SYRACUSE FIRE DEPARTMENT
SVI #824
PRODUCTION SPECIFICATION

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INTERNET IN-PROCESS SITE

The Bidder shall post and maintain a website where the Syracuse Fire Department will be able to view digital images of their apparatus as its being manufactured. The digital images shall be posted once a week starting when the body begins production or when the cab/chassis arrives and shall continue until the final completion of the apparatus.

ENGINEERING DRAWINGS

The evaluation of bids shall also be based on design, engineering reliability, and completeness of drawings. No Bidder's proposal shall be considered unless complete engineering drawings to these specifications are submitted with the request for proposal package. Failure to submit factory prepared blueprints with bid shall result in automatic rejection. Submission of "bid drawings" are in addition to "production drawings" which must be submitted for Syracuse Fire Department approval prior to construction. Bid drawings shall allow the Syracuse Fire Department the ability to fully evaluate required product.

The engineering drawings shall be produced on computer aided design (CAD) equipment to assure critical tolerance and detail only available with CAD equipment. The drawings shall be on "B" size paper, 17" x 11" in size, and views must be 1/4" = 1' - 0" scale. This shall allow the Syracuse Fire Department the ability to compare drawings of all manufacturers on an "equal" basis. The drawings shall be completed only by the body manufacturer, and must be exactly to Syracuse Fire Department specifications. Submission of "similar to" drawings or "statements referring to later submission of drawings after award of contract" shall be automatically rejected.

Since the request for proposal package will require extensive evaluation by Syracuse Fire Department, all Bidders must submit exactly the same engineering drawings at the same scale, on the same size paper. For easy comparison of drawings, they must be on a 17" x 11" sheet as follows:

- All bid drawings will be stamped BID DRAWING.
- All items shown on the drawing will be pre-designed with regards to layout and functionality prior to the completion of the BID DRAWING.
- Two (2) 17” x 11” color drawings will be supplied with the bid proposal. Black and white or blue line drawings will not be accepted.
- There shall be five (5) views of the truck with the doors closed (Top, Left, Right, Front, Rear), four (4) views of the truck with the doors open (Top, Left, Right, Rear) and four (4) views of any walk-in area (Top, Left, Right, Rear).
- All compartment door openings and usable space shall be clearly shown in inches.
- The trucks overall length, height, width, wheelbase and cab-to-axle dimensions shall be clearly shown.
- The angles of approach and departure shall be shown in the maximum loaded condition to the nearest degree.
- All lighting packages will be clearly shown on the drawing and verified accurate per the most current NFPA standards (when applicable).
- The exterior view shall show all scene lights, marker lights, speakers, horns, exhaust, tow points, exterior outlets, windows, winch receivers, tow hitches, exterior ladders and any other item important to the function of the vehicle.
- The open view shall show all trays, shelves, air system components, hydraulic components, tool boards, storage modules and any other items important to the function of the vehicle.
- The interior view for all walk-in areas shall show all seating positions, desks, cabinets, windows, tech equipment, radio locations and any other item important to the function of the vehicle.
- Any changes to the BID drawing will require a revision which will be clearly annotated in the upper right hand side of the drawing showing the revision number, reason for the revision, date and who made the changes.

Text Block Items;

- Purchaser's name.
- Body size and material type.
- Chassis manufacturer and model number.
- Unit description.
- Wheelbase (WB) , Cab-to-axle (CA) distance.
- Overall length (OAL), Overall width, (OAW), Overall height (OAH).
- Scale, date, drawn by, drawing number and sheet number.

TESTING

ROAD TEST

Road test shall be conducted in accordance with this section to verify that the completed apparatus is capable of compliance with Roadability Section.

The tests shall be conducted at a location and in a manner that does not violate local, state or provincial or federal traffic laws.

The tests shall be conducted on dry, level, paved roads that are in good condition. The apparatus shall be loaded to its estimated in service weight.

The engine shall not operate in excess of the maximum governed speed. Acceleration tests shall consist of two runs in opposite directions over the same route. The fire apparatus shall attain a speed of 35 mph (55 km/hr) from a standing start within 25 seconds. The fire apparatus shall attain a minimum top speed of 50 mph (80 km/hr).

If the apparatus is equipped with an auxiliary braking system, the Body Manufacturer shall road test the system to confirm that the system is functioning as intended by the auxiliary braking system manufacturer.

If the apparatus is equipped with an air brake system, the service brakes shall bring the apparatus, when loaded to it's GVWR, to a complete stop from an initial speed of 20 mph (32.2 km/hr) in a distance not exceeding 35 ft (10.7 m) by actual measurement on a paved, level, dry surface road that is free of loose material, oil or grease.

If the apparatus is equipped with a hydraulic brake system, the service brakes shall bring the apparatus, when loaded to its GVWR, to a complete stop from an initial speed of 30 mph (48.2 km/hr) in a distance not exceeding 88 ft (26.8 m) by actual measurement on a paved, level, dry surface road that is free of loose material, oil or grease.

LOW VOLTAGE - ELECTRICAL SYSTEM PERFORMANCE TEST

The vehicles low voltage electrical system shall be tested and certified by the manufacturer. The certified test results shall be delivered with the completed vehicle. Tests shall be performed when the air temperature is between 0°F and 110°F (–18°C and 43°C).

TEST SEQUENCE

The following three (3) tests shall be performed in the order in which they appear below. Before each test, the batteries shall be fully charged until the voltage stabilizes at the voltage regulator set point and the lowest charge current is maintained for ten (10) minutes. Failure of any of these tests shall require a repeat of the sequence.

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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 test failure of the battery system.

2. ALTERNATOR PERFORMANCE TEST

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.

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 shall be permitted during this test.

An alarm sounded by excessive battery discharge, as detected by the warning system required in 13.3.4, or a system voltage of less than 11.8 V dc for a 12 V nominal system, 23.6 V dc for a 24 V nominal system, or 35.4 V dc for a 42 V nominal system for more than 120 seconds shall be considered a test failure.

3. LOW VOLTAGE ALARM TEST

The following test shall be started with the engine off and the battery voltage at or above 12 V for a 12 V nominal system, 24 V for a 24 V nominal system or 36 V for a 42 V nominal system.

With the engine 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.

The test shall be considered a failure if the alarm does not sound in less than 140 seconds after the voltage drops to 11.70 V for a 12 V nominal system, 23.4 V dc for a 24 V nominal system, or 35.1 V for a 42 V nominal system.

The battery system shall then be able to restart the engine. Failure to restart the engine shall be considered a test failure.

LOW VOLTAGE - ELECTRICAL SYSTEM PERFORMANCE TEST

DOCUMENTATION

The manufacturer shall deliver the following with the fire apparatus:

1) Documentation of the electrical system performance tests
2) A written electrical load analysis, including the following:
   a) The nameplate rating of the alternator
   b) The alternator rating
   c) Each of the component loads specified that make up the minimum continuous electrical load
   d) Additional electrical loads that, when added to the minimum continuous electrical load, determine the total continuous electrical load
   e) Each individual intermittent electrical load

UL 120/240 VAC CERTIFICATION

The 120/240 volt electrical system shall be tested and certified by Underwriters Laboratories, to perform as listed below;

The prime mover shall be started from a cold start condition, and the unloaded voltage and frequency shall be recorded.

The line voltage electrical system shall be loaded to at least 100% of the continuous rated wattage stated on the power source specification label. Testing with a resistive load bank shall be permitted.

The power source shall be operated in the manner specified by the apparatus manufacturer as documented on instruction plates or in operation manuals. The power source shall be operated at a minimum of 100% of the continuous rated wattage as stated on the power source specification label for a minimum of two (2) hours.

The load shall be adjusted to maintain the output wattage at or above the continuous rated wattage during the entire 2-hour test.

The following conditions shall be recorded at least every 1/2 hour during the test:

1) The power source output voltage, frequency and amperes
2) The prime mover's oil pressure, water temperature and transmission temperature, if applicable
3) The power source hydraulic fluid temperature, if applicable
4) The ambient temperature and power source air inlet temperature

The following conditions shall be recorded once during the test for power sources driven by dedicated auxiliary internal combustion engines:

1) Altitude
2) Barometric pressure
3) Relative humidity

If the generator is driven by the chassis engine and the generator allows for operation at variable speeds, the chassis engine speed shall be reduced to the lowest rpm allowed for generator operation and the voltage and frequency shall be recorded.

The load shall be removed and the unloaded voltage and frequency shall be recorded.

Voltage shall be maintained within ±10% of the voltage stated on the power source specification label during the entire test. Frequency shall be maintained within ±3 Hz of the frequency stated on the power source specification label during the entire test.

The total continuous electrical loads, excluding those loads associated with the equipment defined in NFPA 22.15.7.3.11.2, shall be applied during the testing unless an auxiliary engine drives the power source.

If the apparatus is equipped with a fire pump, the 2-hour certification test of the power source shall be completed with the fire pump pumping at 100% capacity at 150 psi (1000 kPa) net pump pressure. The test shall be permitted to be run concurrently with the pump certification test.

DOCUMENTATION

The Body Manufacturer shall deliver the following with the fire apparatus:

The results of each test shall be recorded on an appropriate form and provided with the delivery of the fire apparatus.

DIELECTRIC VOLTAGE WITHSTAND TEST

The line voltage wiring and permanently connected devices and equipment shall be subjected to a dielectric voltage withstand test of 900 volts for one (1) minute. The testing shall be performed after all body work has been completed.

The test shall be conducted as follows:

1) Isolate the power source from the panel board and disconnect any solid state low voltage components
2) Connect one lead of the dielectric tester to all the hot and neutral buses tied together
3) Connect the other lead to the fire apparatus frame or body
4) Close any switches and circuit breakers in the circuit(s)
5) Apply the dielectric voltage for one (1) minute in accordance with the testing equipment manufacturer's instructions

The electrical polarity of all permanently wired equipment, cord reels and receptacles shall be tested to verify that wiring connections have been properly made.

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

If the apparatus is equipped with a transfer switch, it shall be tested to verify operation and that all non grounded conductors are switched.

Electrical light towers, floodlights, motors, fixed appliances and portable generators shall be operated at their full rating or capacity for 30 minutes to ensure proper operation.

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WARRANTY

A full statement shall be provided of the warranties for the vehicle(s) being bid. Warranties should clearly describe the terms under which the vehicle manufacturer accepts responsibility for the cost to repair defects caused by faulty design, quality of work or material and for the applicable period of time after delivery.

Cost of repairs refers to all costs related thereto including, but not limited to, the cost of materials and the cost of labor.

The Body Manufacturer shall warrant all materials and accessories used on the vehicle(s), whether fabricated by manufacturer or purchased from an outside source and will deal directly with the Syracuse Fire Department on all warranty work.

GENERAL LIMITED WARRANTY - ONE (1) YEAR

The vehicle shall be free of defects in material and workmanship for a period of one (1) year or 12,000 miles, whichever occurs first starting thirty (30) days after the original invoice date.

The Contractor must be the "single source" coordinator of all warranties on the vehicle.

LOW VOLTAGE ELECTRICAL WARRANTY - FIVE (5) YEARS

The vehicle low voltage electrical system shall be free of defects in material and workmanship for a period of five (5) years or 60,000 miles, whichever occurs first, starting thirty (30) days after the original invoice date.

STRUCTURAL WARRANTY - TEN (10) YEARS

The body shall be free of structural or design failure or workmanship for a period of ten (10) years, or 100,000 miles whichever occurs first, starting thirty (30) days after the original invoice date.

PAINT LIMITED WARRANTY - TEN (10) YEARS

The body shall be free of bubbling or peeling as a result of a defect in the method of manufacture for a period of ten (10) years or 100,000 miles whichever occurs first, starting thirty (30) days after the original invoice date.

GRAPHICS LIMITED WARRANTY

The 3M graphics installation shall be warranted for a period of two (2) years. The 3M materials installed on completed vehicle shall be warranted for seven (7) years. The 3M Diamond grade film (if specified) shall be warranted for ten (10) years.

CHASSIS MODIFICATIONS

LUBRICATION AND TIRE DATA PLATE

A permanent label in the driving compartment shall specify the quantity and type of the following fluids used in the vehicle and tire information:

- Engine oil
- Engine coolant
- Chassis transmission fluid
- Pump transmission lubrication fluid . . (if applicable)
- Pump priming system fluid, if applicable . . (if applicable)
- Drive axle(s) lubrication fluid
- Air conditioning refrigerant . . (if applicable)
- Air conditioning lubrication oil . . (if applicable)
- Power steering fluid
- Cab tilt mechanism fluid . . (if applicable)
- Transfer case fluid . . (if applicable)
- Equipment rack fluid (if applicable)
- CAFS air compressor system lubricant . . (if applicable)
- Generator system lubricant . . (if applicable)
- Front tire cold pressure
- Rear tire cold pressure
- Maximum tire speed ratings

VEHICLE DATA PLATE

A permanent label in the driving compartment which indicates the following:

- Filter part numbers for the;
  - Engine
  - Transmission
  - Air
  - Fuel
- Serial numbers for the;
  - Engine
  - Transmission
- Delivered Weights of the Front and Rear Axles
- Paint Brand and Code(s)
- Sales Order Number

OVERALL HEIGHT, LENGTH DATA PLATE (US)

The fire apparatus manufacturer shall permanently affix a high-visibility label in a location visible to the driver while seated.

The label shall show the height of the completed fire apparatus in feet and inches, the length of the completed fire apparatus in feet and inches, and the GVWR in pounds.

Wording on the label shall indicate that the information shown was current when the apparatus was manufactured and that, if the overall height changes while the vehicle is in service, the fire department must revise that dimension on the

plate.

ACCIDENT PREVENTION

There shall be a placard in the cab seating area which reads, "ALL OCCUPANTS MUST BE SEATED AND BELTED WHEN THE APPARATUS IS IN MOTION".

PERSONNEL CAPACITY

A label that states the number of personnel the vehicle is designed to carry shall be located in an area visible to the driver.

ACCIDENT PREVENTION

If the rear bumper is 8" deep or more, there shall be a placard on the rear face of the body, in clear sight from the ground, which reads, "WARNING - DO NOT RIDE ON STEPS OR DECK AREAS WHILE THE APPARATUS IS IN MOTION. DEATH OR SERIOUS INJURY MAY RESULT".

WEARING HELMET WARNING

A label stating “DO NOT WEAR HELMET WHILE SEATED” shall be visible from each seating location.

FRONT BUMPER

The front bumper shall be as provided by the cab/chassis manufacturer. No other alternation or modifications are required.

HELMET STORAGE

No helmet storage is required in the in the cab driving or crew area.

REAR CAB AREA LAYOUT

CAB INTERIOR CABINET - OVERHEAD

There shall be two (2) overhead cabinet(s) provided on interior. Cabinet(s) shall be constructed of 1/8" smooth finish aluminum, and painted with a dark gray hammer tone powder coat paint finish for a hard durable surface. Each cabinet shall be approximately 14" high x 16" deep x 42" wide.

The above cabinet(s) shall have a quick release cargo netting that will be attached to the bottom of the cabinet and quickly removable from the top.

INTERIOR UNDER CABINET LED LIGHTS

Two (2) OnScene Solution model #70152, 10” x 6” x 7/8”, 10-30 VDC, surface mount dual red and white LED light(s) with clear lens shall be provided under cabinet. Each light shall be individually switched with a high/low intensity setting. In addition light(s) will be capable of a 5 second delay after switching off.

SHOP NOTES

The interior under cabinet lights will be located above each rear facing seat.

CAB INTERIOR CABINET - CURBSIDE REAR WALL

CAB INTERIOR CABINET - STREETSIDE OVERHEAD

There shall be one (1) overhead cabinet(s) provided on interior. Cabinet(s) shall be constructed of 1/8" smooth finish aluminum, and painted with a dark gray hammer tone powder coat paint finish for a hard durable surface. Each cabinet shall be approximately 14" high x 16" deep, length to best fit the designated area.
SHOP NOTES
Change Overhead cabinet dimensions to 14" H x16" D

The above cabinet(s) shall have latching lift-up type door(s) with gray powder coated outer surface.
SHOP NOTES
These doors are to latching as well - use thumb style latch - non locking.

There shall be one (1) 120 volt outlet(s) located inside this cabinet against the back wall unless noted otherwise.
SHOP NOTES
Located high and out of the way.

- The outlet receptacle(s) shall be 20 amp, straight-blade (NEMA 5-20R).
  - Outlet(s) shall be powered through the on-board shore power system.

CAB INTERIOR CABINET - CURBSIDE OVERHEAD

There shall be one (1) overhead cabinet(s) provided on interior. Cabinet(s) shall be constructed of 1/8" smooth finish aluminum, and painted with a dark gray hammer tone powder coat paint finish for a hard durable surface. Each cabinet shall be approximately 14" high x 16" deep, length to best fit the designated area.
SHOP NOTES
Change Overhead cabinet dimensions to 14" H x16" D

The above cabinet(s) shall have lift-up type door(s) with a powder coated outer surface, color to match the cab interior.
SHOP NOTES
These doors are to latching as well - use thumb style latch - non locking.

There shall be one (1) 120 volt outlet(s) located inside this cabinet against the back wall unless noted otherwise.
SHOP NOTES
Located high and out of the way.

- The outlet receptacle(s) shall be 20 amp, straight-blade (NEMA 5-20R).
  - Outlet(s) shall be powered through the on-board shore power system.

FUEL FILL

There shall be one (1) stainless steel fuel fill door located in the streetside exterior wheel well panel, behind the rear axle. The fill door shall have a spring-loaded hinged door and a permanent label with the text "DIESEL FUEL ONLY".

TOOL MOUNTING

- The above specified tools(s) shall be installed on completed unit using PAC mounting brackets, location to be in compartments behind cab crew entry doors.

SHOP NOTES
PAC Mount for (2) Halligan and (1) Flat Head Axe -PAC Mounts To Ship Loose. Loose Ship (2) shallow pieces of vertical unistrut on the back wall for mounting of a RIT Bag on both drivers and passenger side.

- The SCBA air pack(s) shall be mounted on the completed unit, locations as per the Syracuse Fire Department.

SHOP NOTES
Ship loose mounting for (1) Air Pack (MSA4500) (mount on back wall Drivers Side)

BODY DESIGN

The importance of public safety associated with emergency vehicles requires that the construction of this vehicle meet the following specifications. These specifications are written to establish the minimum level of quality and design. All Bidders shall be required to meet these minimum requirements.

It is the intent of these specifications to fully describe the requirements for a custom built emergency type vehicle. In order to extend the expected service life of this vehicle, the body module shall be removable from the chassis frame and be capable of being installed on a new chassis.

The sheet metal material requirements, including alloy and material thickness, throughout the specifications are considered to be a minimum. Since such materials are available to all Manufacturers, the material specifications shall be strictly adhered to.

The fabrication of the body shall be formed sheet metal. Formed components shall allow the Syracuse Fire Department to have the body repaired locally in the case where any object has struck the body and caused damage. The use of proprietary extrusions will prevent the Syracuse Fire Department from such repair and shall NOT be used.

Following construction of the subframe, which supports the apparatus body, the sheet metal portion of the body shall be built directly on the subframe. The joining of the subframe and body shall be of a welded integral construction.

The sheet metal fabrication of the body shall be performed using inert gas continuous feed welders only. The entire body shall be welded construction. The use of pop rivets in any portion of structural construction may allow premature failure of the body structure. Therefore, pop rivets shall NOT be used in the construction of the structural portions of the body. This includes side body sheets, inner panels of compartment doors, and any other structural portions of the body.

EXTERIOR STAINLESS STEEL BODY

The fabrication of the body shall be constructed from 12 gauge type #304 stainless steel. This shall include the compartment front panels, vertical side sheets, side upper roll-over panels, rear panels and compartment door frames.

The body exterior panels and compartment floors shall be constructed with not less than 12 gauge type #304 stainless steel. Interior compartment dividing walls shall be constructed with not less than 14 gauge type #304 stainless steel. Lighter gauge sheet metal will not be acceptable in these areas.

The compartment door frame openings shall be formed "C" channel design. An electrical wiring conduit raceway running the full length of exterior compartments shall be provided. This raceway shall contain all 12 volt wiring running to the rear of the apparatus, permitting easy accessibility to wiring.

Individual compartment modules, with dead air space voids between compartments, shall not be an acceptable method of compartment construction.

The compartments shall be an integral part of the body construction. Compartment floors from front of body to ahead of rear axle, also from rear axle to rear of body shall be single one-piece sections. Compartment floors shall be preformed, then positioned in body and welded into final position.

Compartment floors shall have a "sweep-out" design with door opening threshold positioned lower than compartment floor, permitting easy cleaning of compartments. Angles, lips, or door moldings are not acceptable in the base of compartment door opening. One-way rubber drain valves shall be provided in compartment floors so that a water hose may be used to flush-out compartment area.

All seams in sheet metal below frame, and around the rear wheel well area shall be welded continuous to prevent moisture from entering compartments. All other interior seams and corners shall be sealed with silicone based caulk prior to painting.

Only stainless steel bolts, nuts, and sheet metal screws shall be used in mounting exterior trim, hardware and equipment.

Exterior compartments shall have louvers in lower back wall of compartment for ventilation.

SHOP NOTES

NOTE - NOTE ALL DISIMILAR METALS WILL HAVE A ISOLATION BARRIER BETWEEN THE (2) - PAINT WILL NOT ACT AS SUFFICIENT BARRIER

ROOF CONSTRUCTION

The roof shall be integral with the body and shall be all welded construction. The apparatus body and roof construction shall be integral and reinforced. The roof of the body shall not be less than 12 gauge type #304 stainless steel smooth plate. The roof shall be reinforced with 2" x 2" stainless steel tubing running the full width of the body located on a maximum of 18" centers. A 2" rounded radius shall be provided along the body sides. All seams in the roof area shall be continuously welded prior to paint to prevent entry of moisture.

The side upper header panels on each side of the body, above the door frames, shall be integral panels with the body roof. When the body is constructed using roll-up type doors, the rollover panel shall include a formed drip rail, full length of each body side. When the body is constructed using hinged doors, the rollover panel shall be formed to create the top edge of the door sill and a full length drip molding shall be installed above the door openings.

SHOP NOTES

Clarification: The body roof will be painted overall body color.

BODY SUBFRAME

The chassis frame rails shall be fitted with 1/4" custom extruded UHMW polyethylene rail cap to isolate the body frame members from direct contact with chassis frame rails.

The body subframe shall be constructed from stainless steel tubing. The subframe shall consist of two (2) 2" x 6" x 11 gauge type #304 stainless steel tubes running the full length of the body and spaced the same width as the chassis frame rails. Welded to the two (2) stringers shall be 2" x 4" x 11 gauge type #304 stainless steel tubing cross members. These cross members shall extend the full width of the body to support the compartments. Cross members shall be located at front and rear of body, below compartment divider walls, and in front and rear of wheel well opening. Additional stainless steel cross members shall be located as necessary to support walkways or heavy equipment.

The compartment area behind the rear axle may be supported by a drop frame fabricated of the same 2" x 6" x 11 gauge stainless steel tube and the main stringers. Any such rear drop frame shall be constructed using a minimum of four (4) vertical drop tubes, welded to the main subframe. In areas where heavy equipment shall be mounted, drop frame support shall be constructed with 2" x 4" x 11 gauge stainless steel tube. All drop frame structures must be welded directly to the body subframe to allow the body to be a completely separate structure from the chassis.

To form the frame, the tubing shall be welded at each joint using a wire feed MIG welders with ER308 stainless steel welding wire.

BODY MOUNTING

The body subframe shall be fastened to the chassis frame with a minimum of eight (8) spring loaded body mounts. Each mount shall be configured using a two-piece encapsulated slide bracket. The two (2) brackets shall be fabricated of heavy duty 1/4" thick steel and shall have a powder coat finish to prevent any corrosion. Each mounting assembly shall utilizing two (2) 3/4" diameter x 6" long grade 8 bolts and two (2) heavy duty springs. The assembly design shall allow the body and subframe to act as one (1) component, separate from the chassis. As the chassis frame twists under driving conditions, the spring mounting system shall eliminate any stress from being transferred into the body. The spring loaded body mounts shall also prevent frame side rail or body damage caused by unevenly distributed stress and strains due to load and chassis movement.

Body mountings that do not allow relief from chassis movement will not be acceptable.

10" REAR STEP BUMPER

The full width rear bumper shall be constructed from 2" x 2" x 11 gauge stainless steel tubing frame and covered with 3/16" NFPA compliant aluminum tread plate. The bumper shall extend from the rear vertical body panel 10" and provide a rear step with a minimum of 1/2" space at body for water drainage.

REAR TOW EYES

There shall be two (2) heavy duty rear mounted tow eyes securely attached to the chassis frame and mounted above the rear bumper. The tow eyes shall be fabricated from 1" thick steel plate and shall have a black powder coat finish.

GROUND LIGHTS

Two (2) OnScene Solutions 9" LED Nightstik ground lights shall be mounted below the bumper.

There shall be two (2) OnScene Solutions 9" LED NightStik light(s) installed below bumper capable of providing illumination at a minimum level of 2 fc (20 lx) on ground areas within 30 in. (800 mm) of the edge of the vehicle in areas designed for personnel to climb onto or descend from the vehicle to the ground level.

Lighting shall be switchable but activated automatically when headlights are activated and vehicle park brake is set.

WHEEL WELL EXTERIOR PANEL

The exterior panel of the body wheel well shall be constructed from not less than 14 gauge type #304 smooth stainless steel.

DIEFORMED BEADED EDGE BODY FENDERS

A die formed beaded edge shall be provided along the radius of the wheel well opening for a finished appearance.

WHEEL WELL LINERS

The wheel wells shall be provided with an easily removable polymer, circular inner fender liner. The inner liner shall be bolted to the wheel well with stainless steel bolts and spaced away from the wheel well so the liner will not accumulate dirt or water.

PAINT FINISH - SINGLE COLOR

The body shall be painted with a single color of PPG Delfleet® Evolution paint per approved customer sprayout.

Prior to the assembly and reinstallation of exterior components; i.e. warning and DOT lights, handrails, steps, door hardware, and miscellaneous items, an isolation tape, or gasket shall be used to prevent damage to the finish painted surfaces. These components shall be fastened to body using either a plastic insert into body metal with stainless steel screws or zinc coated nutserts into body surface using stainless steel bolts to prevent corrosion from dissimilar metals.

Touch-up paint shall be provided with completed vehicle.

- Paint Color: Match cab/chassis supplied paint color.

BODY UNDERCOATING

The entire underside of body shall be sprayed with black automotive undercoating. Undercoating shall cover all areas underside of body and wheel well area to help prevent corrosion under the vehicle.

UNDERCOAT WARRANTY

The body undercoating shall have a warranty provided by the manufacturer for the lifetime of the vehicle or twenty (20) years, whichever occurs first. The warranty shall be transferable between vehicle owners. Should the undercoating material applied to the underside of the body and wheel wells of the vehicle ever flake off, peel, chip or crack due to drying out, the damaged area shall be re-sprayed without charge to the vehicle owner.

PAINT WARRANTY

The vehicle shall be provided with a ten (10) year non-prorated warranty to the original owner. Warranty is provided by PPG Inc. A warranty sheet with all conditions and maintenance procedures shall be provided with the delivered vehicle.

COMPARTMENT INTERIOR FINISH

The interior of all exterior body compartments shall be a "Maintenance Free" smooth unpainted finish. All body seams shall be finished with a caulk sealant for both appearance and moisture protection.

REFLECTIVE STRIPE REQUIREMENTS

Material

All retroreflective materials shall conform to the requirements of ASTM D 4956, *Standard Specification for Retroreflective Sheeting for Traffic Control*, Section 6.1.1 for Type I Sheeting.

All retroreflective materials used that are colors not listed in ASTM D 4956, Section 6.1.1, shall have a minimum coefficient of retroreflection of 10 with observation angle of 0.2 degrees and entrance angle of -4 degrees.

Any printed or processed retroreflective film construction used shall conform to the standards required of an integral colored film as specified in ASTM D 4956, Section 6.1.1.

Minimum Requirements

A retroreflective stripe(s) shall be affixed to at least 50 percent of the cab and body length on each side, excluding the pump panel areas, and at least 25 percent of the width of the front of the apparatus.

The stripe or combination of stripes shall be a minimum of 4 in. (100 mm) in total width.

The 4 in. (100 mm) wide stripe or combination of stripes shall be permitted to be interrupted by objects (i.e., receptacles, cracks between slats in roll up doors) provided the full stripe is seen as conspicuous when approaching the apparatus.

REFLECTIVE STRIPE - CAB SIDE

The reflective stripe material shall be 4" wide, 3M Scotchcal 680 series.

- This reflective stripe shall be white in color.

There shall be a 1/2" 22 karat goldleaf stripe with black outline located above and below the main stripe.

REFLECTIVE STRIPE - CAB FRONT

The reflective stripe material shall be 4" wide, 3M Scotchcal 680 series.

- This reflective stripe shall be white in color.

There shall be a 1/2" 22 karat goldleaf stripe with black outline located above and below the main stripe.

CHEVRON STRIPE - CAB BUMPER

A reflective stripe shall be affixed to the front of cab. The stripe or combination of stripes shall be a minimum of 4 in. (100 mm) in total width.

The approximate 10" wide Chevron retroreflective stripe shall be affixed to at least 25 percent of the width of the front of the apparatus with retroreflective striping in a chevron pattern sloping downward and away from the centerline of the vehicle at an angle of 45 degrees. Each stripe shall be 6" width. Chevron panels shall have a 3M UV over laminate to protect from UV rays, scene damage, and everyday use. Chevron panels shall have a minimum 10 year warranty for material failure, and colorfastness.

- The stripe material shall be 3M Scotchlite Diamond Grade.

All retroreflective materials required shall conform to the requirements of ASTM D 4956, *Standard Specification for Retroreflective Sheeting for Traffic Control*, Section 6.1.1 for Type I Sheeting.

This reflective chevron stripe shall alternate red and fluorescent yellow-green in color.

REFLECTIVE STRIPE - BODY SIDES

The reflective stripe material shall be 4" wide, 3M Scotchcal 680 series.

- This reflective stripe shall be white in color.

There shall be a 1/2" 22 karat goldleaf stripe with black outline located above and below the main stripe.

The stripe shall extend from the front of chassis to the forward cab doors where it will angle down and then extend straight back to the rear of the body.

CHEVRON REFLECTIVE STRIPE - REAR SIDES PANELS

At least 50 percent of the rear-facing vertical surfaces, visible from the rear of the apparatus, excluding any pump panel areas not covered by a door, shall be equipped with retroreflective striping in a chevron pattern sloping downward and away from the centerline of the vehicle at an angle of 45 degrees. Each stripe shall be 6" width.

The rear side panels only of the body shall have a Chevron style reflective stripe layout, and cover as much of the rear side panels as possible. Chevron panels shall have a 3M UV over laminate to protect from UV rays, scene damage, and everyday use. Chevron panels shall have a minimum 10 year warranty for material failure, and colorfastness.

The stripe material shall be 3M Diamond Grade.
SHOP NOTES
These Are Heated Panels

This reflective chevron stripe shall alternate red and fluorescent yellow-green in color.

LETTERING

The following lettering shall be furnished and installed on the completed unit:

SIDE CAB DOOR LETTERING

There shall be twenty four (24) 3" high 22K Gold letters furnished and installed on the vehicle. Lettering shall have a clear 3M UV Protective Over Laminate applied before installation.

Final design and layout shall be determined prior to construction.

There shall be four (4) 11" high 22K Gold letters furnished and installed on the vehicle. Lettering shall have a clear 3M UV Protective Over Laminate applied before installation.

Final design and layout shall be determined prior to construction.

UPPER BODY SIDE LETTERING

There shall be fifty (50) 8" high 22K Gold letters furnished and installed on the vehicle. Lettering shall have a clear 3M UV Protective Over Laminate applied before installation.

Final design and layout shall be determined prior to construction.

REAR BODY LETTERING

There shall be sixteen (16) 3" high 22K Gold letters furnished and installed on the vehicle. Lettering shall have a clear 3M UV Protective Over Laminate applied before installation.

Final design and layout shall be determined prior to construction.

FRONT OF CAB LETTERING

There shall be sixteen (16) 3" high 22K Gold letters furnished and installed on the vehicle. Lettering shall have a clear 3M UV Protective Over Laminate applied before installation.

Final design and layout shall be determined prior to construction.

CUSTOM DECAL LOGO - 12" -18"

One (1) custom designed 12" - 18" Scotchcal type retroreflective logo shall be provided and located on the completed vehicle. The exact design and/or artwork shall be provided by the Syracuse Fire Department prior to construction.

One (1) copy of the above custom logo shall be provided and located on the completed vehicle as directed by Syracuse Fire Department.

EXTERIOR COMPARTMENT DOORS

HINGED DOOR CONSTRUCTION

The exterior compartment doors shall be custom manufactured and built for each compartment. The compartment doors must be able to withstand years of rugged service and wear. For this reason, the compartment door design, metal thickness, and attachments must be strictly adhered to.

The compartment doors shall be all stainless steel construction. Doors shall have drain hole openings for drainage and ventilation.

The doors shall be flush mounted so that the outer surface is in line with the side body surface. Lap or bevel type constructed doors, doors framed with extrusions, or doors requiring rubber bumpers to prevent unnecessary contact are NOT ACCEPTABLE.

Compartment door openings shall be sealed with closed cell automotive type rubber molding to provide a weather resistant seal around door. In addition, rubber molding shall be provided along hinge to prevent moisture entry. Open cell foam type rubber moldings are NOT ACCEPTABLE.

Hinged compartment doors shall have 14 gauge stainless steel hinge, with 1/4" stainless steel pin. The hinge shall be bolted to the door and body with stainless steel machine screws. A polyester barrier film gasket shall be placed between stainless steel hinge and any dissimilar metals as necessary.

Drip rails shall be installed above all compartment door openings. Drip rails shall be completely removable for easy replacement if necessary.

The latching mechanism of hinged compartment doors shall include stainless steel 6" Hansen offset bent D-ring keyed handles. A gasket shall be placed between stainless steel handle and door. Door latches shall be a double catching two-point rotary slam latch, recessed inside the double panel door with striker plate.

All vertically hinged compartment doors shall have a pneumatic cylinder to hold door in the open and closed positions. Each door shall be capable of being closed without unlatching. Door checks shall be bolted to the upper compartment door header and the box pan of the door. Door checks that require unlatching by hand will NOT BE ACCEPTABLE. All horizontally hinged compartment door shall have a door check as specified with each door.

SYRACUSE FIRE DEPARTMENT
SVI #824
PRODUCTION SPECIFICATION

BODY HEIGHT MEASUREMENTS

The vertical body dimensions shall be as follows:

AHEAD OF REAR AXLE

	Description	Dimension
A	Bottom of Subframe to Top of Body	89.0"
B	Bottom of Subframe to Bottom of Body	25.0"
C	Vertical Door Opening - (Full Height Compartment)	
	-with roll-up door	67.5"
	-with hinged door	71.5"
	Vertical Door Opening - (Short Compartment)	
	-with hinged door	20.0"

ABOVE REAR AXLE

	Description	Dimension
D	Vertical Door Opening - Above Rear Wheel	
	-with roll-up door	34.0"
	-with hinged door	37.0"

BEHIND REAR AXLE

	Description	Dimension
E	Bottom of Subframe to Bottom of Body	22.5"
F	Vertical Door Opening - (Full Height Compartment)	
	-with roll-up door	62.0"
	-with hinged door	66.0"
	Vertical Door Opening - (Short Compartment)	
	-with hinged door	17.5"

GENERAL

	Description	Dimension
G	Bottom of Drip Rail to Top of Body	38.5"
H	Walk-in Interior Height	78.0" (min)

(Dimensions are generic and subject to change during the actual design process)

BODY WIDTH DIMENSIONS

The body shall be 100.0" wide, not including drip rail or non-permanent fixtures. Interior compartment depth dimensions shall be:

Area Description	Dimension
Transverse Area:	95.5"
- Above Top of Subframe	
Compartment Depth:	24.5"
- Below Top of Subframe	
- Ahead of Rear Axle	
Compartment Depth:	23.5"
- Below Top of Subframe	(Eng. Note)
- Behind the Rear Axle	

(Dimensions are generic and subject to change during the actual design process)

SYRACUSE FIRE DEPARTMENT
SVI #824
PRODUCTION SPECIFICATION

STREETSIDE COMPARTMENT - FRONT (S1)

The interior useable compartment width shall be approximately 64.0" wide.

The compartment door opening shall be approximately 57.0" wide.

This compartment shall have vertically hinged box pan style doors fabricated of Stainless Steel. The inner liner of the door shall also be Stainless Steel with an unpainted finish. The door exterior shall be painted job color.

SHOP NOTES
Compartment doors are stainless steel

The hinged door(s) shall have a stainless steel 6" Hansen offset bent D-ring non-locking handle. A gasket shall be placed between stainless steel handle and door. Door latches shall be a two-point rotary slam, double-catch latch, recessed inside the double panel door with striker plate.

The hinged door(s) shall have a pneumatic cylinder to hold door in the open and closed positions. Each door shall be capable of being closed without unlatching. Door checks shall be bolted to the upper compartment door header and the box pan of the door.

A compartment threshold protection plate shall be installed on the bottom edge of the compartment door opening. The threshold protection shall be fabricated from an Stainless extrusion.

SHOP NOTES
Stainless Thresholds

COMPARTMENT LAYOUT

- There shall be vertically mounted stainless steel Uni-Strut for specified component installation.

- There shall be one (1) adjustable shelf/shelves approximately 24" deep. Each shelf shall be fabricated from 1/4" 3003 aluminum sheet with a 2" vertical flange along the front and rear edges

SHOP NOTES
Changed Material to 1/4" - Delete 3/16 material from B.O.M. - Purchasing to order 1/4" Material.

- There shall be three (3) adjustable shelf/shelves approximately 30" deep. Each shelf shall be fabricated from 1/4" 3003 aluminum sheet with a 2" vertical flange along the front and rear edges

SHOP NOTES
Changed Material to 1/4" - Delete 3/16 material from B.O.M. - Purchasing to order 1/4" Material.

- There shall be one (1) vertical compartment partition(s) dividing the compartment into left and right sides.

SHOP NOTES
This Vertical Partition Wall Will Be Non Adjustable

- There shall be four (4) "J" style rope or equipment hook(s) for mounting of electrical extension cords or rescue ropes.
- There shall be (1) folding style fairlead located on the back side of the compartment door.
- The floor of the compartment above the frame rails shall cover the area directly above the frame rails ONLY (non-extended floor).
- One (1) Hannay ECR1616-17-18 electric cable reel(s) capable of storing 200' of 10/3 electric cable. Reel(s) shall be designed to hold 110% of the capacity of cord length, with fully enclosed 45 amp, three (3) conductor collector rings. Reel(s) shall be mounted to channel structure that allows for side-to-side adjustment of reel position.
  - Power rewind control(s) shall be in a position where the operator can observe the rewinding operation and not be more than 72 in. (1830 mm) above the operator's standing position, and shall be marked with a label indicating its function.
  - A label shall be provided in a visible location adjacent to reel with following information: Current rating, Current type, Phase, Voltage, and Total cord length.
  - The cable reel shall equipped with 200' of 10/3 SEOW yellow cable, a molded plastic ball clamp, and a single heavy duty L5-30 twist-lock female plug at the end.
- One (1) Akron model EJB, cast aluminum electrical power distribution box with yellow powder coat painted finish shall be provided. The power distribution box shall meet all requirements described in NFPA 1901. The power distribution box shall include:
  - A 12" pigtail that terminates in an L5-30 configuration to match the cable on the cord reel. The outlet configuration shall include:
  - One (1) 5-20 duplex straight-blade receptacle
  - One (1) 5-20 duplex straight-blade receptacle
  - One (1) L5-20 single twist lock receptacle
  - One (1) L5-15 single twist lock receptacle
- One (1) Akron EJB treadplate vertical apparatus mounting bracket shall be provided.
  - The fairlead roller shall be mounted directly to the reel.
- Two (2) OnScene Solutions 63" LED Nightstik compartment lights, vertically mounted.
- One (1) OnScene Solutions 9" LED Nightstik ground light shall be provided below the body.

STREETSIDE COMPARTMENT - AHEAD OF REAR WHEELS (S2)

The interior useable compartment width shall be approximately 64.0" wide.

The compartment door opening shall be approximately 57.0" wide.

This compartment shall have vertically hinged box pan style doors fabricated of Stainless Steel. The inner liner of the door shall also be Stainless Steel with an unpainted finish. The door exterior shall be painted job color.

SHOP NOTES
Compartment doors are stainless steel

The hinged door(s) shall have a stainless steel 6" Hansen offset bent D-ring non-locking handle. A gasket shall be placed between stainless steel handle and door. Door latches shall be a two-point rotary slam, double-catch latch, recessed inside the double panel door with striker plate.

The hinged door(s) shall have a pneumatic cylinder to hold door in the open and closed positions. Each door shall be capable of being closed without unlatching. Door checks shall be bolted to the upper compartment door header and the box pan of the door.

A compartment threshold protection plate shall be installed on the bottom edge of the compartment door opening. The threshold protection shall be fabricated from an Stainless extrusion.

SHOP NOTES
Stainless Thresholds

COMPARTMENT LAYOUT

- There shall be vertically mounted stainless steel Uni-Strut for specified component installation.

- There {will/shall} be {qty} 1,000 lbs. slide-out tray(s) with an OnScene Solutions base approximately 24" deep and as wide as the compartment layout or door opening permits located below the level of the chassis frame rails and {will/shall} be vertically adjustable in height. Each slide {will/shall} have a cable operated, spring loaded latch complimented by a large hand opening and red pull handle (Pull to Release) which will lock the tray in the closed and full extension positions. Each tray {will/shall} be fabricated from 1/4" 3003 aluminum sheet and {will/shall} have welded corners to form a box type tray surface with an internal depth of approximately 3 ½".

SHOP NOTES
Changed Material to 1/4" - Delete 3/16 material from B.O.M. - Purchasing to order 1/4" Material.

- There shall be one (1) 1,000 lbs. slide-out tray(s) with an OnScene Solutions base approximately 30" deep and as wide as the compartment layout or door opening permits located above the level of the chassis frame rails. Each slide base shall have a cable operated, spring loaded latch complimented by a large hand opening and red pull handle (Pull to Release) which will lock the tray in the closed and full extension positions. Each tray shall be fabricated from 1/4" 3003 aluminum sheet and shall have welded corners to form a box type tray surface with an internal depth of approximately 3 ½".

SHOP NOTES
Changed Material to 1/4" - Delete 3/16 material from B.O.M. - Purchasing to order 1/4" Material.

- There shall be one (1) vertical compartment partition dividing the compartment into left and right sides.

- There shall be two (2) folding style fairlead located on the back side of the compartment door.

- The floor of the compartment above the frame rails shall be extended to the interior edge of the door.

- Two (2) Hannay EF2016-17-18 hydraulic hose reel(s) capable of storing 100' of dual line hydraulic hose. The rewind button for each reel shall be located adjacent to the reel it controls.

- The hydraulic reel shall be equipped with 100' of Amkus hydraulic hose. The hose shall be Red in color.

- The hydraulic reel shall connect to the hydraulic pump with one (1) 6' Amkus pigtails. The hoses shall be Red in color.

- The hydraulic reel shall be equipped with 100' of Amkus hydraulic hose. The hose shall be Blue in color.

- The hydraulic reel shall connect to the hydraulic pump with one (1) 6' Amkus pigtails. The hoses shall be Blue in color.

- The fairlead roller shall be mounted directly to the reel.

– Two (2) OnScene Solutions 63" LED Nightstik compartment lights, vertically mounted.

- One (1) Syracuse Fire Department supplied electric hydraulic power unit(s). One (1) 240 VAC twist lock receptacle with switch shall be provided on wall within easy reach of operator for turning the power unit ON/OFF.

SHOP NOTES
Mount the circuit control panel for the Super Simo under one of the reels and mount the VFD in the same compartment as the 12 volt panel - Engineering to work with Amkus Engineers to locate the heat exchanger and to ensure the HPU will function as designed.

- Mounts will be supplied and shipped loose for one (1) Syracuse Fire Department supplied hydraulic ram(s).

SHOP NOTES
Make: Amkus Model: 30
Make: Amkus Model: 40
Make: Amkus Model: 60
Reference Sales Drawing for approved Layout - ~~Tools Will not be Shipped to SVI - Ship All Mounts Loose With Truck.~~

- Mounts will be supplied and shipped loose for two (2) Syracuse Fire Department supplied hydraulic cutter(s).

SHOP NOTES
Make: Amkus Model: 21
Make: Amkus Model: 25E with Speedway
Reference Sales Drawing for approved Layout - ~~Tools Will not be Shipped to SVI - Ship All Mounts Loose With Truck.~~

- Mounts will be supplied and shipped loose for one (1) Syracuse Fire Department supplied hydraulic spreader(s).

SHOP NOTES
Make: Amkus Model:M30CX
Reference Sales Drawing for approved Layout - ~~Tools Will not be Shipped to SVI - Ship All Mounts Loose With Truck.~~

- Two (2) 3-1/2" x 3-1/2" black plastic louvered vents shall be provided in the lower compartment.

STREETSIDE COMPARTMENT - ABOVE REAR WHEELS (S3)

The interior useable compartment width shall be approximately 56.0" wide.

The compartment door opening shall be approximately 49.0" wide.

This compartment shall have vertically hinged box pan style doors fabricated of Stainless Steel. The inner liner of the door shall also be Stainless Steel with an unpainted finish. The door exterior shall be painted job color.

SHOP NOTES

Compartment doors are stainless steel

The hinged door(s) shall have a stainless steel 6" Hansen offset bent D-ring non-locking handle. A gasket shall be placed between stainless steel handle and door. Door latches shall be a two-point rotary slam, double-catch latch, recessed inside the double panel door with striker plate.

The hinged door(s) shall have a pneumatic cylinder to hold door in the open and closed positions. Each door shall be capable of being closed without unlatching. Door checks shall be bolted to the upper compartment door header and the box pan of the door.

A compartment threshold protection plate shall be installed on the bottom edge of the compartment door opening. The threshold protection shall be fabricated from an Stainless extrusion.

SHOP NOTES

Stainless Thresholds

COMPARTMENT LAYOUT

SHOP NOTES

Add a sloped back compartment floor to help secure cribbing (reinforce floor to hold over 1300lbs of cribbing)

- There shall be vertically mounted stainless steel Uni-Strut for specified component installation.
- Two (2) OnScene Solutions 36" LED Nightstik compartment lights, vertically mounted.

STREETSIDE COMPARTMENT - ABOVE REAR WHEELS (S4)

The interior useable compartment width shall be approximately 56.0" wide.

The compartment door opening shall be approximately 49.0" wide.

This compartment shall have vertically hinged box pan style doors fabricated of Stainless Steel. The inner liner of the door shall also be Stainless Steel with an unpainted finish. The door exterior shall be painted job color.

SHOP NOTES
Compartment doors are stainless steel

The hinged door(s) shall have a stainless steel 6" Hansen offset bent D-ring non-locking handle. A gasket shall be placed between stainless steel handle and door. Door latches shall be a two-point rotary slam, double-catch latch, recessed inside the double panel door with striker plate.

The hinged door(s) shall have a pneumatic cylinder to hold door in the open and closed positions. Each door shall be capable of being closed without unlatching. Door checks shall be bolted to the upper compartment door header and the box pan of the door.

A compartment threshold protection plate shall be installed on the bottom edge of the compartment door opening. The threshold protection shall be fabricated from an Stainless extrusion.

SHOP NOTES
Stainless Thresholds

COMPARTMENT LAYOUT

- There shall be vertically mounted stainless steel Uni-Strut for specified component installation.

- There shall be one (1) air bag storage module(s). The module shall be fabricated from 1/8” (.125) 3003H-14 aluminum alloy sheet. Circular notches shall be provided along the front edge to ease the access to the air bags. Each bay shall be sized to hold the air bag and a matching piece of plywood. The make, model and exact dimensions of the air bags shall be provided during the pre-construction meeting.

SHOP NOTES
Air bag module to fit (2) airbags on top of each other with NO Plywood - FD uses Paratech airbags, Models are: (2) KPI 2 (2) KPI 3 (2) KPI 5 (2) KPI10 (2) KPI 12 (2) KPI 17 (2) KPI 35 - These Bags will be stored in the interior walkway (2) KPI 44 (2) KPI 55 (2) KPI 74 - Reference Sales Drawing for Approved layout in pre con.

- There shall be (1) folding style fairlead located on the back side of the compartment door.

- One (1) Hannay EF1520-17-18 low pressure air hose reel(s) capable of storing 200' of low pressure air hose. The rewind button for each reel shall be located adjacent to the reel it controls.

- The hose reel shall equipped with 200' of 3/8 low pressure air hose. Molded plastic ball clamp shall be provided on the hose to stop it at the 4-way roller. The hose shall be Red in color.
  - The air supply shall be from the utility air compressor.
    - A reel shut-off valve, pressure regulator, and 0-300 psi gauge shall be provided on an aluminum control panel next to the air reel.
- The fairlead roller shall be mounted directly to the reel.

- Two (2) OnScene Solutions 36" LED Nightstik compartment lights, vertically mounted.

STREETSIDE COMPARTMENT - REAR (S5)

The interior useable compartment width shall be approximately 64.0" wide.

The compartment door opening shall be approximately 57.0" wide.

This compartment shall have vertically hinged box pan style doors fabricated of Stainless Steel. The inner liner of the door shall also be Stainless Steel with an unpainted finish. The door exterior shall be painted job color.

SHOP NOTES
Compartment doors are stainless steel

The hinged door(s) shall have a stainless steel 6" Hansen offset bent D-ring non-locking handle. A gasket shall be placed between stainless steel handle and door. Door latches shall be a two-point rotary slam, double-catch latch, recessed inside the double panel door with striker plate.

The hinged door(s) shall have a pneumatic cylinder to hold door in the open and closed positions. Each door shall be capable of being closed without unlatching. Door checks shall be bolted to the upper compartment door header and the box pan of the door.

A compartment threshold protection plate shall be installed on the bottom edge of the compartment door opening. The threshold protection shall be fabricated from an Stainless extrusion.

SHOP NOTES
Stainless Thresholds

COMPARTMENT LAYOUT

- There shall be vertically mounted stainless steel Uni-Strut for specified component installation.

SHOP NOTES
These shall go both horizontal and vertical in this compartment - All Shelves and vertical wall partitions shall bolt to Unistrut

- There shall be one (1) bolted shelf/shelves approximately 24" deep. Each shelf shall be fabricated from 1/4" 3003 aluminum sheet with a 2" vertical flange along the front and rear edges

SHOP NOTES
Changed Material to 1/4" - Delete 3/16 material from B.O.M. - Purchasing to order 1/4" Material.

- There shall be two (2) adjustable shelf/shelves approximately 30" deep. Each shelf shall be fabricated from 1/4" 3003 aluminum sheet with a 2" vertical flange along the front and rear edges

SHOP NOTES
Changed Material to 1/4" - Delete 3/16 material from B.O.M. - Purchasing to order 1/4" Material.

- There shall be four (4) vertical compartment partition dividing the compartment into left and right sides.

SHOP NOTES
(3) out of the (4) partitions are to be horizontally adjustable.

- There shall be three (3) removable plastic tool box(s) with hand holes for carrying. Each tool box shall be fabricated from ½" (.50) textured finish polypropylene sheet.

- The floor of the compartment above the frame rails shall cover the area directly above the frame rails ONLY (non-extended floor).

- Two (2) OnScene Solutions 63" LED Nightstik compartment lights, vertically mounted. One (1) On Scene Solutions Nightstik compartment light to be horizontally mounted, to be as wide as possible.

- One (1) OnScene Solutions 9" LED Nightstik ground light shall be provided below the body.

- Two (2) 3-1/2" x 3-1/2" black plastic louvered vents shall be provided in the lower compartment.

CURBSIDE COMPARTMENT - FRONT (C1)

The interior useable compartment width shall be approximately 64.0" wide.

The compartment door opening shall be approximately 57.0" wide.

This compartment shall have vertically hinged box pan style doors fabricated of Stainless Steel. The inner liner of the door shall also be Stainless Steel with an unpainted finish. The door exterior shall be painted job color.

SHOP NOTES

Compartment doors are stainless steel

The hinged door(s) shall have a stainless steel 6" Hansen offset bent D-ring non-locking handle. A gasket shall be placed between stainless steel handle and door. Door latches shall be a two-point rotary slam, double-catch latch, recessed inside the double panel door with striker plate.

The hinged door(s) shall have a pneumatic cylinder to hold door in the open and closed positions. Each door shall be capable of being closed without unlatching. Door checks shall be bolted to the upper compartment door header and the box pan of the door.

A compartment threshold protection plate shall be installed on the bottom edge of the compartment door opening. The threshold protection shall be fabricated from an Stainless extrusion.

SHOP NOTES

Stainless Thresholds

COMPARTMENT LAYOUT

- There shall be vertically mounted stainless steel Uni-Strut for specified component installation.
- There shall be one (1) adjustable shelf/shelves approximately 30" deep. Each shelf shall be fabricated from 1/4" 3003 aluminum sheet with a 2" vertical flange along the front and rear edges
- There shall be one (1) vertical compartment partition dividing the compartment into left and right sides.
- There shall be four (4) "J" style rope or equipment hook(s) for mounting of electrical extension cords or rescue ropes.
- There shall be (1) folding style fairlead located on the back side of the compartment door.
- There shall be (1) 50' 10/4 extension cord and supply both ends (one to plug into 240 outlet in this compartment and the other end to be determined by FD)
- The floor of the compartment above the frame rails shall be extended to the interior edge of the door. The floor shall have a 2" vertical lip and a 1" return to increase strength.

SHOP NOTES

This is only partially extended.

- One (1) Hannay ECR1616-17-18 electric cable reel(s) capable of storing 200' of 10/3 electric cable. Reel(s) shall be designed to hold 110% of the capacity of cord length, with fully enclosed 45 amp, three (3) conductor collector rings. Reel(s) shall be mounted to channel structure that allows for side-to-side adjustment of reel position.

- Power rewind control(s) shall be in a position where the operator can observe the rewinding operation and not be more than 72 in. (1830 mm) above the operator's standing position, and shall be marked with a label indicating its function.

  - A label shall be provided in a visible location adjacent to reel with following information: Current rating, Current type, Phase, Voltage, and Total cord length.

  - The cable reel shall equipped with 200' of 10/3 SEOW yellow cable, a molded plastic ball clamp, and a single heavy duty L5-30 twist-lock female plug at the end.

- One (1) Akron model EJB, cast aluminum electrical power distribution box with yellow powder coat painted finish shall be provided. The power distribution box shall meet all requirements described in NFPA 1901. The power distribution box shall include:

  - A 12" pigtail that terminates in an L5-30 configuration to match the cable on the cord reel. The outlet configuration shall include:

  - One (1) 5-20 duplex straight-blade receptacle

  - One (1) 5-20 duplex straight-blade receptacle

  - One (1) L5-20 single twist lock receptacle

  - One (1) L5-15 single twist lock receptacle

- One (1) Akron EJB treadplate vertical apparatus mounting bracket shall be provided.

  - The fairlead roller shall be mounted directly to the reel.

- Two (2) OnScene Solutions 63" LED Nightstik compartment lights, vertically mounted.

- One (1) 120/240 VAC load center.

- The generator gauge panel.

- There shall be one (1) 240 volt outlet(s) located in this compartment mounted on the forward wall unless noted otherwise.

- The outlet receptacle(s) shall be 30 amp, twist-lock (NEMA L6-30R).

SHOP NOTES

This needs to be an L630 Outlet - locate aft of breaker panel

  - Outlet(s) shall be powered through the on-board generator system.

CURBSIDE COMPARTMENT - AHEAD OF REAR WHEEL (C2)

The interior useable compartment width shall be approximately 64.0" wide.

The compartment door opening shall be approximately 57.0" wide.

This compartment shall have vertically hinged box pan style doors fabricated of Stainless Steel. The inner liner of the door shall also be Stainless Steel with an unpainted finish. The door exterior shall be painted job color.

SHOP NOTES
Compartment doors are stainless steel

The hinged door(s) shall have a stainless steel 6" Hansen offset bent D-ring non-locking handle. A gasket shall be placed between stainless steel handle and door. Door latches shall be a two-point rotary slam, double-catch latch, recessed inside the double panel door with striker plate.

The hinged door(s) shall have a pneumatic cylinder to hold door in the open and closed positions. Each door shall be capable of being closed without unlatching. Door checks shall be bolted to the upper compartment door header and the box pan of the door.

A compartment threshold protection plate shall be installed on the bottom edge of the compartment door opening. The threshold protection shall be fabricated from an Stainless extrusion.

SHOP NOTES
Stainless Thresholds

COMPARTMENT LAYOUT

- There shall be vertically mounted stainless steel Uni-Strut for specified component installation.

- There shall be one (1) adjustable shelf/shelves approximately 24" deep. Each shelf shall be fabricated from 1/4" 3003 aluminum sheet with a 2" vertical flange along the front and rear edges

SHOP NOTES
Forward of partition.
Changed Material to 1/4" - Delete 3/16 material from B.O.M. - Purchasing to order 1/4" Material.

- There {will/shall} be {qty} 1,000 lbs. slide-out tray(s) with an OnScene Solutions base approximately 30" deep and as wide as the compartment layout or door opening permits located above the level of the chassis frame rails. Each slide base {will/shall} have a cable operated, spring loaded latch complimented by a large hand opening and red pull handle (Pull to Release) which will lock the tray in the closed and full extension positions. Each tray {will/shall} be fabricated from 1/4" 3003 aluminum sheet and {will/shall} have welded corners to form a box type tray surface with an internal depth of approximately 3 ½".
  aluminum sheet with a 2" vertical flange along the front and rear edges

SHOP NOTES
Forward of partition.
Changed Material to 1/4" - Delete 3/16 material from B.O.M. - Purchasing to order 1/4" Material.

- There shall be three (3) removable plastic tool box(s) with hand holes for carrying. Each tool box shall be fabricated from ½" (.50) textured finish polypropylene sheet.

SHOP NOTES
Poly Boxes to have hinged lids on them, similar to water fill tank

- There shall be two (2) folding style fairlead located on the back side of the compartment door.
- The floor of the compartment above the frame rails shall be extended to the interior edge of the door. The floor shall have a 2" vertical lip and a 1" return to increase strength.
- One (1) Hannay EF2016-17-18 hydraulic hose reel(s) capable of storing 100' of dual line hydraulic hose. The rewind button for each reel shall be located adjacent to the reel it controls.
- The hydraulic reel shall be equipped with 100' of Amkus hydraulic hose. The hose shall be Blue in color.
- The hydraulic reel shall connect to the hydraulic pump with one (1) 6' Amkus pigtails. The hoses shall be Blue in color.
- The fairlead roller shall be mounted directly to the reel.
- One (1) Hannay EF2016-17-18 hydraulic hose reel(s) capable of storing 100' of dual line hydraulic hose. The rewind button for each reel shall be located adjacent to the reel it controls.
- The hydraulic reel shall be equipped with 100' of Amkus hydraulic hose. The hose shall be Black in color.
- The hydraulic reel shall connect to the hydraulic pump with one (1) 6' Amkus pigtails. The hoses shall be Black in color.
- The fairlead roller shall be mounted directly to the reel.
- Two (2) OnScene Solutions 63" LED Nightstik compartment lights, vertically mounted.
- One (1) Syracuse Fire Department supplied electric hydraulic power unit(s). One (1) 240 VAC twist lock receptacle with switch shall be provided on wall within easy reach of operator for turning the power unit ON/OFF.

SHOP NOTES
Mount the circuit control panel for the Super Simo under one of the reels and mount the VFD in the same compartment as the 12 volt panel - Engineering to work with Amkus Engineers to locate the heat exchanger and to ensure the HPU will function as designed.

- Mounts will be supplied and shipped loose for one (1) Syracuse Fire Department supplied hydraulic cutter(s).

SHOP NOTES
Make: Amkus Model: 21
Make: Amkus Model: 25E with Speedway
Reference Sales Drawing for approved Layout - ~~Tools Will not be Shipped to SVI - Ship All Mounts Loose With Truck.~~

- Mounts will be supplied and shipped loose for one (1) Syracuse Fire Department supplied hydraulic spreader(s).

SHOP NOTES
Make: Amkus Model:M30CX
Reference Sales Drawing for approved Layout - ~~Tools Will not be Shipped to SVI - Ship All Mounts Loose With Truck.~~

- Two (2) 3-1/2" x 3-1/2" black plastic louvered vents shall be provided in the lower compartment.

CURBSIDE COMPARTMENT - ABOVE REAR WHEEL (C3)

The interior useable compartment width shall be approximately 56.0" wide.

The compartment door opening shall be approximately 49.0" wide.

This compartment shall have vertically hinged box pan style doors fabricated of Stainless Steel. The inner liner of the door shall also be Stainless Steel with an unpainted finish. The door exterior shall be painted job color.

SHOP NOTES

Compartment doors are stainless steel

The hinged door(s) shall have a stainless steel 6" Hansen offset bent D-ring non-locking handle. A gasket shall be placed between stainless steel handle and door. Door latches shall be a two-point rotary slam, double-catch latch, recessed inside the double panel door with striker plate.

The hinged door(s) shall have a pneumatic cylinder to hold door in the open and closed positions. Each door shall be capable of being closed without unlatching. Door checks shall be bolted to the upper compartment door header and the box pan of the door.

A compartment threshold protection plate shall be installed on the bottom edge of the compartment door opening. The threshold protection shall be fabricated from an Stainless extrusion.

SHOP NOTES

Stainless Thresholds

COMPARTMENT LAYOUT

SHOP NOTES

Add a sloped back compartment floor to help secure cribbing (reinforce floor to hold over 1300lbs of cribbing)

- There shall be vertically mounted stainless steel Uni-Strut for specified component installation.
- Two (2) OnScene Solutions 36" LED Nightstik compartment lights, vertically mounted.

CURBSIDE COMPARTMENT - ABOVE REAR WHEEL (C4)

The interior useable compartment width shall be approximately 56.0" wide.

The compartment door opening shall be approximately 49.0" wide.

This compartment shall have vertically hinged box pan style doors fabricated of Stainless Steel. The inner liner of the door shall also be Stainless Steel with an unpainted finish. The door exterior shall be painted job color.

SHOP NOTES
Compartment doors are stainless steel

The hinged door(s) shall have a stainless steel 6" Hansen offset bent D-ring non-locking handle. A gasket shall be placed between stainless steel handle and door. Door latches shall be a two-point rotary slam, double-catch latch, recessed inside the double panel door with striker plate.

The hinged door(s) shall have a pneumatic cylinder to hold door in the open and closed positions. Each door shall be capable of being closed without unlatching. Door checks shall be bolted to the upper compartment door header and the box pan of the door.

A compartment threshold protection plate shall be installed on the bottom edge of the compartment door opening. The threshold protection shall be fabricated from an Stainless extrusion.

COMPARTMENT LAYOUT

- There shall be vertically mounted stainless steel Uni-Strut for specified component installation.

SHOP NOTES
Stainless Thresholds

- There shall be one (1) SCBA cylinder storage module for 6" OD (maximum) SCBA bottles. The maximum length of the SCBA cylinder shall be 24.75". The module shall have an exterior shell fabricated from 1/8" (.125) 3003H-14 aluminum alloy sheet. The module shall have a 2" slope, front to back to prevent cylinders from sliding out. The SCBA cylinder storage tubing shall be fabricated from PVC pipe to prevent damage or abrasion to cylinders. In addition there shall be rubber matting provided in the base of each storage tube for bottle protection and to prevent slipping.

- The SCBA cylinder storage module shall be capable of storing twenty one (21) SCBA cylinders up to 6" diameter.

SHOP NOTES
If twenty eight (28) fit then put them in – will need to be reviewed by engineering to see if (28) will fit with gas struts on doors.

- There shall be one (1) extinguisher storage module. The module shall have an exterior shell fabricated from 1/8" (.125) 3003H-14 aluminum alloy sheet. The module shall have a 2" slope, front to back to prevent extinguishers from sliding out. In addition there shall be rubber matting provided in the base of each storage tube for bottle protection and to prevent slipping.

SHOP NOTES
The extinguisher module shall be capable of storing six (6) extinguishers up to 7.5" diameter.

- Two (2) OnScene Solutions 36" LED Nightstik compartment lights, vertically mounted.

CURBSIDE COMPARTMENT - REAR (C5)

The interior useable compartment width shall be approximately 64.0" wide.

The compartment door opening shall be approximately 57.0" wide.

This compartment shall have vertically hinged box pan style doors fabricated of Stainless Steel. The inner liner of the door shall also be Stainless Steel with an unpainted finish. The door exterior shall be painted job color.

SHOP NOTES

Compartment doors are stainless steel

The hinged door(s) shall have a stainless steel 6" Hansen offset bent D-ring non-locking handle. A gasket shall be placed between stainless steel handle and door. Door latches shall be a two-point rotary slam, double-catch latch, recessed inside the double panel door with striker plate.

The hinged door(s) shall have a pneumatic cylinder to hold door in the open and closed positions. Each door shall be capable of being closed without unlatching. Door checks shall be bolted to the upper compartment door header and the box pan of the door.

A compartment threshold protection plate shall be installed on the bottom edge of the compartment door opening. The threshold protection shall be fabricated from an Stainless extrusion.

SHOP NOTES

Stainless Thresholds

COMPARTMENT LAYOUT

SHOP NOTES

This is a Fuel Storage Compartment so it needs to be segregated for everything else

- There shall be vertically mounted stainless steel Uni-Strut for specified component installation.

- There shall be two (2) adjustable shelf/shelves approximately 30" deep. Each shelf shall be fabricated from 1/4" 3003 aluminum sheet with a 2" vertical flange along the front and rear edges

SHOP NOTES

Changed Material to 1/4" - Delete 3/16 material from B.O.M. - Purchasing to order 1/4" Material.

- There shall be one (1) 1,000 lbs. slide-out tray(s) with an OnScene Solutions base approximately 24" deep and as wide as the compartment layout or door opening permits located below the level of the chassis frame rails. Each slide base shall have a cable operated, spring loaded latch complimented by a large hand opening and red pull handle (Pull to Release) which will lock the tray in the closed and full extension positions. Each tray shall be fabricated from 1/4" 3003 aluminum sheet and shall have welded corners to form a box type tray surface with an internal depth of approximately 3 ½".

SHOP NOTES

Changed Material to 1/4" - Delete 3/16 material from B.O.M. - Purchasing to order 1/4" Material.

- There shall be one (1) 1,000 lbs. slide-out tray(s) with an OnScene Solutions base approximately 24" deep and as wide as the compartment layout or door opening permits located below the level of the chassis frame rails and shall be vertically adjustable in height. Each slide shall have a cable operated, spring loaded latch complimented by a large hand opening and red pull handle (Pull to Release) which will lock the tray in the closed and full extension positions. Each tray shall be fabricated from 1/4" 3003 aluminum sheet and shall have welded corners to form a box type tray surface with an internal depth of approximately 3 ½".

SHOP NOTES

SYRACUSE FIRE DEPARTMENT
SVI #824
PRODUCTION SPECIFICATION

Changed Material to 1/4" - Delete 3/16 material from B.O.M. - Purchasing to order 1/4" Material.

- Add (1) Exterior ambulance style vent high in compartment locate on back wall will go through the rear chevron for fuel ventilation.
- The floor of the compartment above the frame rails shall cover the area directly above the frame rails ONLY (non-extended floor).
- Two (2) OnScene Solutions 63" LED Nightstik compartment lights, vertically mounted.
- Two (2) 3-1/2" x 3-1/2" black plastic louvered vents shall be provided in the lower compartment.

REAR ENTRY DOOR

Access to the interior body compartment shall be provided through a rear entry door. The door opening shall be approximately 32" wide x 77" high.

Construction of the rear entry door shall be stainless steel; the interior door pan shall be constructed from stainless steel.

The door shall be hung on full height 14 gauge stainless steel hinges with 1/4" stainless steel pins. The hinge shall be bolted to the door and body with stainless steel machine screws at 5" offset centers. The hinge shall be slotted horizontally and vertically for ease of adjustment. A polyester barrier film gasket shall be placed between the stainless steel hinge and door.

A polyester barrier film gasket shall be placed between the stainless steel handles and the aluminum door panels. The door latch shall be a double catch two-point safety slam latch recessed inside the double panel door with strike plate mounted top and bottom of the door frame.

The latch mechanism shall include a stainless steel paddle handle on the inside.

The hinged door(s) shall have a stainless steel 6" offset bent D-ring non-locking handle. A gasket shall be placed between stainless steel handle and door. Door latches shall be a two-point rotary slam, double-catch latch, recessed inside the double panel door with striker plate.

ENTRY HANDRAILS

There shall be one (1) handrail provided at entry door, one (1) vertically angled on the interior of body on door interior. The interior handrail shall be angled for optimum use when entering or exiting the walk-in portion of the body.

Handrail shall be NFPA compliant 1-1/4" 304 knurled stainless steel with welded end stanchions.
SHOP NOTES
Ensure hand Rail are the new stainless style

WINDOW(S)

There shall be one (1) 18"wide x 22" high, double-paned insulated, vertical sliding window(s) installed in the entrance door. Each window shall have tinted automotive type safety glass mounted in an extruded aluminum frame. The frame shall have a black anodized finish.

PLASTIC FLOOR AND SHELF TILE

All compartment floors, shelves, and trays shall be covered with Turtle Tile plastic interlocking grating.

- The plastic floor tile shall be black.
- The plastic edge trim shall be black.

ROPE TIE-OFF OR PORTABLE WINCH RECEIVERS

The completed unit shall have an integrated receiver system for use with rope rescue accessories and/or electric winch components when specified. Each receiver shall have the following load rating:

	STRAIGHT PULL	SAFETY FACTOR
Rope Tie Off:	600 LBS.	15:1
Winch:	1,000 LBS	4:1

The following items shall be provided to accomplish rope rescue and/or portable winch operations:

- Two (2) rope tie off anchor accessories shall be provided with the completed vehicle. Each anchor accessory shall include a hitch pin to lock it in place. The tie off anchor accessories shall have an eyelet for use with a rope rescue carabineer. A mounting bracket shall be provided to store each rope tie off accessory in a body compartment as close to receiver as possible.

- There shall be one (1) receiver tube(s) located at the front bumper for use with rope tie-off accessory and/or a portable electric winch.
    - There shall be one (1) rubber cover / plug for the receiver.

- There shall be one (1) receiver tube(s) located on the streetside of the body in the forward portion of the wheel well panel for use with rope tie-off accessory and/or a portable electric winch.
    - There shall be one (1) rubber cover / plug for the receiver.

- There shall be one (1) receiver tube(s) located on the curbside of the body in the forward portion of the wheel well panel for use with rope tie-off accessory and/or a portable electric winch.
    - There shall be one (1) rubber cover / plug for the receiver.

- There shall be one (1) receiver tube(s) located at the rear bumper for use with rope tie-off accessory and/or a portable electric winch.
    - There shall be one (1) rubber cover / plug for the receiver.

SIDE BODY PROTECTION - RUB RAIL

There shall be side rub rails provided below the compartment door openings on both the streetside and curbside. The rub rail shall be fabricated from 6063 extruded aluminum, measuring approximately 2-3/4" high x 1-3/8" thick with tapered aluminum end caps. The rub rail shall be bolted to the body using stainless steel bolts and 1-1/2" diameter x 5/8" thick rubber mount isolators to prevent damage to the body. The rails shall incorporate LED clearance marker lighting recessed into the rail fascia to avoid damage to the light in case of impact. The rub rail shall have an accessory mounting track integrated into the backside of the rail to allow mounting of accessories such as ground lighting.

3M™ Diamond Grade™ Conspicuity striping shall be provided in the rub rail. The striping shall be white in color.

REAR BODY HANDRAILS

There shall be two (2) vertical handrails on the rear of the body. Handrails shall be NFPA compliant extruded stainless steel tubing with chrome plated end stanchions.

SHOP NOTES

These will need to be the new Stainless Steel Style

WALK-IN INTERIOR FINISH DETAILS

DESK, CABINET, CONSOLE FINISH

All specified interior desks, cabinets, overhead cabinets, or consoles shall be fabricated from formed 1/8" 3003 H14 alloy smooth aluminum. After fabrication is completed they shall be painted with a hammer tone powder coat paint finish for a hard durable surface. Paint color shall be gray.

The use of wood materials or laminated surfaces in the construction of desks, cabinets, overhead cabinets, or consoles will not be allowed. There will be **No Exceptions** allowed on specified ruggedized finish.

- There shall be one (1) air bag storage module(s). The module shall be fabricated from 1/8” (.125) 3003H-14 aluminum alloy sheet. Circular notches shall be provided along the front edge to ease the access to the air bags. Each bay shall be sized to hold the air bag and a matching piece of plywood. The make, model and exact dimensions of the air bags shall be provided during the pre-construction meeting.

SHOP NOTES

This will need to hold (2) KPI 44, (2) KPI 55 and (2) KPI 74 airbags vertically, to mount to horizontal unistrut in streetside walkway - ship loose

CAB/BODY WALK-THROUGH CONNECTION

The front center of the rescue body shall be interconnected with the rear crew area of custom cab through a weather tight walk-through opening. The opening shall be designed to allow the custom cab to tilt forward without disconnecting an attached type seal between the cab and body. The opening shall be approximately 24" wide x 70" high (sized to match the cutout in the rear wall of the cab).

The front of the body shall be cut out to match the cab opening. Additional reinforcements with metal angle or tubing shall be provided to back of cab or front of body, if necessary so that the walk-through opening weakens neither the cab nor body integrity.

The connection shall be weather resistant, yet provide the cab and body to move independent of each other. A flexible 3” rubber weather strip shall be attached to a stainless steel sheet metal frame around the perimeter of the opening in the back wall of the cab. A drip rail shall be provided on front of body above the opening to channel water to both sides of opening. Stainless steel scuff panels shall be provided on back of cab were the rubber seal on body comes in contact with cab.

A formed metal frame shall be bolted to the front of the body. The body-mounted frame shall be provided where the rubber seal comes into contact with the body. The framework shall be painted to match the body color.

The base of the opening shall be covered with a 3/16" aluminum tread plate full width panel, which will overlap from the cab to body so that the rubber seal can not be damaged.

Full width padded foam cushion head bumpers shall be provided on both sides of opening. Head bumpers shall be covered with matching interior vinyl and bolted to each side of walk-through.

CUT OUT IN REAR CAB WALL

The rear wall of the custom cab shall be cut out 24" wide for walk-thru application. The height of the cutout shall be determined by the cab structure in the rear wall and the roof. The opening shall be completed by the custom cab/chassis manufacturer to assure proper cab structural integrity and completed final interior finish.

INTERIOR SPECIFICATIONS

INTERIOR INSULATION

Following the sheet metal fabrication the roof area, upper exterior walls and the entry door of the apparatus body shall be insulated with 1-1/2" rigid polyurethane foam insulation. This insulation shall be the type that will not absorb moisture, move once in place or deteriorate. Mat type fiberglass or spray in foam insulation is not acceptable.

INTERIOR FINISH

The interior of the apparatus body shall have a fully maintenance free and durable finish. The interior finish shall be installed on the ceiling, front wall, and interior side walls from top of exterior compartments to ceiling height.

The interior panels shall be installed with sheet metal screws with white plastic plugs covering the screws. The seams between FRP panels, interior corners, and exterior corners shall be trimmed with white plastic molding.

The interior finish shall be bright white pebble grain FRP.

- There shall be horizontal unistrut the first forward 5' horizontal (3) equal sections and behind the horizontal vertical shallow unistrut top to bottom every 24" along the entire streetside and curbside interior wall

SHOP NOTES
Special Instructions on shelf trac layout in description.

INTERIOR WALKWAY HANDRAIL

An interior walkway handrail shall be provided on both sides of walkway. Handrail shall be located from the rear door to approx 5' short of the cab walk through door (no handrail next to the horizontally mounted unistrut).

Handrail shall be NFPA compliant stainless steel tubing.

INTERIOR WALKWAY SIDE WALLS

Walkway side walls from floor level to top of exterior compartments shall be aluminum tread plate panels.

INTERIOR WALKWAY FLOOR

The NFPA compliant 3/16" aluminum tread plate walkway floor shall be installed above the barrier, with a 2" high vertical break on each side of the floor panel to form a watertight splash and kickboard along the walkway sides.

The walkway floor area continuously welded at all cross seams to provide a watertight finish, so that a water hose may be used to flush-out walkway area.

INTERIOR SUB-FLOOR

Above the body subframe shall be an isolation sheet that shall prevent outside elements from permeating the full length sound and thermal barrier of 3/4" thick air core plastic. The sheet shall be fabricated from the same type of material as is used in the subframe. The isolation sheet shall be flanged on both sides with a 1" high vertical break.

STREETSIDE INTERIOR AREA (IS1)

INTERIOR CABINET – ABOVE DECK

There shall be one (1) cabinet(s) provided on interior above the interior deck surface formed by exterior compartment ceilings. Cabinet(s) shall be framed in from the top of the interior deck surface to the ceiling of the walk-in area. Each cabinet shall be approximately (insert actual dimensions).

SHOP NOTES
The Amkus VFD panel for both the Streetside and Curbside HPU will be located in this compartment

- The 12 volt electrical distribution panel shall be located in the streetside front IS1 compartment.
    - The above cabinet(s) shall have double 12 volt panel slide in/latch style aluminum door(s) and painted with a hammer tone powder coat paint finish to match cabinet color choice.

SHOP NOTES
Door to be approved by FD before Fabrication

STREETSIDE INTERIOR AREA (IS2)

INTERIOR CABINET – ABOVE DECK

There shall be one (1) cabinet(s) provided on interior above the interior deck surface formed by exterior compartment ceilings. Cabinet(s) shall be framed in from the top of the interior deck surface to the ceiling of the walk-in area. Each cabinet shall be approximately (insert actual dimensions).

- One (1) aluminum drip pan/door finish guard shall be provided with the rollup door.

SHOP NOTES
Drain Hoses do not need to be provided.

- The above cabinet(s) shall have a Robinson roll-up door

- There shall be one (1) vertically adjustable shelf in each of the above cabinets. It shall have a 1.25" lip to contain items while minimizing space used.

SHOP NOTES
This shelf will need to be built from 1/4" aluminum.

STREETSIDE INTERIOR AREA (IS3)

INTERIOR CABINET – ABOVE DECK

There shall be one (1) cabinet(s) provided on interior above the interior deck surface formed by exterior compartment ceilings. Cabinet(s) shall be framed in from the top of the interior deck surface to the ceiling of the walk-in area. Each cabinet shall be approximately (insert actual dimensions).

- One (1) aluminum drip pan/door finish guard shall be provided with the rollup door.

SHOP NOTES
Drain Hoses do not need to be provided.

- The above cabinet(s) shall have a Robinson roll-up door
- There shall be one (1) vertically adjustable shelf in each of the above cabinets. It shall have a 1.25" lip to contain items while minimizing space used.

SHOP NOTES
This shelf will need to be built from 1/4" aluminum.

- There shall be one (1) 120 volt outlet(s) located in this compartment on the forward wall unless noted otherwise.

SHOP NOTES
Locate on the forward wall as far inboard and as high as possible.

- The outlet receptacle(s) shall be 20 amp, straight-blade (NEMA 5-20R).
- Outlet(s) shall be powered through the on-board shore power system.

STREETSIDE INTERIOR AREA (IS4)

INTERIOR CABINET – ABOVE DECK

There shall be one (1) cabinet(s) provided on interior above the interior deck surface formed by exterior compartment ceilings. Cabinet(s) shall be framed in from the top of the interior deck surface to the ceiling of the walk-in area. Each cabinet shall be approximately (insert actual dimensions).

- One (1) aluminum drip pan/door finish guard shall be provided with the rollup door.

SHOP NOTES
Drain Hoses do not need to be provided.

- The above cabinet(s) shall have a Robinson roll-up door

- There shall be one (1) vertically adjustable shelf in each of the above cabinets. It shall have a 1.25" lip to contain items while minimizing space used.

SHOP NOTES
This shelf will need to be built from 1/4" aluminum.

STREETSIDE INTERIOR AREA (IS5)

- One (1) Grainger model 1NNF7 or equal, 240 VAC, 3.1 HP electric powered air compressor with 20 gallon storage tank shall be located in this compartment. One (1) 240 VAC twist lock receptacle with switch shall be provided on wall within easy reach of operator for turning the compressor ON/OFF.

SHOP NOTES
The panel covering the compressor should have expanded metal in the cover to allow air flow to the compressor from the walk-in area.

Results of the NFPA required utility air system test shall be provided with delivered vehicle.

INTERIOR CABINET – ABOVE DECK

There shall be one (1) cabinet(s) provided on interior above the interior deck surface formed by exterior compartment ceilings. Cabinet(s) shall be framed in from the top of the interior deck surface to the ceiling of the walk-in area. Each cabinet shall be approximately (insert actual dimensions).

SHOP NOTES
This will also have the top portion of the Stokes and Backboards from compartment S5

- The above cabinet(s) shall have an aluminum access panel with an expanded metal front to provide air flow to and from the compressor into the body walk in area. The access panel shall be treadplate to match walkway.

CURBSIDE INTERIOR AREA (IC1)

INTERIOR CABINET – ABOVE DECK

There shall be one (1) cabinet(s) provided on interior above the interior deck surface formed by exterior compartment ceilings. Cabinet(s) shall be framed in from the top of the interior deck surface to the ceiling of the walk-in area. Each cabinet shall be approximately (insert actual dimensions).

- One (1) aluminum drip pan/door finish guard shall be provided with the rollup door.

SHOP NOTES
Drain Hoses do not need to be provided.

- The above cabinet(s) shall have a Robinson roll-up door

- There shall be one (1) vertically adjustable shelf in each of the above cabinets. It shall have a 1.25" lip to contain items while minimizing space used.

SHOP NOTES
This shelf will need to be built from 1/4" aluminum.

CURBSIDE INTERIOR AREA (IC2)

- There shall be vertically mounted stainless steel Uni-Strut for specified component installation.

SHOP NOTES
Note Space the Horizontal Shelf track above counter to fit the SCBA brackets.

- There shall be four (4) Zico ULLH walkaway type SCBA air pack bracket(s) with "V" type clip and strap assembly to hold SCBA in place.

SHOP NOTES
These are to ship Loose - Note Space the Horizontal Shelf track above counter to fit the SCBA brackets.
Change SCBA brackets To the Zico Bracket - Follow Link: http://www.ziamatic.com/catalog.php?item_id=85747

There shall be two (2) 120 volt outlet(s) located in the walk-in area of the body.

- The outlet receptacle(s) shall be 20 amp, straight-blade (NEMA 5-20R).
- Outlet(s) shall be powered by both the on-board generator and shore power system through a relay system.

SHOP NOTES
The (2) Outlets in the interior walkway need to be located low in the curbside walkway area -(1) towards the front of the walk-in area and (1) towards the rear. - GFCI outlets and need to be tied into both gen and shore power.

CURBSIDE INTERIOR AREA (IC3)

INTERIOR CABINET – ABOVE DECK

There shall be two (2) cabinet(s) provided on interior above the interior deck surface formed by exterior compartment ceilings. Cabinet(s) shall be framed in from the top of the interior deck surface to the ceiling of the walk-in area. Each cabinet shall be approximately 44" wide.

- Two (2) aluminum drip pan/door finish guard shall be provided with the rollup door.

SHOP NOTES
Drain hoses do not need to be provided.

- The above cabinet(s) shall have a Robinson roll-up door

- There shall be one (1) vertically adjustable shelf in each of the above cabinets. It shall have a 1.25" lip to contain items while minimizing space used.

SHOP NOTES
This shelf will need to be built from 1/4" aluminum.

CURBSIDE INTERIOR AREA (IC4/5)

INTERIOR CABINET – ABOVE DECK

There shall be one (1) cabinet(s) provided on interior above the interior deck surface formed by exterior compartment ceilings. Cabinet(s) shall be framed in from the top of the interior deck surface to the ceiling of the walk-in area. Each cabinet shall be approximately 88" wide.

- One (1) aluminum drip pan/door finish guard shall be provided with the rollup door.

SHOP NOTES
Drain Hoses do not need to be provided.

- The above cabinet(s) shall have a Robinson roll-up door

- There shall be one (1) vertically adjustable shelf in each of the above cabinets. It shall have a 1.25" lip to contain items while minimizing space used.

SHOP NOTES
This shelf will need to be built from 1/4" aluminum. - Reinforce due to width - heavy material to be stored on shelf.

LOW VOLTAGE ELECTRICAL SYSTEM- 12 VDC

General

Any low voltage electrical systems or warning devices installed on the fire apparatus shall be appropriate for the mounting location and intended electrical load.

Where wire passes through sheet metal, grommets shall be used to protect wire and wire looms. Electrical connections shall be with double crimp water-tight heat shrink connectors.

All 12 VDC wiring running from front to back of vehicle body shall be run in full length electrical wiring raceway down each side of body.

Wiring

All electrical circuit feeder wiring supplied and installed by the fire apparatus manufacturer shall meet the requirements of NFPA Chapter 13.

The circuit feeder wire shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 % of the maximum current for which the circuit is protected. Voltage drops in all wiring from the power source to the using device shall not exceed 10 %. The use of star washers for circuit ground connections shall not be permitted.

All circuits shall otherwise be wired in conformance with SAE J1292, *Automobile, Truck, Truck-Tractor, Trailer, and Motor Coach Wiring.*

Wiring and Wire Harness Construction

All insulated wire and cable shall conform to SAE J1127, *Low Voltage Battery Cable,* or SAE J1128, *Low Voltage Primary Cable,* type SXL, GXL, or TXL.

All conductors shall be constructed in accordance with SAE J1127 or SAE J1128, except where good engineering practice dictates special strand construction. Conductor materials and stranding, other than copper, shall be permitted if all applicable requirements for physical, electrical, and environmental conditions are met as dictated by the end application. Physical and dimensional values of conductor insulation shall be in conformance with the requirements of SAE J1127 or SAE J1128, except where good engineering practice dictates special conductor insulation. The overall covering of conductors shall be moisture-resistant loom or braid that has a minimum continuous rating of 194°F (90°C) except where good engineering practice dictates special consideration for loom installations exposed to higher temperatures. The overall covering of jacketed cables shall be moisture resistant and have a minimum continuous temperature rating of 194°F (90°C), except where good engineering practice dictates special consideration for cable installations exposed to higher temperatures.

All wiring connections and terminations shall use a method that provides a positive mechanical and electrical connection. The wiring connections and terminations shall be installed in accordance with the device manufacturer's instructions. All ungrounded electrical terminals shall have protective covers or be in enclosures. Wire nut, insulation displacement, and insulation piercing connections shall not be used.

Wiring shall be restrained to prevent damage caused by chafing or ice buildup and protected against heat, liquid contaminants, or other environmental factors.

Wiring shall be uniquely identified at least every 2 ft (0.6 m) by color coding or permanent marking with a circuit function code. The identification shall reference a wiring diagram.

Circuits shall be provided with properly rated low voltage overcurrent protective devices. Such devices shall be readily accessible and protected against heat in excess of the overcurrent device's design range, mechanical damage, and water spray. Circuit protection shall be accomplished by utilizing fuses, circuit breakers, fusible links, or solid state equivalent devices.

If a mechanical-type device is used, it shall conform to one of the following SAE standards:

- SAE J156, *Fusible Links*
- SAE J553, *Circuit Breakers*

1) SAE J554, *Electric Fuses (Cartridge Type)*
2) SAE J1888, *High Current Time Lag Electric Fuses*
3) SAE J2077, *Miniature Blade Type Electrical Fuses*

Switches, relays, terminals, and connectors shall have a direct current (dc) rating of 125 % of maximum current for which the circuit is protected.

Power Supply

A 12 V or greater electrical alternator shall be provided. The alternator shall have a minimum output at idle to meet the minimum continuous electrical load of the vehicle, at 200°F (93°C) ambient temperature within the engine compartment, and shall be provided with full automatic regulation.

Minimum Continuous Electrical Load

The minimum continuous electrical load shall consist of the total amperage required to simultaneously operate the following in a stationary mode during emergency operations:

4) The propulsion engine and transmission
5) All legally required clearance and marker lights, headlights, and other electrical devices except windshield wipers and four-way hazard flashers
1) The radio(s) at a duty cycle of 10 percent transmit and 90 % receive (for calculation and testing purposes, a default value of 5 A continuous)
2) The lighting necessary to produce 2 fc (20 lx) of illumination on all walking surfaces on the apparatus and on the ground at all egress points onto and off the apparatus, 5 fc (50 lx) of illumination on all control and instrument panels, and 50 percent of the total compartment lighting loads
3) The minimum optical warning system, where the apparatus is blocking the right-of way
4) The continuous electrical current required to simultaneously operate any fire pumps, aerial devices, and hydraulic pumps
5) Other warning devices and electrical loads defined by the purchaser as critical to the mission of the apparatus

If the apparatus is equipped to tow a trailer, an additional 45 A shall be added to the minimum continuous electrical load to provide electrical power for the federally required clearance and marker lighting and the optical warning devices mounted on the trailer.

The condition of the low voltage electrical system shall be monitored by a warning system that provides both an audible and a visual signal to persons on, in, or near the apparatus of an impending electrical system failure caused by the excessive discharge of the battery set.

The charge status of the battery shall be determined either by direct measurement of the battery charge or indirectly by monitoring the electrical system voltage.

If electrical system voltage is monitored, the alarm shall sound if the system voltage at the battery or at the master load disconnect switch drops below 11.8 V for 12 V nominal systems, 23.6 V for 24 V nominal systems, or 35.4 V for 42 V

nominal systems for more than 120 seconds.

A voltmeter shall be mounted on the driver's instrument panel to allow direct observation of the system voltage.

Electromagnetic Interference

Electromagnetic interference suppression shall be provided, as required, to satisfy the radiation limits specified in SAE J551/1, *Performance Levels and Methods of Measurement of Electromagnetic Compatibility of Vehicles, Boats (up to 15 m), and Machines (16.6 Hz to 18 GHz)*.

Wiring Diagram

A complete electrical wiring schematic of actual system shall be provided with finished apparatus. Similar or generic type electrical schematics shall NOT BE ACCEPTABLE.

Low Voltage Electrical System Performance Test

A low voltage electrical system test certification shall be provided with delivered apparatus.

12 VOLT DIAGNOSTIC RELAY CONTROL CENTER

The 12 volt power distribution shall be conveniently located with easy access for service. All relays and circuit breakers shall be plug-in type allowing for removal for repairs without necessitating soldering or tools. The sockets mounts for both the relays and circuit breakers shall be of a design that permits the use of standard automotive type components.

The 12 volt distribution panel shall utilize printed circuit boards mounted in high strength enclosure. Each printed circuit board shall be provided with twelve (12) heavy duty independent switching relays. Each relay shall have the ability to be configured either normally open or normally closed and be protected by a 20 amp automatic reset breaker. Each circuit will be provided with a LED for visual diagnostic.

Power distribution panel shall be located in apparatus body within a protected enclosure with removable or hinged cover.

ROCKER SWITCH PANEL

The 12 volt control switch panel shall be supplied and installed by the cab/chassis manufacturer.

ELECTRICAL SYSTEM MANAGER

The chassis shall contain an electrical system manager for:

6) Monitoring chassis battery voltage
7) Shedding pre-determined electrical circuits
8) Sequencing pre-determined electrical circuits

- Automatically controlling chassis engine fast-idle
- Monitor master switch and parking brake applications
- Automatically control warning light modes ("Calling-For" and "Blocking Right of Way")
- Provide low voltage alarm
- Programmable control circuits
- Remote system status indicator panel

System manager shall perform all electrical functions required by current NFPA 1901 Standards.

The electrical system manager shall be supplied and installed by the cab/chassis manufacturer.

BATTERY SYSTEM

The battery connectors shall be heavy duty type with cables terminating in heat shrink loom. Heavy duty battery cables shall provide maximum power to the electrical system. Where required, the cables shall be shielded from exhaust tubing and the muffler. Large rubber grommets shall be provided where cables enter the battery compartment.

Batteries shall be of the high-cycle type. With the engine off, the battery system shall be able to provide the minimum continuous electrical load for 10 minutes without discharging more than 50 percent of the reserve capacity and then to restart the engine. The battery system cold cranking amps (CCA) rating shall meet or exceed the minimum CCA recommendations of the engine manufacturer. The batteries shall be mounted to prevent movement during fire apparatus operation and shall be protected against accumulations of road spray, snow, and road debris. The batteries shall be readily accessible for examination, testing, and maintenance.

A means shall be provided for jump-starting the engine if the batteries are not accessible without lifting the cab of a tilt-cab apparatus.

Where an enclosed battery compartment is provided, it shall be ventilated to the exterior to prevent the buildup of heat and explosive fumes. The batteries shall be protected against vibration and temperatures that exceed the battery manufacturer's recommendation.

A master load disconnect switch shall be provided between the starter solenoid(s) and the remainder of the electrical loads on the apparatus. The starter solenoids shall be connected directly to the batteries.

Electronic control systems and similar devices shall be permitted to be otherwise connected if so specified by their manufacturer.

The alternator shall be wired directly to the batteries through the ammeter shunt(s), if one is provided, and not through the master load disconnect switch.

A green "battery on" pilot light that is visible from the driver's position shall be provided.

A sequential switching device shall be permitted to energize the optical warning devices and other high current devices required in minimum continuous electrical load, provided the switching device shall first energize the electrical devices required in minimum continuous electrical load within five (5) seconds.

BATTERY SWITCH

One (1) battery "On/Off" switch in cab located within easy reach of Driver with green "BATTERY ON" pilot light that is visible from the driver's position shall be provided. The switch and pilot light shall be supplied and installed by the cab/chassis manufacturer.

BATTERY SOLENOID

Battery switch shall consist of a minimum 200 ampere, constant duty solenoid to feed from positive side of battery.

BATTERY CONDITIONER

One (1) Kussmaul model Auto Charge 1200 single battery conditioner, with 120 VAC input and 40 amp, 12 volt output shall be provided. This system shall monitor the condition of batteries and provide an electrical current at variable rates to overcome battery failure. A display shall be provided with charge indicator, remote mounted.
SHOP NOTES

Need to order the indicator with the LED voltage readout, Locate in the window directly behind driver window.

SHORE POWER INLET

The shore power inlet for battery conditioner shall be supplied and installed by the cab chassis manufacturer.

INTERIOR LED LIGHTS

Eight (8) OnScene Solution model #70156, 10" x 10" x 7/8", 10-30 VDC, surface mount dual red and white LED light(s) with clear lens shall be provided throughout the vehicle. Each light shall be individually switched with a high/low intensity setting switchable at the entry door(s). In addition light(s) will be capable of a 5 second delay after switching off.

SHOP NOTES

Switch interior lights at both entry doors

Tie (2) interior walkway lights into shore power so the truck can be checked while master battery switch is off

TAIL LIGHTS

Rear body tail lights shall be vertically mounted per Federal Motor Vehicle Safety Standards. The following lights shall be furnished:

- Two (2) Whelen amber LED 600 Series 60A00TAR turn signal lights
- Two (2) Whelen red LED 600 Series 60R00XRR stop/tail lights
- Two (2) Whelen LED 600 Series 60C00WCR maximum intensity back-up lights with clear lens

Each of the lights above shall be mounted in a 6EFLANGE, chrome finish bezel.

MIDSHIP MARKER/TURN SIGNAL

Two (2) Whelen LED midship body clearance marker/turn signal lights (T0A00MAR) shall be installed. There shall be one (1) light on each side of the body, in the wheel well, ahead of the rear axle. Both lights shall have an amber lens and operate with the chassis clearance marker and turn signals.

MARKER LIGHTS

The apparatus body shall be equipped with all necessary clearance lights and reflectors in accordance with Federal Motor Vehicle Safety Standards (FMVSS) regulations. All body clearance lights shall be Truck-Lite Model 18 LED to reduce the need for maintenance and lower the amp draw. Clearance lights shall be wired to the headlight circuit of the chassis.

SHOP NOTES

Add 2 part #047-15462 red lights and 2 part #047-15463 amber lights if not included with rubrails

Floodlight(s) shall be provided on the front of the cab by the cab/chassis manufacturer. Scene lights shall be provided with a lens or a means for preventing damage from water spray and shall be listed for wet location usage.

Each light shall be wired directly to the 12 VDC electrical system with stranded copper wire. The floodlights shall be protected with circuit breakers rated at the proper amperage and wire size.

SIDE SCENE LIGHTS

There shall be eight (8) Fire Research Spectra 260 LED surface mounted lights provided on the upper body. Light quantity shall be divided equally per side.

Two (2) switches shall be provided, one (1) for the streetside scene lights, and one (1) for the curbside scene lights.
SHOP NOTES
Changed light head to Spectra - Deleted original light out of B.O.M. Dave S. Special Priced - has info on light.

The lights shall be switched at the 12 volt control panel in the cab.

REAR SCENE LIGHTS

There shall be two (2) Fire Research Spectra 260 LED surface mounted lights provided on the upper body. Light quantity shall be divided equally per side.

SHOP NOTES
Changed Light head to Spectra - Deleted original light out of B.O.M. Dave S. Special Priced - has info on light.

The lights shall be switched at the 12 volt control panel in the cab.

The rear scene lights shall also be activated when the apparatus is in reverse.

TRAFFIC DIRECTIONAL LIGHT

One (1) Whelen TAL85, 47" eight (8) LED light, traffic directional warning device with 30' control cable shall be located on upper rear body. The control head shall be located in the cab within easy reach of Driver.

The traffic directional light shall be surface mounted on upper rear body.

WARNING LIGHT PACKAGE

Each apparatus shall have a system of optical warning devices that meets or exceeds the requirements of this section.

The optical warning system shall consist of an upper and a lower warning level. The requirements for each level shall be met by the warning devices in that particular level without consideration of the warning devices in the other level.

For the purposes of defining and measuring the required optical performance, the upper and lower warning levels shall be divided into four warning zones. The four zones shall be determined by lines drawn through the geometric center of the apparatus at 45 degrees to a line drawn lengthwise through the geometric center of the apparatus. The four zones shall be designated A, B, C, and D in a clockwise direction, with zone A to the front of the apparatus.

Each optical warning device shall be installed on the apparatus and connected to the apparatus's electrical system in accordance with the requirements of this standard and the requirements of the manufacturer of the device.

A master optical warning system switch that energizes all the optical warning devices shall be provided.

The optical warning system on the fire apparatus shall be capable of two separate signaling modes during emergency operations. One mode shall signal to drivers and pedestrians that the apparatus is responding to an emergency and is calling for the right-of-way. One mode shall signal that the apparatus is stopped and is blocking the right-of-way. The use of some or all of the same warning lights shall be permitted for both modes provided the other requirements of this chapter are met.

A switching system shall be provided that senses the position of the parking brake or the park position of an automatic transmission. When the master optical warning system switch is closed and the parking brake is released or the automatic transmission is not in park, the warning devices signaling the call for the right-of-way shall be energized. When the master optical warning system switch is closed and the parking brake is on or the automatic transmission is in park, the warning devices signaling the blockage of the right-of-way shall be energized. The system shall be permitted to have a method of modifying the two signaling modes.

The optical warning devices shall be constructed or arranged so as to avoid the projection of light, either directly or through mirrors, into any driving or crew compartment(s). The front optical warning devices shall be placed so as to maintain the maximum possible separation from the headlights.

UPPER LEVEL OPTICAL WARNING DEVICES

The upper-level optical warning devices shall be mounted as high and as close to the corner points of the apparatus as is practical to define the clearance lines of the apparatus. The upper-level optical warning devices shall not be mounted above the maximum height, specified by the device manufacturer.

ZONE A - FRONT WARNING LIGHTS

The light bar shall be supplied and installed by the cab/chassis manufacturer.

The lightbar shall be separately switched at the 12 volt control panel in the cab.

ZONES B AND D - SIDE WARNING LIGHTS

UPPER REAR CORNER WARNING LIGHTS

There shall be two (2) Whelen 900 series (9" x 7") Red Linear Super-LED lights (90RR5FRR) provided, one (1) each side. Each light shall have a red lens and chrome flange.

The lights shall be switched at the 12 volt control panel in the cab.

UPPER FORWARD CORNER WARNING LIGHTS

There shall be four (4) Whelen 900 series (9" x 7") Red Linear Super-LED lights (90RR5FRR) provided, two (2) each side. Each light shall have a red lens and chrome flange.
SHOP NOTES
(1 each side) rear corner
(1 each side) center

The lights shall be switched at the 12 volt control panel in the cab.

ZONE C - REAR WARNING LIGHTS

There shall be two (2) Whelen 900 series (9" x 7") Linear Super-LED lights (90RR5FRR) provided, two (2) each side. Each light shall have a red lens and chrome flange.

There shall be two (2) Whelen 900 series (9" x 7") Linear Super-LED lights (90AA5FAR) provided, two (2) each side. Each light shall have a amber lens and chrome flange.

The lights shall be switched at the 12 volt control panel in the cab.

LOWER LEVEL OPTICAL WARNING DEVICES

To define the clearance lines of the apparatus, the optical center of the lower-level optical warning devices in the front of the vehicle shall be mounted on or forward of the front axle centerline and as close to the front corner points of the apparatus as is practical.

The optical center of the lower-level optical warning devices at the rear of the vehicle shall be mounted on or behind the rear axle centerline and as close to the rear corners of the apparatus as is practical. The optical center of any lower-level device shall be between 18 in. and 62 in. (460 mm and 1600 mm) above level ground for large apparatus, and 18 in. and 48 in. (460 mm and 1220 mm) above level ground for small apparatus.

A midship optical warning device shall be mounted right and the left sides of the apparatus if the distance between the front and rear lower-level optical devices exceeds 25 ft (7.6 m) at the optical center. Additional midship optical warning devices shall be required, where necessary, to maintain a horizontal distance between the centers of adjacent lower-level optical warning devices of 25 ft (7.6 m) or less. The optical center of any midship mounted optical warning device shall be between 18 in. and 62 in. (460 mm and 1600 mm) above level ground.

ZONE A - FRONT WARNING LIGHTS

The warning lights shall be supplied and installed by the cab/chassis manufacturer. They shall be Whelen lights to complete an NFPA compliant lower level warning light system.

The lights shall be switched at the 12 volt control panel in the cab.

ZONES B AND D - CAB INTERSECTOR LIGHT (CAB FRONT CORNERS)

The warning lights shall be supplied and installed by the cab/chassis manufacturer. They shall be Whelen lights to complete an NFPA compliant lower level warning light system.

The lights shall be switched at the 12 volt control panel in the cab.

ZONES B AND D - CAB INTERSECTOR LIGHT (CAB SIDE)

The warning lights shall be supplied and installed by the cab/chassis manufacturer. They shall be Whelen lights to complete an NFPA compliant lower level warning light system.

The lights shall be switched at the 12 volt control panel in the cab.

ZONES B AND D - BODY INTERSECTOR LIGHT (BODY WHEELWELL AREA)

There shall be two (2) Whelen 600 series (6" x 4") red Linear Super-LED lights (60R02FRR) provided, one (1) each side. Each light shall have a red lens and chrome flange.

The lights shall be switched at the 12 volt control panel in the cab.

ZONES B AND D - BODY INTERSECTOR LIGHT (BODY REAR CORNERS)

There shall be two (2) Whelen 600 series (6" x 4") red Linear Super-LED lights (60R02FRR) provided, one (1) each side. Each light shall have a red lens and chrome flange.

The lights shall be switched at the 12 volt control panel in the cab.

ZONE C - REAR WARNING LIGHTS (LOWER REAR CORNERS)

There shall be two (2) Whelen 600 series (6" x 4") red Linear Super-LED lights (60R02FRR) provided, one (1) each side. Each light shall have a red lens and chrome flange.

The lights shall be switched at the 12 volt control panel in the cab.

LINE VOLTAGE ELECTRICAL SYSTEM

ONAN PTO GENERATOR

The vehicle shall be equipped with an Onan Protec PTO generator system with a capacity of 35,000 watts at 120/240 VAC, 291/145 amps, single phase. Current frequency shall be stable at 60 hertz.

The transmission's PTO port and PTO, or the split shaft PTO, and all associated drive shaft components shall be rated to support the continuous duty torque requirements of the generator's continuous duty rating as stated on the power source nameplate.

Where the generator is driven by the chassis engine and transmission through a split shaft PTO, the driving compartment speedometer shall register when the generator drive system is engaged.

Where the generator is driven by the chassis engine and transmission through a split shaft PTO and a chassis transmission retarder is furnished, it shall be automatically disengaged for generator operations.

The direct drive generator shall be mounted so that it does not change the ramp breakover angle, angle of departure, or angle of approach as defined by other components, and it shall not extend into the ground clearance area.

The direct drive generator shall be mounted away from exhaust and muffler areas or provided with a heat shield to reduce operating temperatures in the generator area.

SYRACUSE FIRE DEPARTMENT
SVI #824
PRODUCTION SPECIFICATION

GENERATOR ENGAGEMENT

A “Generator Engaged” indicator shall be provided in the driving compartment to indicate that the generator shift has been successfully completed.

An “OK to Operate Generator” indicator shall be provided in the driving compartment to indicate that the generator is engaged (if not always engaged), the transmission is in the proper gear (if required, automatic transmissions only), and the parking brake is engaged (if applicable).

An interlock system shall be provided to prevent advancement of the engine speed in the driving compartment or at any operator’s panel unless the parking brake is engaged, and the transmission is in neutral or the output of the transmission is correctly connected to a pump or generator instead of the drive wheels.

WARRANTY PERIOD

Provided such goods are operated and maintained in accordance with Onan's written instructions, Onan warrants that the Protec YDCR series PTO generators shall be free from defects in material and workmanship for a period of five (5) years or one thousand (1,000) hours, whichever comes first, from the date of delivery to the first purchaser.

GENERATOR SPLASH GUARD

A powder coat painted splash cover shall be installed to reduce the amount of road spray on the frame mounted PTO generator. A V-ring seal shall also be installed in the cover to provide additional protection against contaminates reaching the generator front seals.

GENERATOR MOUNTING

The generator shall be mounted between the chassis frame rails. The generator mounting brackets shall be fabricated using heavy duty steel tubing, or structural channel. The generator mounting shall be bolted and removable so that the generator can be lowered from under apparatus for service, if necessary. The generator case shall not extend below the bottom edge of the apparatus body.

MANUALS AND SCHEMATICS

Two (2) complete manuals on parts list, maintenance, wiring schematics, hydraulic schematics, circuit boards, voltage regulator board and other components shall be provided on delivery.

POWER-TAKE-OFF GENERATOR DRIVE

There shall be a "Hot Shift" power-take-off (PTO) installed on the transmission PTO opening of the chassis. The "Hot Shift" PTO is provided to allow the engagement of the PTO at higher engine RPM speeds. The PTO output shall be connected to the generator through hollow tube type driveline with heavy duty universals.

The engagement of the PTO shall be in the chassis cab with a rocker switch and red pilot light to note engagement of the PTO.

The power supply to the PTO engagement control shall be wired to the parking brake and a neutral position transmission switch to prevent engagement unless the vehicle is stopped and transmission has been placed in neutral.

The installation of the engine, transmission, driven accessories (power takeoffs (PTO), etc.) shall meet the engine and transmission manufacturers' installation recommendations for the service intended.

Model part number shall be Chelsea 277XMFJPB5XD, 129% Ratio.

ENGINE SPEED CONTROL

An engine speed auxiliary control device (high idle switch or throttle) shall be installed to maintain a stable cycle output from generator when the apparatus is parked.

An interlock shall prevent the operation of the engine speed auxiliary control device unless the parking brake is engaged and the transmission is in neutral or park, or the parking brake is engaged and the engine is disengaged from the drive wheels.

The engine shall be prevented from regulating its own engine speed during times when engine rpm control is critical for consistent apparatus functions such as generator, water pump, or aerial operation.

LOADCENTER

The loadcenter shall be a Cutler Hammer, BR Series, specifically designed for protection and distribution of 120/240 volt AC, such as lighting and small motor branch circuits. The loadcenter enclosure shall be made of 16 gauge galvanized sheet steel. The galvanized coating provides corrosion protection and as such does not require paint. All trims used on the BR Loadcenter shall be chromate sealed and finished with electro disposition epoxy paint (ASA61) which exceeds requirements for outdoor and indoor applications. A combination surface/flush cover with integral door shall be supplied.

The loadcenter shall be UL / CSA listed, **NO EXCEPTIONS** will be allowed.

GENERATOR MONITORING PANEL

To properly monitor the generator performance and load demand during operation, the generator installation shall be equipped with a full instrument monitor panel.

- Generator frequency in hertz
- Line 1 current in amperes
- Line 2 current in amperes
- Generator voltage in volts

The program shall support the accumulation of elapsed generator hours. Generator hours shall be displayed.

OUTLETS AND CIRCUITS

The generator and or shore power shall supply the 120/240 volt electrical equipment and outlets outlined below. Proper circuit protection shall be installed as noted:

Two (2) 120 volt exterior outlets, one (1) each side near rear wheel well area.

- The outlet receptacle(s) shall be 20 amp, straight-blade (NEMA 5-20R).

LINE VOLTAGE ELECTRICAL SYSTEM

GENERAL REQUIREMENTS

Stability

Any fixed line voltage power source producing alternating current (ac) shall produce electric power at 60 Hz, ±3 Hz when producing power at all levels between no load and full rated power. Any fixed line voltage power source shall produce electric power at the rated voltage ±10 percent when producing power at all levels between no load and full rated power.

The maximum voltage supplied to portable equipment shall not exceed 275 volts to ground. Higher voltage shall be permitted only when used to operate fixed wired, permanently mounted equipment on the apparatus.

Conformance with National Electrical Code

All components, equipment, and installation procedures shall conform to *NFPA 70*, *National Electrical Code*, except where superseded by the requirements of this chapter. Where the requirements of this chapter differ from those in *NFPA 70*, the requirements in this chapter shall apply.

Where available, line voltage electrical system equipment and materials included on the apparatus shall be listed and used only in the manner for which they have been listed. All equipment and materials shall be installed in accordance with the manufacturer's instructions.

Location Ratings

Any equipment used in a dry location shall be listed for dry locations. Any equipment used in a wet location shall be listed for wet locations.

Any equipment, except a PTO-driven generator, used in an underbody or under chassis location that is subject to road spray shall be either listed as Type 4 or mounted in an enclosure that is listed as Type 4.

If a PTO-driven generator is located in an underbody or under chassis location, the installation shall include a shield to prevent road spray from splashing directly on the generator.

Grounding

Grounding shall be in accordance with 250.34(A) and 250.34(B) of *NFPA 70*. Ungrounded systems shall not be used.

Only stranded or braided copper conductors shall be used for grounding and bonding.

The grounded current-carrying conductor (neutral) shall be insulated from the equipment-grounding conductors and from the equipment enclosures and other grounded parts.

The neutral conductor shall be colored white or gray in accordance with 200.6, "Means of Identifying Grounded Conductors," of *NFPA 70*.

Any bonding screws, straps, or buses in the distribution panel board or in other system components between the neutral and equipment-grounding conductor shall be removed and discarded.

Bonding

The neutral conductor of the power source shall be bonded to the vehicle frame. The neutral bonding connection shall occur only at the power source. In addition to the bonding required for the low voltage return current, each body and each driving or crew compartment enclosure shall be bonded to the vehicle frame by a copper conductor.

The conductor shall have a minimum amperage rating, as defined in 310.15, “Ampacities for Conductors Rated 0–2000 Volts,” of *NFPA 70*, of 115 percent of the rated amperage on the power source specification label.

A single conductor that is sized to meet the low voltage and line voltage requirements shall be permitted to be used.

Ground Fault Circuit Interrupters

In special service vehicles incorporating a lavatory, sink, toilet, shower, or tub, 120 V, 15 or 20 A receptacles within 6 ft (1.8 m) of these fixtures shall have ground fault circuit interrupter (GFCI) protection. GFCIs integrated into outlets or circuit breakers or as stand-alone devices shall be permitted to be used in situations.

Power Source General Requirements

All power source system mechanical and electrical components shall be sized to support the continuous duty nameplate rating of the power source.

The power source shall be shielded from contamination that would prevent the power source from operating within its design specifications.

Power Source Rating

For power sources of 8 kW or larger, the power source manufacturer shall declare the continuous duty rating that the power source can provide when installed on fire apparatus according to the manufacturer’s instructions and run at 120°F (49°C) air intake temperature at 2000 ft (600 m) above sea level.

The rating on the power source specification label shall not exceed the declared rating from the power source manufacturer.

Access shall be provided to permit both routine maintenance and removal of the power source for major servicing. The power source shall be located such that neither it nor its mounting brackets interfere with the routine maintenance of the fire apparatus.

Instrumentation

If the power source is rated at less than 3 kW, a “Power On” indicator shall be provided. If the power source is rated at 3 kW or more but less than 8 kW, a voltmeter shall be provided.

If the power source is rated at 8 kW or more, the following instrumentation shall be provided at an operator’s panel:

- Voltmeter
- Current meters for each ungrounded leg
- Frequency (Hz) meter

1) Power source hour meter

The instrumentation shall be permanently mounted at an operator’s panel. The instruments shall be located in a plane facing the operator. Gauges, switches, or other instruments on this panel shall each have a label to indicate their function.

The instruments and other line voltage equipment and controls shall be protected from mechanical damage and not obstructed by tool mounting or equipment storage.

An instruction plate(s) 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.

Operation

Provisions shall be made for placing the generator drive system in operation using controls and switches that are identified and within convenient reach of the operator.

Where the generator is driven by the chassis engine and engine compression brakes or engine exhaust brakes are furnished, they shall be automatically disengaged for generator operations.

Any control device used in the generator system power train between the engine and the generator shall be equipped with a means to prevent unintentional movement of the control device from its set position in the power generation mode.

If there is permanent wiring on the apparatus that is designed to be connected to the power source, a power source specification label that is permanently attached to the apparatus at the operator’s control station shall provide the operator with the information required.

The power source, at any load, shall not produce a noise level that exceeds 90 dBA in any driving compartment, crew compartment, or onboard command area with windows and doors closed or at any operator’s station on the apparatus.

Power Supply Assembly

The conductors used in the power supply assembly between the output terminals of the power source and the main over current protection device shall not exceed 12 ft (4 m) in length.

All power supply assembly conductors, including neutral and grounding conductors, shall have an equivalent amperage rating and shall be sized to carry not less than 115 percent of the amperage of the nameplate current rating of the power source.

If the power supply assembly connects to the vibrating part of a generator (not a connection on the base), the conductors shall be flexible cord or other fine-stranded conductors enclosed in metallic or nonmetallic liquid tight flexible conduit rated

for wet locations and temperatures not less than 194°F (90°C).

Overcurrent Protection

Manually resettable over current devices shall be installed to protect the line voltage electrical system components.

Power Source Protection

A main over current protection device shall be provided that is either incorporated in the power source or connected to the power source by a power supply assembly.

The size of the main over current protection device shall not exceed 100 percent of the rated amperage stated on the power source specification label or the rating of the next larger available size over current protection device, where so recommended by the power source manufacturer.

If the main over current protection device is subject to road spray, the unit shall be housed in a Type 4–rated enclosure.

Branch Circuit Overcurrent Protection

Over current protection devices shall be provided for each individual circuit and shall be sized at not less than 15 amps in accordance with 240.4, “Protection of Conductors,” of *NFPA 70*.

Any panel board shall have a main breaker where the panel has six or more individual branch circuits or the power source is rated 8 kW or larger.

Each over current protection device shall be marked with a label to identify the function of the circuit it protects.

Dedicated circuits shall be provided for any large appliance or device (air conditioning units, large motors, etc.) that requires 60 percent or more of the rated capacity of the circuit to which it is connected, and that circuit shall serve no other purpose.

Panelboards

All fixed power sources shall be hardwired to a permanently mounted panel board unless one of the following conditions exists:

2) All line voltage power connections are made through receptacles on the power source and the receptacles are protected by integrated over current devices.
3) Only one circuit is hardwired to the power source, which is protected by an integrated over current device.

The panel shall be visible and located so that there is unimpeded access to the panel board controls. All panel boards shall be designed for use in their intended location. The panel(s) shall be protected from mechanical damage, tool mounting, and equipment storage.

Where the power source is 120/240 V and 120 V loads are connected, the apparatus manufacturer or line voltage system installer shall consider load balancing to the extent that it is possible.

Wiring Methods

Fixed wiring systems shall be limited to the following:

4) Metallic or nonmetallic liquid tight flexible conduit rated at temperatures not less than 194°F (90°C) with stranded copper wire rated for wet locations and temperatures not less than 194°F (90°C)
1) Type SOW, SOOW, SEOW, or SEOOW flexible cord rated at 600 V and at temperatures not less than 194°F (90°C)

Electrical cord or 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 arranged as follows:

2) Separated by a minimum distance of 12 in. (300 mm) from exhaust piping or shielded from such piping
1) Separated from fuel lines by a minimum distance of 6 in. (150 mm)

A means shall be provided to allow “flexing” between the driving and crew compartment, the body, and other areas or equipment whose movement would stress the wiring.

Electrical cord or conduit shall be supported within 6 in. (150 mm) of any junction box and at a minimum of every 24 in. (600 mm) of run.

Supports shall be made of nonmetallic materials or of corrosion-resistant or corrosion-protected metal. All supports shall be of a design that does not cut or abrade the conduit or cord and shall be mechanically fastened to the apparatus.

Only fittings and components listed for the type of cord or conduit being installed shall be used.

Splices shall be made only in a listed junction box.

Additional Requirements for Flexible Cord Installations

Where flexible cord is used in any location where it could be damaged, it shall be protected by installation in conduit, enclosures, or guards.

Where flexible cord penetrates a metal surface, rubber or plastic grommets or bushings shall be installed.

Wiring Identification

Each line voltage circuit originating from the main panel board shall be identified.

The wire or circuit identification either shall reference a wiring diagram or wire list or shall indicate the final termination point of the circuit.

Where prewiring for future power sources or devices exists, the un-terminated ends shall be marked with a label showing their wire size and intended function.

Wiring System Components

Only stranded copper conductors with an insulation rated for temperatures of at least 194°F (90°C) and wet locations shall be used. Conductors in flexible cord shall be sized in accordance with Table 400.5(A) of *NFPA 70*. Conductors used in conduit shall be sized in accordance with 310.15, "Ampacities for Conductors Rated 0–2000 Volts," of *NFPA 70*. Aluminum or copper-clad aluminum conductors shall not be used.

All boxes shall conform to and be mounted in accordance with Article 314, "Outlet, Device, Pull, and Junction Boxes; Conduit Bodies; Fittings; and Manholes," of *NFPA 70*. All boxes shall be accessible using ordinary hand tools. Boxes shall not be permitted behind welded or pop-riveted panels.

The maximum number of conductors permitted in any box shall be in accordance with 314.16, "Number of Conductors in Outlet, Device, and Junction Boxes, and Conduit Bodies," of *NFPA 70*.

All wiring connections and terminations shall provide a positive mechanical and electrical connection. Connectors shall be installed in accordance with the manufacturer's instructions. Wire nuts or insulation displacement and insulation piercing connectors shall not be used.

Each switch shall indicate the position of its contact points (i.e., open or closed) and shall be rated for the continuous operation of the load being controlled. All switches shall be marked with a label indicating the function of the switch. Circuit breakers used as switches shall be "switch rated" (SWD) or better. Switches shall simultaneously open all associated line voltage conductors. Switching of the neutral conductor alone shall not be permitted.

Line voltage circuits controlled by low voltage circuits shall be wired through properly rated relays in listed enclosures that control all non-grounded current-carrying conductors.

Receptacles and Inlet Devices

Wet and Dry Locations

All wet location receptacle outlets and inlet devices, including those on hardwired, remote power distribution boxes, shall be of the grounding type, provided with a wet location cover, and installed in accordance with Section 406.8, "Receptacles in Damp or Wet Locations," of *NFPA 70*.

All receptacles located in a wet location shall be not less than 24 in. (600 mm) from the ground. Receptacles on off road fire apparatus shall be a minimum of 30 in. (750 mm) from the ground. All receptacles located in a dry location shall be of the grounding type and shall be at least 12 in. (300 mm) above the interior floor height. No receptacle shall be installed in a face-up position.

The face of any wet location receptacle shall be installed in a plane from vertical to not more than 45 degrees off vertical.

Receptacle Label

Each receptacle shall be marked with a label indicating the nominal line voltage (120 volts or 240 volts) and the current rating in amps of the circuit. If the receptacle is DC or other than single phase, that information shall also be marked on the label.

All receptacles and electrical inlet devices shall be listed to UL 498, *Standard for Safety Attachment Plugs and Receptacles*, or other recognized performance standards.

Receptacles used for DC voltages shall be rated for DC service.

Wiring Schematics

An "As-Built" Wiring diagrams for line voltage systems shall be provided to include the following information;

1) Pictorial representations of circuit logic for all electrical components and wiring
2) Circuit identification
3) Connector pin identification
4) Zone location of electrical components
5) Safety interlocks
6) Alternator–battery power distribution circuits
7) Input/output assignment sheets or equivalent circuit logic implemented in multiplexing systems

120/240 VAC SCENE LIGHTING

SIDE UPPER RECESSED SCENE LIGHTS

Four (4) Fire Research Focus, 240 Spectra, shall be installed. They shall be equally divided between the curbside and streetside. The housing shall incorporate shall be UL listed as a scene light for fire service use.

Scene lights shall be provided with a lens or a means for preventing damage from water spray and shall be listed for wet location usage.
SHOP NOTES
Make:Fire Research
Model: Spectra
Dave S Special Priced - he has info on lights - B.O.M. original parts removed.

(a) The above lights shall be controlled by two (2) rocker switch(es). The rocker switch(es) shall be located in the cab within reach of the Driver and/or Officer.

EQUIPMENT PAYLOAD WEIGHT ALLOWANCE

In compliance with NFPA 1901 standards, the special service vehicle shall be designed for an equipment loading allowance of 4,000 lbs. of Syracuse Fire Department provided loose equipment based on a 30,001 - 40,000 pound gross vehicle weight rating.

EQUIPMENT

The following equipment shall be furnished with the completed special service vehicle;

a) One (1) container of assorted stainless steel nuts, bolts, screws and washers used in the construction of the apparatus shall be provided with the completed apparatus.

REMAINING NFPA MINOR EQUIPMENT BY PURCHASER

All other minor equipment not specified above, but required by NFPA 1901 before the unit is placed in service shall be supplied and mounted by Syracuse Fire Department.