switch shall be supplied with the chassis.

One (1)

### ENGINE COMPARTMENT LIGHT

One (1) 12 volt incandescent light with switch shall be mounted in the engine enclosure.

One (1)

### PUMP ENCLOSURE LIGHTS

One (1) incandescent work light shall be provided in the pump enclosure. The control switch shall mounted on the light head.

One (1)

### BACK-UP ALARM

One (1) automatic electric back-up alarm shall be wired to the back-up light circuit, and mounted under the rear of the apparatus body.

One (1)

### MARKER LIGHTS

LED marker lights shall be installed on the vehicle in conformance to the Department of Transportation requirements.

One (1)

### LICENSE PLATE BRACKET

One (1) license plate bracket shall be provided at the rear bumper. The bracket shall have a light and shall be chrome plated.

One (1)

### TAIL LIGHTS

Two (2) Whelen LED tail/brake lights shall be provided. The rectangular 4"x6" light shall be red.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### **TURN SIGNALS**

Two (2) Whelen turn signals shall be provided. The rectangular LED light shall be 4" x 6" in dimension.

One (1)

### **BACKUP LIGHTS**

Two (2) Whelen Series 600, halogen backup lights shall be installed on the rear of the apparatus body. The dimensions shall be 4" x 6" and the lens color shall be clear.

One (1)

### **THREE LIGHT BEZEL**

Two (2) tail light cluster bezels shall be supplied. Each bezel shall be designed to hold the specified rear lights located at the lower rear corners of the body.

One (1)

### **MID BODY LED TURN SIGNALS**

Two (2) mid body LED turn signals shall be provided. The LED lights shall be approximately 1-1/4" x 4" in dimension. The location of the turn lights shall be at mid-body near the rear wheel axle.

One (1)

### **CAB GROUND LIGHTS**

The cab ground lights shall be supplied with the cab chassis.

One (1)

### **PUMP PANEL GROUND LIGHTS**

Two (2) incandescent ground lights shall be installed under the pump panel running boards. One (1) light shall be located on the driver's side and one (1) light located on the officer's side of the apparatus.

One (1)

### **REAR STEP GROUND LIGHTS**

Two (2) incandescent ground lights shall be installed under rear step of the apparatus.

One (1)

### **GROUND LIGHT SWITCH**

The ground lights shall automatically activate when the parking brake is applied.

Two (2)

### **STEP LIGHT**

Two (2) incandescent step light with clear lens shall be installed to illuminate the rear step of the apparatus body.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### **STEP / WALKWAY LIGHT SWITCH**

The step/walkway light switch shall be installed and wired to the parking brake.

One (1)

### **DECK LIGHT MOUNTING**

The deck lights shall be installed at the rear of the hose bed.

One (1)

### **DECK LIGHTS**

One (1) Unity Model #AG spotlight and one (1) Unity Model #AG floodlight, with 50 watt bulbs shall be installed. The lights shall have an "on-off" switch.

Two (2)

### **SCENE LIGHT**

Two (2) Whelen Series 600 halogen 4" x 6" scene light shall be installed. The light shall be installed with a 12 degree downward angle. A switch for the scene light(s) shall be provided in the cab.

Two (2)

### **SCENE LIGHT LOCATION**

Two (2) scene light shall be located on the rear of the apparatus body.

One (1)

### **SCENE LIGHT SWITCH**

One (1) scene light switch shall be installed on the cab dash to activate rear scene lights upon engagement.

One (1)

### **SCENE LIGHT SWITCH**

The rear scene lights shall activate automatically upon placing the transmission into reverse.

One (1)

### **DOOR OPEN/HAZARD WARNING LIGHT**

One (1) red flashing, warning light shall be provided and installed in the driver's compartment to indicate an open passenger or apparatus compartment door. The warning light shall also be attached to folding equipment racks and light towers as specified. The light shall be a flashing rectangular incandescent marker light with a red lens and shall be properly marked and identified.

One (1)

### **ELECTRIC SIREN AND CONTROL**

One (1) Whelen model #295HFS2 electronic remote siren amplifier with flush mount control head shall be mounted in the cab. This unit shall feature an electronic air horn, wail, yelp, hi-lo and shall have a hard wired PA microphone.

## STOCK UNIT #14850 BODY SPECIFICATIONS

One (1)

### SPEAKER

One (1) Whelen Model #SA314A, cast aluminum speaker shall be installed. The speaker shall be wired to the electric siren located in the cab.

One (1)

### SPEAKER LOCATION

The siren speaker shall be installed in the right side of the apparatus bumper.

One (1)

TEN (10) WELDON #V46W-R 4X6 DIAMOND BACK LED RED LED LIGHTS WITH RED LENS SHALL BE PROVIDED FOR THE LOWER LEVEL.

FOUR (4) WELDON #0B80-2336-00 CHROME BEZEL KITS FOR 4X6 DIAMONDBACK LIGHTS

ONE (1) WELDON #9188-1572-00 72" LED NFPA LIGHTBAR MOUNTED ON THE CAB ROOF

ONE (1) WELDON #7150-7160-10 LED BEACON RED UPPER REAR

ONE (1) WELDON #7150-7160-20 LED BEACON AMBER UPPER REAR

One (1)

### GENERATOR

One (1) Onan CMSD 7500 watt, 120/240 volt generator shall be provided. The unit shall be a water cooled diesel engine equipped with high engine temp/low oil pressure shutdown. The unit shall be three wire, single phase 60 Hz. with full rated power available from a single 120 volt outlet, a single 240 volt outlet or a combination of both. The oil drain, oil dipstick, fuel filter and oil filter for the generator must be easily accessible for maintenance. The generator oil drain shall be extended through the compartment flooring and terminate below the chassis frame rails. The generator exhaust shall be routed through the bottom of the compartment or remote location.

A diesel fuel pick-up tube shall be provided in the chassis fuel tank along with an electric fuel pump for the generator fuel system.

Electric start provisions shall be furnished for the generator from the chassis battery system. Generator pre-heat, start and stop switches shall be provided at the generator control panel.

The generator shall have approximate dimensions of 38" L x 21" W x 24" H and a weight of 490 pounds.

## STOCK UNIT #14850 BODY SPECIFICATIONS

### Data Label

A permanent data label indicating the following information shall be applied:

- 1) Rated voltage
- 2) Phase
- 3) Frequency
- 4) Amperage
- 5) Continuous Watts
- 6) Peak Watts

One (1)

### GENERATOR INSTALLATION

The generator shall be mounted on shock and anti-vibration rubber mountings and be equipped with a removable lifting bracket.

A battery powered starter motor shall provide the generator starting system with the 12-volt power supplied from the chassis battery system. The ignition switch shall be located at the generator circuit breaker panel area. The 12-volt supply line from battery shall be adequate size and a circuit breaker installed at the power source.

The generator shall be installed in a location that will provide for adequate cooling air in accordance with manufacturer's recommendations. When mounted in an enclosed compartment, it shall be designed to operate with doors "open".

The generator muffler and flexible exhaust pipe shall be securely supported and shall be shielded or insulated to prevent heating of the body, electrical components or equipment mounting. The exhaust system shall be installed so fumes, vapors, heat and vibrations do not enter the interior compartments. The exhaust outlet piped to the exterior and located so that the exhaust is directed away from operator's position. The exhaust piping and discharge shall be located or shielded to prevent thermal damage to the apparatus or equipment. Where parts of the exhaust system are exposed, so that they are likely to cause injury to operating personnel, suitable protective guards shall be provided.

### Electrical System Installation

The line voltage electrical system shall comply with applicable NFPA standards and shall comply also to the applicable sections of the National Electric Code #70 standards. Line voltage carrying equipment down stream of the power source shall be "listed" (where available) and installed in accordance with manufacturers instructions. The electrical equipment installed shall be suitable for intended use and type of locations (wet, dry, or underbody and chassis).

The grounding and bonding shall comply to applicable sections of NFPA standards. The chassis frame rail, body sheet metal, and cab sheet metal shall be properly bonded per NFPA schematic. The bonding copper conductor shall be rated at 115 % of current rating of power source.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

### Over-Current Protection Panel

Manually re-settable overcurrent devices shall be installed to protect the line voltage electrical system components. A main overcurrent protection device shall be provided that is either incorporated in the power source or is connected to the power source by a power supply assembly. The size of the main overcurrent protection device shall not exceed 100 percent of the nameplate amperage rating on the power source specification label or the rating of the next larger available size overcurrent protection device where so recommended by the power source manufacturer.

The conductor used in the power supply assembly between the output terminals of the power source and the main overcurrent protection device shall not exceed 144 inches in length. If the power supply cable is longer than 144", a separate master disconnect switch shall be located at the generator.

Overcurrent protection devices shall be provided for each individual circuit and shall be sized at not less than 15 amps in accordance with NEC. Each overcurrent protection device shall be marked to identify the function of the circuit it protects. The circuit breaker panel and instruments shall be located so that all circuit breakers are readily visible under normal operating conditions. The panel shall be readily visible and located so that there is unimpeded access to the panel board controls.

### Labeling Of Equipment

All circuit breakers shall be labeled and shall be provided for all interior and exterior outlets indicating output amperage, voltage and phase.

### Instruction Label

A label that provides the operator with the essential power source operating instructions, including the power-up and power-down sequence shall be permanently attached to the apparatus at any point where such operations can take place.

One (1)

### CIRCUIT BREAKER BOX

One (1) circuit breaker box for single phase voltage equipment shall be provided capable of holding twelve (12) breakers.

One (1)

### GENERATOR REMOTE START SWITCH

One (1) remote start/stop switch for the generator shall be located in the cab. A preheat function shall be included for diesel powered generators. An indicator light shall illuminate when the generator is running. The switch shall be centrally located for use by both seating positions.

**STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

GENERATOR FUEL SUPPLY

The generator fuel pickup shall be connected to the chassis fuel tank. All necessary piping for connection to the generator shall be included.

One (1)

GENERATOR MOUNTING LOCATION

The generator shall be installed over the fire pump enclosure.

One (1)

LINE VOLTAGE WIRING INSTALLATION

Line voltage wiring in the vehicle shall be through Carflex, or equal flexible moisture resistant reinforced conduit, with proper seal-tight connectors and hardware. Type THHN or approved equal stranded copper conductors with 600-volt insulation rated for at least 194 degrees shall be installed in the conduit. Wiring of the apparatus with Type SO or similar flexible electrical cord shall not be acceptable. All electrical junction boxes shall conform to the National Electric Code and be fully accessible for service and not hidden in walls or ceiling.

Electrical conduit shall be supported within 6 inches of any junction box and at a minimum of every 24 inches of run. Supports shall be made of corrosion protected metal and that does not cut or abrade the conduit and shall be mechanically fastened to the vehicle.

Electrical conduit shall not be attached to chassis suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components, or low voltage wiring and shall be separated by a minimum of 12 inches from exhaust piping or properly shielded and separated from fuel lines by a minimum of 6 inches distance.

All wiring connections and terminations shall provide a positive mechanical and electrical connection. Connectors shall be installed in accordance with the manufacturer's instructions. Use of wire nuts or insulation displacement and insulation piercing connectors shall be avoided.

Two (2)

120V ELECTRIC RECEPTACLE -- TWIST LOCK

Two (2) 120-volt 20 amp twist lock (NEMA L5-20) receptacle with spring loaded weatherproof cover shall be provided with wiring to the circuit breaker panel.

Two (2)

ELECTRIC RECEPTACLE LOCATION -- REAR EXTERIOR BODY

The electric receptacle shall be located on the exterior left rear face of the body.

Two (2)

ELECTRIC RECEPTACLE LOCATION -- REAR EXTERIOR BODY

The electric receptacle shall be located on the exterior right rear face of the body.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### ELECTRIC CABLE REEL

One (1) Hannay ECR-1600 series electric cable reel with an electric rewind shall be installed on the vehicle. The reel shall be designed for use with 120 volt, three (3) wire cable. The duty rating of the cable reel shall be for continuous usage. The reel shall be installed so that it is easily accessible for cord access and maintenance. A 12-volt motor controlled by a push button switch located in a convenient position and properly labeled shall perform the electric rewind function.

The installation of the cable reel shall meet applicable sections of the NFPA standards.

### Reel Capacity

The reel shall be sized to hold 110 percent of the capacity needed for the specified cable length. The wire size shall be in accordance with the National Electric Code.

### Labeling

An information label shall be installed in a location visible adjacent to any permanently connected reel with the following data:

1. Voltage
2. Phase
3. Current type
4. Current rating
5. Total cable length

### Electrical Supply Wiring To Reel

The wiring shall end in a sealed conduit box at the reel with mechanical connectors to allow removal of the reel. Appropriately, sized wire and circuit breakers shall be utilized.

One (1)

### ELECTRIC CABLE REEL - PUMP COMPARTMENT

The electric cable reel shall be installed in the right side dunnage area of the pump compartment.

One (1)

### ELECTRIC CABLE - 120 VOLT

A two hundred foot (200') length of 10/3 black electric cable shall be installed with specified plugs. The cable shall be type SEO-WA with a 20 amp, 120 volt rating.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### **CABLE ELECTRIC RECEPTACLE - 120 VOLT TWIST LOCK**

The electric cable shall be configured with a 120-volt, three prong, twist lock female receptacle.

One (1)

### **ELECTRIC REEL CABLE ROLLER**

One (1) four-sided nylon roller unit for the electric cable shall be installed on specified reels. The roller unit shall be mounted in the specified location to permit the cable to feed directly off the reel.

One (1)

### **JUNCTION BOX**

One (1) Akron GFE electrical junction box with 12" pigtail and plug shall be provided. The unit shall have an integral pilot light to indicate electrical current.

The unit shall be equipped with four (4) 120 volt 20 amp NEMA (L5-20) twist lock receptacles, each with a hinged, weatherproof cover.

One (1)

### **JUNCTION BOX STORAGE BRACKET**

One (1) aluminum storage bracket designed to hold an electric junction box shall be supplied. The holder shall be mounted in the same compartment as the specified cable reel.

One (1)

### **FLOODLIGHT LOCATION - REAR OF CAB**

The mounting location of the floodlights shall be at the rear of the cab on both sides.

Two (2)

### **TELESCOPIC 500 WATT FLOODLIGHT**

Two (2) Fire Research Optimum model OPA530-S50 side mount push up telescopic light shall be installed. The light pole shall be anodized aluminum and have a knurled twist lock mechanism to secure the extension pole in position. The extension pole shall rotate 360 degrees. The outer pole shall be a grooved aluminum extrusion and qualify as an NFPA compliant handrail. The pole mounting brackets shall have a 2 3/4" offset. Wiring shall extend from the pole bottom with a 4' retractile cord.

The lamphead shall have one (1) quartz halogen 500 watt 120 volt bulb. The bulb will draw 4.2 amps and generate 10,500 lumens. The bulb shall be accessible through the front. The lamphead shall incorporate a vacuum deposit polished reflector and two optimizing mirrors to produce a uniform beam that lights up an area 100° vertically by 150° horizontally. The lamphead shall have a heat dissipating curved front lens. The curve of the lens shall have a radius of 5.16 inches to optimize light emission. The lamphead shall be no more than 4 3/4" deep by 5 1/8" high by 8 3/4" wide. Lamphead and brackets shall be powder coated white.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### **BODY PAINT PROCESS**

All bright metal fittings, if unavailable in stainless steel shall be heavily chrome plated. Iron fittings shall be copper plated prior to chrome plating.

All seam shall be caulked both inside and along the exterior edges with a urethane automotive sealant to prevent moisture from entering between any body panel.

The body and all parts shall be thoroughly washed with a grease cutting solvent (PPG DX330) prior to any sanding. After the body has been sanded and the weld marks and minor imperfections are filled and sanded, the body shall be washed again with (PPG DX330) to remove any contaminants on the surface.

The first coating to be applied is a pre-treat self etching primer (PPG DX1787) (.5 to 1.0 dry film build) for maximum adhesion to the body material. The next two to four coats (depending on need) shall be an acrylic urethane primer surfacer (PPG K38). The film build shall be 4-6 mils when dry. The primer surfacer coat, after appropriate dry time, shall be sanded with 320-600 grit sandpaper to ensure maximum gloss of the paint. The last step is the application of at least three coats of PPG Concept acrylic urethane two-component color (single stage). The film build being 2-3 mils dry. The single stage acrylic urethane, when mixed with component (PPG DCX61) catalyst shall provide a UV barrier to prevent fading and chalking.

All products and technicians are certified by PPG every two (2) years.

One (1)

### **INTERIOR COMPARTMENT FINISH**

The interior compartment walls shall be coated with a heavy spray on lining material. The compartments shall be cleaned with a wax and grease remover and then caulked with a urethane caulk. The compartments are then sprayed with one coat of epoxy primer, then two to three coats of urethane bed liner. The lining material shall dry to form an impervious one piece covering to protect the compartment interiors from damage. The lining material shall be gray in color and applied on eight (8) compartments.

One (1)

### **WHEEL PAINTING**

The exterior faces of the front wheels and outer rear wheels only, shall be finish painted to match the apparatus body. Wheels shall be properly prepared and finished with primer coats and top coats as specified.

One (1)

### **TOUCH-UP PAINT**

One (1) two (2) ounce bottle of touch-up paint shall be furnished with the completed truck at final delivery.

## **STOCK UNIT #14850 BODY SPECIFICATIONS**

One (1)

### **REFLECTIVE STRIPING**

A 1" x 6" x 1" wide 3M brand Scotchlite reflective multi-stripe shall be affixed to the perimeter of the vehicle. There shall be a 1" gap between each of the stripes. Striping shall conform to applicable NFPA requirements. At least 50% of the perimeter length of each side and width of the rear, and at least 25% of the perimeter width of the front of the vehicle shall have reflective striping.

The striping shall be applied in a large "Z" pattern.

One (1)

### **COLOR OF STRIPING MATERIAL**

The color of the 3M brand striping material shall be gold.

One (1)

### **CHEVRON STRIPING**

The entire rear portion of the body shall have 3M reflective red and amber striping installed. The chevron style striping shall be applied at a 45-degree upward angle pointing towards the center upper portion of the rear panel.

One (1)

### **EQUIPMENT PAYLOAD WEIGHT ALLOWANCE**

In compliance with NFPA #1901 standards, the apparatus shall be engineered to provide an allowance of 2000 pounds of fire department provided loose equipment.