BID SOLICITATION

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
CAPITOL HILL
PROVIDENCE RI 02908

BID NUMBER: B03998

TITLE: CUSTOM BUILT RESCUE VEHICLE

BID OPENING DATE AND TIME:

07/22/2004 11:00 AM

BUYER: LISA HILL
PHONE #: (401) 222 - 2142 ext. 116

BILL TO

MILITIA OF THE STATE
MS EXECUTIVE MILITARY STAFF
ADMIN FINANCIAL DIVISION
645 NEW LONDON AVENUE
CRANSTON RI 02920

SHIP TO

MILITIA OF THE STATE
MS-EMS EMERGENCY MANAGEMENT
OFFICE OF PUBLIC SAFETY
645 NEW LONDON AVE
CRANSTON RI 02920

Requisition Number(s): R14A048719

Item	Class-Item	Quantity	Unit	Unit Price	Total
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1.0	070-03 MOBILE SUPPORT UNIT - CUSTOM CAB AND CHASSIS PER ATTACHED SPECIFICATIONS	1.00	EA	_____	_____
				TOTAL:	_____

It is the Vendor's responsibility to check and download any and all addenda from the RIVIP. This offer may not be considered unless a signed RIVIP generated Bidder Certification Cover Form is attached and the Unit Price column is completed. The signed Certification Cover Form must be attached to the front of the offer. When delivering offers in person to One Capitol Hill, vendors are advised to allow at least one hour additional time for clearance through security checkpoints.

DELIVERY: _____

RIVIP VENDOR ID#: _____

TERMS OF PAYMENT: _____

DO NOT SIGN BID ON THIS PAGE!
USE CERTIFICATION COVER FORM.

Rhode Island Emergency Management Agency

645 New London Avenue
Cranston, Rhode Island 02920

SPECIFICATIONS FOR A ONE (1) CUSTOM BUILT HEAVY DUTY COMMAND/RESCUE VEHICLE

INTENT OF SPECIFICATIONS

It shall be the intent of these specifications to cover the furnishing and delivery of a complete vehicle equipped as hereinafter specified. These specifications cover only the general requirements as to the type of construction and test to which the vehicle shall conform, together with certain details as to finish, equipment and appliances with which the successful bidder shall conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor, who shall be solely responsible for the design and construction of all features. The vehicle proposed by the bidder shall meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in current edition at time of contract execution. Loose equipment shall be provided only as stated in the following pages.

Bids shall only be considered from companies that have an established reputation in the field of Custom Emergency Vehicles construction and have been in business for a minimum of 10 years. Further, bidder shall maintain dedicated service facilities for the repair and service of products. Evidence of such a facility shall be included in bidder proposal.

Each bidder shall furnish satisfactory evidence of their ability to construct the vehicle specified and shall state the location of the factory where the vehicle is to be built. The bidder shall also show that the company is in position to render prompt service and to furnish replacement parts for said vehicle.

Each bid shall be accompanied by a set of "Contractor's Specifications" consisting of a detailed description of the vehicle and equipment proposed and to which the vehicle furnished under contract shall conform. These specifications shall indicate size, type, model and make of all component parts and equipment.

QUALITY AND WORKMANSHIP

The design of the vehicle shall embody the latest approved automotive engineering practices. The workmanship shall be of the highest quality in its respective field. Special consideration shall be given to the following points: Accessibility of the various units which require periodic maintenance, ease of operation (including both pumping and driving) and symmetrical proportions. Construction shall be rugged and ample safety factors shall be provided to carry the loads specified and to meet both on and off road

requirements and speed conditions as set forth under "Performance Tests and Requirements". Welding shall not be employed in the assembly of the vehicle in a manner that shall prevent the ready removal of any component part for service or repair. All steel welding shall follow American Welding Society D1.1-96 recommendations for structural steel welding. All aluminum welding shall follow American Welding Society and ANSI D1.2-96 requirements for structural welding of aluminum. Flux core arc welding to use alloy rods, type 7000, American Welding Society standards A5.20-E70T1. The manufacturer shall be required to have an American Welding Society certified welding inspector in plant during working hours to monitor weld quality.

DELIVERY

The vehicle, to ensure proper break in of all components while still under warranty, s**hall be delivered under its own power** - rail or truck freight shall not be acceptable. A qualified delivery engineer representing the contractor shall deliver the vehicle and remain for a sufficient length of time to instruct personnel in the proper operation, care and maintenance of the equipment delivered.

INFORMATION REQUIRED

The manufacturer shall supply at time of delivery, complete operation and maintenance manuals covering the completed vehicle as delivered. A permanent plate shall be mounted in the driver's compartment which specifies the quantity and type of fluids required including engine oil, engine coolant, transmission and drive axle.

PERFORMANCE TESTS AND REQUIREMENTS

A road test shall be conducted with the vehicle fully loaded and a continuous run of ten (10) miles or more shall be made under all driving conditions, during which time the vehicle shall show no loss of power or overheating. The transmission drive shaft or shafts, and rear axles shall run quietly and be free from abnormal vibration or noise throughout the operating range of the vehicle. Vehicle shall adhere to the following parameters:

A) The vehicle, when fully equipped and loaded, shall have not less than 25% nor more than 50% of the weight on the front axle, and not less than 50% nor more than 75% on the rear axle.

B) The vehicle shall be capable of accelerating to 35 mph from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed rpm of the engine.

C) The service brakes shall be capable of stopping a fully loaded vehicle in 35 feet at 20 mph on a level concrete highway. The air brake system shall conform to Federal Motor Vehicle Safety Standards (FMVSS) 121.

D) The vehicle, fully loaded, shall be capable of obtaining a speed of 50 mph on a level concrete highway with the engine not exceeding its governed rpm (full load).

FAILURE TO MEET TEST

In the event the vehicle fails to meet the test requirements of these specifications on the

first trial, second trials may be made at the option of the bidder within 30 days of the date of the first trial. Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection. Failure to comply with changes to conform to any clause of the specifications, within 30 days after notice is given to the bidder of such changes, shall also be cause for rejection of the vehicle. Permission to keep or store the vehicle in any building owned or occupied by the purchaser or its use by the purchaser during the above-specified period with the permission of the bidder shall not constitute acceptance.

LIABILITY

The successful bidder shall defend any and all suits and assume all liability for the use of any patented process including any device or article forming a part of the vehicle or any appliance furnished under the contract.

SPECIFICATION BID REQUIREMENTS

Bidders shall also indicate in the "yes/no" column if their bid complies on each item (PARAGRAPH) specified. Exceptions shall be allowed if they are equal to or superior to that specified and provided they are listed and fully explained on a separate page.

Proposals taking total exception to specifications shall not be acceptable.

Also, bidders shall submit a detailed proposal. A letter only, even though written on a company letterhead, shall not be sufficient. Bid proposals shall be submitted in the same sequence as specifications for ease of evaluation, comparison and checking of compliance. **An exception to these requirements shall not be tolerated.**

EXCEPTIONS

All exceptions shall be stated no matter how seemingly minor. Any exceptions not taken shall be assumed by the purchaser to be included in the proposal, regardless of the cost to the bidder.

GENERAL CONSTRUCTION

The vehicle shall be designed with due consideration to distribution of load between the front and rear axles. Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Association.

COMMERCIAL GENERAL LIABILITY INSURANCE

The successful bidder shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of commercial general liability insurance:

Products/Completed Operations Aggregate	$2,000,000
Personal and Advertising Injury	$1,000,000
Each Occurrence	$1,000,000
Aggregate Limit	$2,000,000

Coverage shall be written on a Commercial General Liability form. The policy shall be

written on an occurrence form and shall include Contractual Liability coverage. The policy shall include owner as an additional insured as their interest may appear.

The required limits can be provided by one or more policies provided all other insurance requirements are met.

If the vendor has self insured retention or a deductible this must be shown in the Certificate of Insurance

Coverage shall be provided by a carrier(s) rated "Excellent" by A.M. Bests.

UMBRELLA/EXCESS LIABILITY INSURANCE

The successful bidder shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of umbrella liability insurance:

Aggregate: $25,000,000
Each Occurrence: $25,000,000

The policy shall be written on an occurrence basis and at a minimum provide the same coverage's as Bidder's General Liability, Automobile Liability and Employer's Liability policies. Owner shall be included as an additional insured on the General Liability and Automobile Liability policies as their interest may appear. The required limits can be provided by one or more policies provided all other insurance requirements are met.

Bidder agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with its bid. The certificate shall be made out to the purchaser and be an original, no photocopies shall be accepted. The Certificate of Insurance shall provide that owner be given 30 days advance notice of cancellation, nonrenewal or material change in coverage.

ISO COMPLIANCE

The manufacturer shall operate a Quality Management System under the requirements of ISO 9001. These standards sponsored by the "International Organization for Standardization (ISO)" specify the quality systems that shall be established by the manufacturer for design, manufacture, installation and service. A copy of the certificate of compliance shall be included with the bid.

SINGLE SOURCE MANUFACTURER

Bids shall only be accepted from a single source vehicle manufacturer. The definition of single source is a manufacturer that designs and manufactures their products using an integrated approach, including the chassis, cab and body being fabricated and assembled on the bidder's premises. The warranties relative to the chassis and body design (excluding component warranties such as engine, transmission, axles, pump, etc.) must be from a single source manufacturer and not split between manufacturers (i.e. body and chassis). The bidder shall provide evidence that they comply with this requirement.

SERVICE CENTER

Bidder shall maintain a factory authorized service center within **100 miles of the Rhode Island State EMA Office** .The service center shall have the following minimum qualifications:

1. Minimum 10 years of continuous ownership and management
2. Total in-house body shop capability
3. Minimum 40 foot down draft paint booth with environmental approval
4. Pump mechanics certified by the pump manufacturer
5. Automotive electricians trained by the manufacturer.
6. PRO-LINK 9000 analytical device with current software
7. Lap top shop computer with current multiplex analytical software and modem for direct truck to factory communication
8. Full time body repair and automotive paint staff
9. Certified Master ASE and EVT Technicians
10. Warranty center for Caterpillar, Cummins, Detroit Diesel, Allison Transmission, Hendrickson, Merritor
10. Computerized parts listing
11. Aerial and hydraulic repair specialists
12. 24 Hour Road service vehicle

Copies of EVT and ASE Certifications shall be submitted with the bid. (NO EXCEPTIONS)

CONTRACT

The contract for the specified vehicle shall be directly with the **State of Rhode Island** and the manufacturer. Contracts with dealers or representatives of the manufacturer will not be executed.

DRAWINGS WITH BID PROPOSAL

A to scale drawing shall be provided with the bid. These drawings shall show the interior and exterior of the vehicle. A detailed layout of the interior radio and electronics system shall be furnished.

APPROVAL DRAWING

A drawing of the proposed vehicle shall be provided for approval before construction begins. The sales representative shall also have a copy of the same drawing. The finalized and approved drawing shall become part of the contract documents. This drawing shall indicate the chassis make and model, location of the lights, siren, horns, compartments, major components, etc.

A "revised" approval drawing of the vehicle shall be prepared and submitted by the manufacturer to the purchaser showing any changes made to the approval drawing.

INSPECTION TRIP(S)

The bidder will provide two (2) factory inspection trip(s) for three (3) members of the

Rhode Island EMA. The inspection trip(s) will be scheduled at times mutually agreed upon between the manufacturer's representative and the customer. All costs such as travel, lodging and meals will be the responsibility of the bidder.

TRAINING

A training engineer will be provided by the bidder. The training engineer shall instruct the Rhode Island EMA personnel in the operation and maintenance of the chassis, and radio equipment and related appurtenances for a period of not less than five (5) days. The training shall incorporate modern training techniques. An "as built" Power Point® presentation shall be included as part of the instruction. A copy shall be left with the Rhode Island EMA to use for future instruction.

WARRANTY

The vehicle shall be warranted to be free from defects in materials or workmanship under normal use and service. Each manufacturer shall supply, as a part of their bid package, a copy of the warranty or warranties that they propose to provide, and in no case shall it be less than one (1) year on the entire vehicle.

All other warranties, as outlined in these specifications shall be provided in writing as a part of the bid package.
Failure to provide the warranties as outlined throughout these specifications shall be cause for rejection of the bid package.

BID BOND

All bidders shall provide a bid bond as security for the bid in the form of a **15%** bid bond, to accompany their bid. This bid bond shall be issued by a Surety Company who is listed on the U.S. Treasury Departments list of acceptable sureties as published in Department Circular 570. The bid bond shall be issued by an authorized representative of the Surety Company and shall be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond shall include language which assures that the bidder/principal shall give a bond or bonds, as may be specified in the bidding or contract documents, with good and sufficient surety for the faithful performance of the contract, including the warranty, and for the prompt payment of labor and material furnished in the prosecution of the contract.

PERFORMANCE BOND

The successful bidder shall provide, within thirty (30) days after award of contract, and along with a signed copy of the contract, a performance bond, which guarantees performance of all terms and conditions of the contract and warranty agreement. The performance bond will specifically cover the performance of the contract according to its terms and conditions, as well as payment of all related bills and encumbrances. This performance bond shall be issued by a surety company who is listed by the U.S. Treasury Department's list of approved sureties, as published in Circular 570, as of the bid date. The performance bond shall be issued in an amount equal to 100% of the contract amount and shall be dated concurrent to, or subsequent to, the date of the contract.

CHASSIS
The chassis provided shall be a new, tilt-type custom vehicle. The chassis shall be manufactured in the vehicle body builder's facility eliminating any split responsibility. The chassis shall be designed and manufactured for heavy-duty service, with adequate strength and carrying capacity for the intended load.

SEATING CAPACITY
The seating capacity in the cab shall be two (2) .

WHEELBASE
The wheelbase of the vehicle shall be no greater than 260.50".

GVW RATING
The gross vehicle weight rating shall be a minimum of 46,260#.

FRAME
The chassis frame shall be built with two (2) steel channels bolted to five (5) cross members or more, depending on other options of the vehicle. The side rails shall have a 13.38" tall web over the front and mid sections of the chassis, with a continuous smooth taper to a 10.75" over the rear axle. Each rail shall have a section modulus of 25.992 in. sq., and a resisting bending moment (rbm) of 3,119,040 inch pounds over the critical regions of the frame assembly, with a section modulus of 18.96 in. sq. with an rbm of 2,275,200 inch pounds over the rear axle. The frame rails shall be constructed of 120,000 psi yield strength heat treated .38" thick steel, with 3.50" wide flanges.

FRAME REINFORCEMENT
In addition, a full length main frame inverted "L" liner shall be provided. It also shall be heat treated steel measuring 12.00" x 3.00" x .25". Each liner shall have a section modulus of 7.795 cu. in., yield strength of 110,000 psi and rbm of 857,462 inch pounds. Total rbm at wheelbase center shall be **3,976,502** pounds per rail.

FRAME RAIL WARRANTY
The frame rails shall be guaranteed for the **life of the vehicle,** which is the estimated to be 50 years, against defects in design, material or workmanship, excluding accident or abuse. A copy of the vehicle manufacturer's warranty shall be included with the bid.

FRONT NON DRIVE AXLE
The front axle shall be of the **independent suspension** design with a ground rating of 19,500 pounds.

Upper and lower control arms shall be used on each side of the axle. Upper control arm castings shall be made of 100,000-psi yield strength 8630 steel and the lower control arm casting shall be made of 55,000-psi yield ductile iron.

The center cross members and side plates shall be constructed out of 80,000-psi yield strength steel.

Each control arm shall be mounted to the center section using elastomer bushings. These rubber bushings shall rotate on low friction plain bearings and be lubricated for life. Each bushing shall also have a flange end to absorb longitudinal impact loads, reducing noise and vibrations.

There shall be nine (9) grease fittings supplied, one (1) on each control arm pivot and one (1) on the steering gear extension.

The upper control arm shall be shorter than the lower arm so that wheel end geometry provides positive camber when deflected below rated load and negative camber above rated load.

Camber at load shall be zero degrees for optimum tire life.

The kingpin bearing shall be of low friction design and be sealed for life.

Toe links that are adjustable for alignment of the wheel to the center of the chassis shall be provided.

The wheel ends must have little to no bump steer when the chassis encounters a hole or obstacle.

The steering linkage shall provide proper steering angles for the inside and outside wheel, based on the vehicle wheelbase.

The axle shall have a third party certified turning angle of 45 degrees. Front discharge, front suction, or aluminum wheels shall not infringe on this cramp angle.

FRONT NON DRIVE AXLE WARRANTY
The non drive axle system shall have a **three (3) year** parts and labor warranty.

OIL SEALS
Oil seals shall be provided on the front axle.

SHOCK ABSORBERS
Heavy-duty telescoping shock absorbers (Gabrial) shall be provided on the front suspension.

REAR AXLE
The rear axle shall be a Meritor™, Model RS-26-185, with a capacity of 27,000 pounds.

REAR AXLE WARRANTY
The Meritor™ **three (3) year** parts and labor warranty shall be provided with this axle, plus an additional **two (2) years** of parts only coverage. Meritor™ shall also provide a **one (1) year** parts and labor warranty for wheel seals. The seal warranty shall apply to our

standard Meritor™ wheel seals and shall not apply to another specified seal. If other seals are specified, the warranty shall be parts only.

TOP SPEED OF VEHICLE
A rear axle ratio shall be furnished to allow the vehicle to reach an approximate top speed of 64 to 67 MPH.

OIL SEALS
Oil seals shall be provided on the rear axle.

DRIVER CONTROL DIFFERENTIAL LOCK (DCDL)
A rear axle shall be equipped with a driver controlled differential lock (DCDL).

The control shall be located within easy reach of the driver. An indicator light shall be provided next to the control switch.

SUSPENSION
Front **independent suspension** shall be provided with a minimum ground rating of 19,500 pounds.

The independent suspension system shall be designed to provide maximum ride comfort. The design shall allow the vehicle to travel at highway speeds over improved road surfaces, and at moderate speeds over rough terrain with minimal transfer of road shock and vibration to the vehicle's crew compartment.

Each wheel shall have torsion bar type spring. In addition, each front wheel end shall also have energy absorbing jounce bumpers to prevent bottoming of the suspension.

The suspension design shall be such that there is at least 10.00" of total wheel travel and a minimum of 3.75" before suspension bottoms.

The torsion bar anchor lock system allows for simple lean adjustments, without the use of shims. One can adjust for a lean within 15 minutes per side. Anchor adjustment design is such that it allows for ride height adjustment on each side.

The independent suspension shall have been put through a durability test that simulated a minimum of 140,000 miles of inner city driving.

SUSPENSION, REAR
Rear springs to be semi-elliptical, 3.00" x 52.00", 12 leaf main with a ground of 27,000 pounds. Spring hangers to be castings with provisions for lubrication. The grease fittings to be 90 degree type and shall be accessible without removing the wheels or cutting any sheet metal. Two top leaves to wrap the forward spring hanger pin and the top leaf to wrap the rear spring hanger pin on both the front and rear suspensions.
Kaiser spring pins shall be provided, with double "figure-eight" grease grooves and a layer of electrolyses nickel plating, 1.0 mil thick around the entire pin. The bushing that holds

the spring pin in place shall also have a grease groove.

ANTI-LOCK BRAKE SYSTEM
The vehicle shall be equipped with a Wabco 4S4M, anti-lock braking system. The ABS shall provide a four (4) channel anti-lock braking control on both the front and rear wheels. It shall be a digitally controlled system that utilizes microprocessor technology to control the anti-lock braking system. Each wheel shall be monitored by the system. When any particular wheel begins to lockup, a signal shall be sent to the control unit. This control unit then shall reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lockup of any wheel thus helping to prevent the vehicle from skidding out of control.

ANTI-LOCK BRAKE SYSTEM WARRANTY
The Wabco ABS system shall come with a **three (3) year or 300,000 mile parts and labor** warranty provided by Meritor Wabco Vehicle Control Systems.

BRAKES
The service brake system shall be full air type.

The front brakes shall be Knorr/Bendix disc type with a **17.00" ventilated rotor** for improved stopping distance.

The brake system shall be certified, third party inspect for improved stopping distance.

The rear brakes shall be Meritor™ 16.50" x 7.00" cam operated with automatic slack adjusters.

AIR COMPRESSOR, BRAKE SYSTEM
The air compressor shall be a Bendix BA-921 with 15.8 cubic feet per minute output at 1250 RPM.

BRAKE SYSTEM
The brake system shall include:

- Bendix-Westinghouse dual brake treadle valve with vinyl covered foot surface.

- A heated automatic moisture ejector on air dryer.

- Total air system capacity of 4,362 cubic inch.

- Two (2) air pressure gauges with red warning light and audible alarm, that activates when air pressure falls below 60 psi.
- MGM spring set parking brake system.

- Parking brake operated by a Bendix-Westinghouse PP-1 control valve.

- A parking "brake on" indicator light on instrument panel.

- Bendix-Westinghouse SR-1 valve, in conjunction with a double check valve system, shall be provided with an automatic spring brake application at 40 psi.

- Bendix AD-9 air dryer, with heater

BRAKE LINES
Color coded nylon brake lines shall be provided. The lines shall be wrapped in a heat protective loom where necessary in the chassis.

AIR INLET
One (1) air inlet with male coupling shall be provided. It shall allow station air to be supplied to the vehicles brake system through a shoreline hose. The inlet shall be located in the driver side lower step well of cab. A check valve shall be provided to prevent reverse flow of air. The inlet shall discharge into the "wet" tank of the brake system. A mating female coupling shall also be provided with the loose equipment.

AIR COMPRESSOR - BRAKE SYSTEM MAINTENANCE
A Gast, Model 5HCD-10-M550X, air compressor shall be provided.

It shall be driven by the 110-volt shoreline electrical system.

The compressor shall maintain the air pressure in the chassis air brake system while the vehicle is not in use.

A Square-D, model #1-9013-GHG2J30, pressure switch shall sense when the system pressure drops and automatically start the compressor, which then shall run until pressure is restored.

A coalescing filter shall be provided, and installed in the system.

It shall be located in compartment left (driver's) side front compartment.

ENGINE
The chassis shall be powered by a Caterpillar electronic engine as described below:

- Model: C13, 12.5 L

- Number of Cylinders: Six (6)

- Bore and Stroke: 5.12" x 6.18" (130 mm x 157 mm)

- Displacement: 763 cubic inches (12.5 L)

- Advertised Horsepower: 455 at 2100 rpm

- Maximum Horse power: 455 at 2100 rpm

- Peak Torque: 1550 at 1200 rpm

- Compression Ratio: 16.25:1

- Governed speed: 2100

Standard equipment on the engine shall include the following:

- Air Cleaner: Farr or equal

- Fuel Filters: Dual, with check valve, primary filter shall be a Racor fuel water separator

- Coolant Filter: Spin-on with check valve (precharged with coolant inhibitor)

- Governor: Limiting speed type

- Injectors: Mechanically actuated, electronically controlled unit type

- Electronic Waste Gate

- Lube Oil Cooler

- Lube Oil Filter: Full flow

- Starting Motor: 12-volt

- Turbocharger

- Air to Air Aftercooled

ENGINE WARRANTY

Caterpillar will warrant the C7/C12/C15 engine to be free from defects in workmanship and design for a period of five (5) years. This warranty will cover both parts and labor for five (5) years.

There will also be an additional three (3) years of limited coverage supplied on the engine.

ENGINE INSTALLATION CERTIFICATION

The vehicle manufacturer shall provide, at the time of delivery, a letter from the engine manufacturer stating they approve of the engine installation in the bidder's chassis.
f bid.

ENGINE AIR INTAKE

The air intake with Ember Separator shall be mounted high on the passenger side of cab, to

the front of crew cab door to prevent road dirt and recirculating hot air from entering the engine.

The Ember Separator shall be easily accessible through a hinged stainless steel grille, with one (1) flush quarter turn latch.

EXHAUST SYSTEM

The exhaust system shall be 5.00" diameter. A catalytic converter shall be supplied to meet current EPA standards.

The exhaust shall exit on the left (driver's) side ahead of the rear wheels.

A heat deflector shield shall be provided where the tail pipe is routed under any side compartmentation.

EXHAUST INSULATION BLANKET

An insulation "blanket" wrap shall be provided on the exhaust delivery pipe for reduction of heat to the cab. The "blanket" wrap shall extend down the exhaust delivery pipe to the bottom of the frame rail.

CLUTCH FAN

A Horton clutch fan shall be provided. Clutch fan shall be automatic when the vehicles parking brake is engaged.

FUEL SEPARATOR

The engine shall be equipped with a Racor in-line spin-on fuel and water separator in addition to the engine fuel filters.

HIGH IDLE

A high idle switch shall be provided, inside the cab, on the instrument panel, that shall automatically maintain a preset engine rpm. A switch shall be installed, at the cab instrument panel, for activation/deactivation.

The high idle shall be operational only when the parking brake is on and the truck transmission is in neutral. A green indicator light shall be provided adjacent to the switch. The light shall illuminate when the above conditions are met. The light shall be labeled "OK To Engage High Idle".

COOLANT LINES

Silicone hoses shall be used for all engine/heater coolant lines installed by the chassis manufacturer.

Hose clamps shall be stainless steel "constant torque type" to prevent coolant leakage. They shall react to temperature changes in the cooling system and expand or contract accordingly while maintaining a constant clamping pressure on the hose.

RADIATOR

Radiator and the complete cooling system shall meet or exceed NFPA cooling system standards. Cooling system capacity shall exceed all cooling requirements specified by the engine manufacturer under all truck operating conditions. It shall have a built-in low coolant sight glass and an electronically controlled low coolant display mounted on the instrument panel. An integral surge and deaeration tank shall be provided to optimize the cooling system for all operating conditions.

The cooling system shall be designed to maintain pressure at nine (9) psi for maximum dissipation. A drain valve shall be located at the lowest point of the cooling system and at other points to permit complete flushing of the coolant from the system. Cooling air shall be drawn in by a heavy-duty fan, shrouded by recirculation shields that permit only fresh cool air through the radiator.

Radiator shall be of the serpentine design and bonded together by the patented "beta-weld" process for increased strength, longer road life and solder-bloom corrosion protection. Radiator shall be mounted in a manner to prevent the development of leaks caused by twisting or straining when the vehicle operates over uneven ground. Radiator core shall be compatible with commercial antifreeze solutions. Cooling system shall exhibit rapid warm-up without use of radiator shutters.

FUEL TANK

A **65-gallon** fuel tank shall be provided and mounted at rear of chassis. The tank shall be constructed of 12-gauge, hot rolled steel. It shall be equipped with swash partitions and a vent.

A .75" drain plug shall be provided in a low point of the tank for drainage.

A fill inlet shall be located on the driver's side of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Diesel Fuel Only".

A .50" diameter vent shall be provided running from top of tank to just below fuel fill inlet.

The tank shall meet all FHWA 393.67 requirements including a fill capacity of 95% of tank volume.

All fuel lines shall be provided as recommended by the engine manufacturer.

AUXILIARY FUEL PUMP

An auxiliary electric fuel pump shall be added to the fuel line for repriming the engine.

TRANSMISSION

An Allison, model EVS 4000PR, electronic, torque converting, automatic transmission with retarder shall be provided.

Two (2) PTO openings shall be located on left side and top of converter housing (positions 8 o'clock and 1 o'clock).

A transmission temperature gauge, with red light and audible alarm, shall be installed on the cab instrument panel.

The transmission retarder control shall be (RET3) activated 50% by letting off the accelerator pedal or 100% by applying the brake pedal. A second on/off switch is provided to activate and deactivate the auto apply portion.

The transmission shall have the 1600 ft. lb. torque (medium) spring setting for retardation force.

The transmission retarder shall have a master "on/off" switch on the instrument panel. An indicator light shall be provided to notify the driver the transmission retarder is activated. Also, a red indicator light shall be provided to warn that the transmission is being overworked.

The retarder shall be wired to the brake lights so they are energized when the retarder is slowing the vehicle down.

The ABS system shall automatically disengage the auxiliary braking device, when required.

TRANSMISSION, SHIFTER

A five (5)-speed push button shift module shall be mounted to right of driver on console. Shift position indicator shall be indirectly lit for after dark operation.

The transmission ratio shall be: 1st - 3.51 to 1.00, 2nd - 1.91 to 1.00, 3rd - 1.43 to 1.00, 4th - 1.00 to 1.00, 5th - 0.74 to 1.00, R - 4.80 to 1.00.

TRANSMISSION COOLER

An external transmission oil cooler shall be provided.

TRANSMISSION WARRANTY

The transmission shall have a **five (5) year/Unlimited mileage** warranty covering 100% parts and labor. The warranty to be provided by Allison Transmission and not vehicle builder.

TRANSMISSION FLUID

The transmission shall be provided with **TranSynd, or TES 295** (generic synthetic fluid) equivalent heavy duty synthetic transmission fluid.

DRIVELINE

Drivelines shall be a heavy duty metal tube and be equipped with Spicer 1810 universal joints.

The shafts shall be dynamically balanced before installation.

A splined slip joint shall be provided in each driveshaft, slip joint shall be coated with Glidecoat or equivalent.

STEERING

Dual Sheppard M110 steering gears, with integral heavy-duty power steering, shall be provided. The power steering shall incorporate a Vickers V20NF hydraulic pump with integral pressure and flow control.

The steering wheel shall be 18.00" in diameter, and capable of tilting and telescoping.

TIRES

Front tires shall be Michelin radials 315/80R22.50, 20 ply "all position" XZY-2 tread. The tires shall be mounted on Alcoa 22.50" x 9.00" polished aluminum disc wheels with a ten (10) stud, 11.25" bolt circle.

Rear tires shall be four (4) Michelin radials 12R22.50, 16 ply XDN, ice and snow tread. The tires shall be mounted on 22.50" x 9.00" polished aluminum disc wheels with a ten (10) stud-11.25" bolt circle.

LUG NUT COVERS

Chrome plated lug nut covers shall be installed on all lug nuts.

WHEEL CHOCKS

There shall be two (2) sets of folding Ziamatic SAC-44-E, aluminum alloy, Quick-Choc wheel blocks with easy-grip handle and SQCH-44-H horizontal mounting brackets provided. The chocks shall be mounted on the one (1) pair on each side of the rescue body ahead of the rear wheels.

AUTOMATIC TIRE CHAINS

One (1) pair of "On Spot" automatic tire chains shall be provided at the rear. System shall be electric over air operated with switch on cab instrument panel. System to be operable at speeds up to 35 mph.

HUB COVERS (front)

Stainless steel hub covers shall be provided on the front axle. An oil level viewing window shall be provided.

HUB COVERS (rear)

A pair of stainless steel high hat hub covers shall be provided on rear axle hubs.

MUD FLAPS

Mud flaps shall be installed behind the front and rear wheels of the vehicle.

SPARE TIRE

A 315/80R22.50, spare tire to match the vehicle's front tires shall be provided, mounted on a polished aluminum disc wheel.

SPARE TIRE
A spare tire, 12R22.5, 16 ply, to match the vehicle's rear tires shall be provided mounted on a polished aluminum disc wheel.

TIRE BALANCE
All tires shall be dynamically balanced.

CAB
The cab shall be designed specifically for the Emergency Rescue service and manufactured by the chassis builder.

Construction of the cab shall consist of 5052 .125" aluminum, welded to extruded aluminum framing.

The cab shall be built by the vehicle manufacturer in a facility located on the manufacturer's premises. (no exceptions)

The cab shall tilt.

The cab shall be installed on the chassis frame in a three-point mounting pattern, one (1) cab mount front and one (1) each side.

The cab shall be 96.00" wide, with an interior width of 87.50".

The cab overall height, (cab roof to ground), shall be approximately 99.00".

The floor to ceiling height inside the cab shall be 57.50".

The overall height of the cab shall not exceed 134.00", in the raised position. The cab shall tilt a minimum of 38 degrees and the engine shall be easily accessible and capable of being removed, with the cab tilted.

The cab access steps shall be 22.00" wide x 8.00" minimum depth, located inside the door, protecting the step from weather elements.
Inside cab steps shall not exceed 16.50" in height.

A 20.00", slip resistant handrail shall be provided adjacent to all door openings, to assist in entrance, into the cab.

A rubber-covered handrail shall be provided, inside each front cab door, adjacent to the door posts.

The cab doors shall be approximately 35.00" wide x 69.00" high.

The cab doors shall be constructed of extruded aluminum with a nominal material thickness of .125". The exterior skins shall be constructed from .090" aluminum.

Cab entry doors shall contain electrically controlled window.

Flush mounted, chrome plated, paddle type door handles shall be provided on the exterior, of the cab doors.

Interior cab door handles shall have flush paddle handles.

The door hinge shall be a stainless steel, piano type with a .25" pin.

There shall be double, automotive type, rubber seals around the perimeter of the door framing and door edges, to ensure a weather tight fit.

Polished stainless steel scuffplates shall be installed on the inside of the cab doors, extending from the bottom of the door to 9.00" above the floor line.

The engine hood side walls shall be constructed of .50" aluminum. The engine hood top shall be constructed of .19" aluminum and shall be tapered to allow for more driver and passenger elbowroom.

The engine hood shall be insulated for protection from heat and sound. The noise insulation shall keep the DBA level within the limits stated in the current NFPA series 1900 pamphlet.

Full circular inner fender liners, in the wheel wells, shall be provided.

A curved, safety glass windshield shall provide over 2,754 square inches of clear viewing area.

The cab windshield shall have bright trim inserts, in the rubber molding, holding the glass in place.

All cab glass shall be tinted.
Economical, windshield, replacement glass shall be readily available from local auto glass suppliers.
Two (2), smoked Lexan sunvisors, 8.75" wide x 31.00" long, shall be provided. The sunvisors shall be located above the windshield, with one (1) mounted on each side of the cab.

Two (2), electric windshield wipers, with washer, that meet FMVSS and SAE requirements shall be provided.

The windshield washer, fluid reservoir shall be located under the cab floor, on passenger side of the cab. The filler neck shall be extended up into the cab compartment, to allow the fluid to be refilled easily.

A certification letter from Dana, stating they approve of the wiper system shall be furnished upon request. The wiper system was run through 3,000,000 cycles, and achieved certification parameters.

The cab and crew cab floor areas shall be covered with Polydamp™ acoustical floor mat consisting of a black pyramid rubber facing and closed cell foam decoupler.

The top surface of the material has a series of raised pyramid shapes evenly spaced, which offer a superior grip surface. Additionally, the material has a .25" thick closed cell foam (no water absorption) which offers a sound dampening material for reducing sound levels.

ELECTRIC WINDOWS (cab doors)
Both front cab doors shall be equipped with electric operated windows.

The control for each door shall be an automotive style located on the inside door panel within easy reach of the driver and officer.

The driver shall also have a control to operate the passenger's side window, a single control shall be located on the driver's lower instrument panel.

FAIRING
An aluminum fairing shall be installed on the cab roof that extends from behind the lightbar to the top of the body. This fairing shall be painted to match the top of the cab.

CAB DOOR LOCKS
All cab doors shall be furnished with lockable exterior handles. All the doors shall be keyed alike.

FENDER CROWNS
Stainless steel fender crowns shall be installed at cab wheel openings. The fender crowns shall have a radius outside corner that allows the fender crown to extend beyond the side wall of the front tires and also allow the crew cab doors to open fully.

DOOR JAM SCUFF PLATES
All cab door jambs shall be furnished with a stainless steel scuffplate, mounted on the striker side of the jam.

CONDUIT FOR RADIO INSTALLATION
A section of 1.50" flexible conduit for radio installation shall be provided. The conduit shall be installed from the cab instrument panel to the command desk within the Heavy Duty Rescue body.

MAP BOX
A map box with four (4) bins, open from top, shall be installed on the engine tunnel to the left of the officer's seat. The map box shall be divided into four (4) bins, each being 12.50" wide x 2.25" high x 12.00" deep. Each bin shall slant 30 degrees from horizontal. The map box shall be constructed of .125" aluminum and shall be painted to match the cab

interior.

CAB LIFT

A hydraulic cab lift system with manual override shall be provided consisting of an electric powered hydraulic pump, dual lift cylinders, and necessary hoses and valves.

An 8' remote control shall be provided for raising and lowering the cab. The remote control shall be stored in the cab. The receptacle for the remote control shall be located on the passenger side of extended bumper extension.

Cab shall be locked down by a two (2)-point automatic spring loaded hook mechanism that actuates after the cab has been lowered.

The hydraulic cylinders shall be equipped with a velocity fuse that protects the cab from accidentally descending when the control is located in the tilt position.

A redundant mechanical stay arm shall automatically be engaged once the cab has been fully raised. Before lowering the cab, this device must be disengaged using the stay arm control located near the cab raise/lower switch.

INTERLOCK, CAB LIFT TO PARKING BRAKE

The cab lift system shall be interlocked to the parking brake. The cab tilt mechanism shall be active only when the parking brake is set and the ignition switch is in the on position, if the parking brake is released the cab tilt mechanism shall be disabled.

MIRRORS

Velvac, model 2025, low mount chrome mirrors shall be mounted, one (1) on each of the cab door's side. The mirror shall include a replaceable 62.00 sq. Inch flat glass and a 30 sq. Inch convex glass. Overall mirror dimensions shall be 8.50" wide x 13.75" high. Mirror head shall have a highly polished chrome finish.

Both flat mirror heads shall be adjustable by an electric remote control switch inside the cab within easy reach of the driver. Convex mirror heads shall be adjusted manually.

The mirror heads shall also be heated with the control within easy reach of the driver.

Each mirror shall be provided with an LED directional light.

The Velvac **two (2) year** warranty on material and workmanship and **five (5) year** warranty on chrome finish shall be provided.

BUMPER

A one (1) piece, ten (10)-gauge 304-2B polished stainless steel bumper, a minimum 10.00" high shall be attached to the front of the chassis frame.

A 9.00" formed steel channel shall be mounted directly behind bumper for additional

strength.

GRAVEL PAN
A gravel pan, constructed of bright aluminum treadplate, shall be furnished between the bumper and cab face.

TOW HOOKS
Two (2) chromed steel tow hooks shall be installed under the bumper and attached to the front frame members. The tow hooks shall be designed and positioned to allow up to a 6,000 pound straight horizontal pull in line with the centerline of the vehicle. The tow hooks shall not be used for lifting of the vehicle.

CAB INTERIOR
The cab dash fascias shall be a wrap-around design to provide easy access of controls and shall be constructed out of high impact ABS plastic.

The officer side dash, engine tunnel and upper door liners shall be padded and covered with 46 ounce leather grain vinyl resistant to oil, grease and mildew.

Headliner material shall be vinyl. A sound barrier shall be part of its composition. Material shall be installed on aluminum sheet and securely fastened to interior cab ceiling.

The cab headliner shall provide easy access for servicing electrical wiring or for other maintenance needs without removing the entire unit.

CAB INTERIOR UPHOLSTERY
The cab interior upholstery shall be dark silver gray.

INTERIOR PAINT (Cab)
The cab interior metal surfaces shall be painted to match the cab exterior color.

CAB SEATING
A Seats Inc. #911 Magnum 100 "knee-action" air-ride style seat with high-back shall be provided in the cab for the driver.
The seat shall have 3.00" of height adjustment, in addition to the "knee-action" suspension.

The driver's seat shall be furnished with three (3)-point shoulder type seat belt. The seat belt shall be furnished with automatic retractor. Extension shall be provided with the seat belt so the male end can be easily grasped and the female end easily located while sitting in a normal position.
A Seats Inc. #911 "scissor-action" air ride high back style seat shall be provided in the cab for the officer.

The officer's seat shall be furnished with three (3)-point shoulder type seat belt. The seat belt shall be furnished with automatic retractor. Extension shall be provided with the seat belt so the male end can be easily grasped and the female end easily located while sitting in a normal position.

SEAT UPHOLSTERY
All seat upholstery shall be 46 oz. leather grain dark silver gray vinyl resistant to oil, grease and mildew. The backrest bolsters on SCBA type seats and top outside edges of bottom cushion shall be lined with Tuff-Tex material for long lasting durability.

SHOULDER HARNESS HEIGHT ADJUSTMENT
All seating positions furnished with three (3)-point shoulder type seat belts, will include a height adjustment. This adjustment will optimize the belts effectiveness and comfort for the seated personal.

CAB WARRANTY
The bidder shall furnish a **ten (10) year** cab warranty. The warranty shall cover defects in design or workmanship in the cab tubular support and mounting supports and other cab structural components identified in the specifications. A copy of the warranty shall be submitted with the bid. (no exceptions)

ENGINE COMPARTMENT LIGHT
An engine compartment light shall be installed under the engine hood, of which the switch is an integral part. Light shall have a .125" diameter deep hole in its lens to prevent moisture retention.

CAB INTERIOR LIGHTING
Auxiliary lights shall be provided in the cab and consisting of:

- One (1) Clear Dome Light: Centered, and controlled by automatic door switches.

- One (1) 4.00" Recessed Red Dome Light: Above officer's seat, controlled by switch on light.
- One (1) 4.00" Recessed Red Dome Light: Above driver's seat, controlled by switch on light.
- Two (2) Adjustable Map Lights: With switches mounted on the cab ceiling.

- A Courtesy Light at Each Door Opening: Controlled by automatic door switches.

MAP LIGHT, IN ADDITION TO STANDARD
one (1) additional adjustable map lights with integrated switch shall be mounted on the engine tunnel. This light shall be connected directly to the battery switched power.

CAB HEATER
There shall be a 40,000 BTU heater in the cab located below the right side cab dash.

The heater/defroster ventilation shall be built into the design of the cab dash instrument panel.

The heater ducts shall be vented in a manner to provide heat directed towards the officer

and the driver.

The defroster ducts shall be designed to provide maximum defrosting capabilities for the front cab windows.

Heater defroster controls shall be located on the cab dash within easy reach of the driver.

AIR CONDITIONING

A high performance air conditioning system shall be furnished inside the cab.

A 19.0 cubic inch compressor shall be installed on the engine.

A roof mounted condenser shall be installed on the cab roof. Condenser mounting below the cab or body is not acceptable.

One (1) evaporator unit shall be in the cab dash, just to the front of the officer.

The cab walls shall be insulated with 2.00" insulation where possible and the roof with 1.00" insulation to aid in cooling. The insulation shall be covered with a vinyl liner or a metal panel painted to match the interior.

CAB INSTRUMENTATION

Instrument panel controls and switches shall be identified as to function by imprinted labels adjacent to each item. Actuation of the headlight switch shall illuminate ("back lit") wording for after dark operation.

To avoid confusion, warning indicators shall be (where possible) the "dead front" type, meaning the warning light and word identification of same does not show up unless it is necessary.

Instrument panel gauges, vehicle lights and other electrical accessories shall use proper size wiring to accommodate expected current load. Wiring shall meet SAE J-1128 specifications for high temperature (250 degrees Fahrenheit min.) conditions and be color, number and function coded.

Cab instruments and controls shall be conveniently located within the forward cab section. Gauges and emergency vehicle switches shall be installed on removable panels for ease of service.

INFORMATION CENTER

An information center employing an electro-luminescent screen 5.87", with 1/4-VGA format to display super bright yellow text on black background. The screen shall operate in temperatures from -40 to 185 degrees F. The screen shall be encased in a die cast aluminum housing with eight (8) user interface switches.

Every screen shall include the following:

Time, (12 or 24 hour mode).
Date.
Ambient Temperature.

The Information center shall include the following screens with changeable default screen:
Dimmer, percent bright.
Fluid Levels:
Fuel Level; Percent of fuel remaining in the fuel tank.
Engine Coolant Level; OK or Check.
Engine Oil Level; OK or Check.
Power Steering Level; OK or Check.
Loads, load manager status:
Refer to the Load Manager/Sequencer option.
Pump Data shall include the following with bar graph:
Fuel Level, E = empty to F = full with percent remaining in tank.
Volts.
Revolutions Per Minute RPM.
Engine Oil Pressure.
Engine Temperature.
Doors, items not in the stowed positions:
Refer to the "Do Not Move Truck" option for more details.
Information List:
A detailed list of indicators and warnings, including definition of each:
Engine Hours.

Timer, stopwatch:
Start, stop, reset and lap buttons.
Set Time and Date.
System information:
Module number.
Module type.
Module version.
Module diagnostics information:
Input or output number.
Circuit number connected to that input or output.
Circuit name (item connected to the circuit).
Status of the input or output.
Power module outputs diagnostic information.
Alarm, Buzzer Silence:
Local alarm buzzer.
Silence alarms all displays.
Test alarm this display.

Buttons shall be provided on the Information Center as follows:
MENU:
Returns to the menu screen.

HELP:
To provide help for the active screen or active warning message.
ENTER:
To be used for selecting actions.
BACK:
Used to return user to previous action or screen.

GAUGES AND CONTROLS

The following gauges and controls shall be furnished:

Voltmeter gauge, that includes the following:
Low volts (11.8 VDC).
Amber caution indicator light and an intermittent alarm.
High volts (15 VDC).
Amber caution indicator light and an intermittent alarm.
Very low volts (11.3 V).
Red warning indicator light and a steady tone alarm.
Very high volts (16 VDC).
Red warning indicator light and a steady tone alarm.

Tachometer, that includes the following:
Bar graph tachometer in the Pump screen of the information center.

Fuel gauge, that includes the following:
Bar graph on the Pump Data screen.
Percent available on the Fluid Levels screen of the information center.
Low fuel (1/8 full) to activate an amber caution light and intermittent tone alarm.
Very low fuel (1/32 full) to activate a red warning light and steady tone alarm.

Speedometer/odometer

Engine Oil pressure Gauge, that includes the following:
Bar graph on the Drive screen of the information screen.
Low oil pressure to activate red warning light and a steady tone alarm.

Air Pressure Gauges, that include the following:
Two (2) gauges, one (1) for the front and the other for the rear brake pressure.
Low air pressure to activate a red warning light and a steady tone alarm.

Transmission Oil Temperature Gauge, that includes the following:
High transmission oil temperature activates a red warning light.
High transmission oil temperature activates a steady tone alarm.

Engine Coolant Temperature Gauge, that includes the following:
High engine temperature activates a red warning light.
High engine temperature activates a steady tone alarm.

Ignition/Stop Switch.

Momentary push switch, Engine Start Control Switch.

Heater and Defroster Controls.

Headlight Switch.

Turn signal arm to include the following controls:
- Self Canceling Turn Signal.
- Headlight Dimmer.

Hazard Switch incorporated into the steering column.

Emergency Warning Light Control Panel.

Parking Brake Control.

Horn Button Control: Center of steering wheel.

Center indicator light display includes the following if applicable:
- Left side:
  - Left Directional Activated (amber).
  - High Beam Activated (blue).
  - Check Engine (amber).
  - Right Directional Activated (amber).
  - ABS Activated (amber).
  - Battery Switch On (green).
  - Check Transmission (amber).
- Right Side:
  - Right Directional Activated (amber).
  - Parking Brake Engaged (red).
  - Stop Engine (red).
  - ATC Activated (amber).
  - Ignition Switch On (green).
  - Transmission Temp High (amber).

- High Air Restriction Warning Indicator Light: LCD message with red warning indicator and audible alarm.

- One two (2)-speed Windshield Wiper Control with Intermittent Feature. The control shall also have a "return to park" provision, which allows the wipers to return to the stored position when the wipers are not in use

- Windshield Washer Controls.

12 VOLT OUTLETS
There shall be two (2) 12 volt cigarette lighter type receptacles provided in the cab. The receptacles shall be battery direct and shall be located on the officers side of the cab dash.

DIGITAL CLOCK
A Dakota Digital, Model ODY-16-1-B-T, digital clock shall be provided in the officer's side overhead switch panel. The clock shall be a 12 hour device that has an AM/PM indicator that is lit when in the AM hour mode. The display shall be teal in color and shall automatically dim when the parking lights are activated. The clock shall be provided with a black bezel.

RADIO WITH CD PLAYER
A Panasonic AM/FM stereo radio with compact disc player with the minimum following specifications shall be included :

Audio
4-channel high power amp (45W x 4 speakers, max)
2V rear channel preamp-out
Loudness, muting

CD Player
Playback compatible with digital audio CD-R (when disc is finalized)
Hologram pickup
One-chip digital circuit
1-bit 4-DAC digital-to-analog conversion
Multi-stage noise shaping
Digital servo optical control
12-track direct access, track scan, search, repeat, and random play
Anti-shock floating mechanism
Auto loading mechanism
Frequency Response (+/- 1dB) - 20Hz-20kHz
S/N Ratio - 96dB
THD (1kHz) - 0.01%
Channel Separation (1kHz) - 75dB

Radio
Alphatuner V
18 FM channels and 6 AM channels preset with preset scan
Auto preset memory followed by auto scan
FM Optimizer (FMO), Adaptive FM Front End (AFE), and Impulse Noise Quieting (INQ)
AM Usable Sensitivity (S/N 20dB) - 28dB
FM Usable Sensitivity (75 ohms, S/N 30dB) - 11dBf
50 dB Quieting Sensitivity (75 ohms) - 15.2 dBf
Alternate Channel Selectivity - 75dB

Stereo Separation (1kHz) - 42dB
S/N Ratio (FM mono) - 70 dB

Display and other features
Removable faceplate
Built-in quartz clock

The compact disc stereo radio shall be mounted within reach of the driver and officer on a heavy duty swivel bracket.

The quantity and location of the speakers shall be one (1) pair of 5.25" speakers located in the cab.

The type and location of the antenna shall be a roof-mounted rubber antenna located on the cab roof.

SWIVEL MOUNT

There shall be one (1) Johnny Ray, Model 203 swivel mount bracket/s provided for the Rhode Island EMA'S radio equipment. The swivel mount bracket/s shall be located on the center of the headliner between the driver and officer..

SWITCH PANELS

The built-in emergency light switch panel shall have a master switch plus individual switches for selective control. The switch panel shall be located in the "overhead" position above the windshield on the driver's side to allow for easy access. Switches shall be membrane type with an indicator light, of which is an integral part of the switch.

ELECTRICAL POWER CONTROL SYSTEM

Electrical compartments shall be provided in the cab and on the chassis to house the vehicles electrical power, circuit protection and control components. Serviceable components shall be accessible.

Power, circuit protection and control components shall be protected against the following:
Corrosion
Excessive heat
Excessive vibration
Water spray
EMI and RFI.

Circuit protection devices which conform to SAE standard, shall be utilized to protect each circuit. All circuit protection devices shall be rated per NFPA requirements, to prevent wire and component damage when subjected to extreme current overload. General protection circuit breakers shall be Type-I automatic reset (continuously resetting) or Type-II (manual resetting) and conform to SAE J553 or J258. When required, automotive type fuses conforming to SAE J554,1284,1888 or J2077 shall be utilized to protect electronic equipment.

Power control relays and solenoids shall have a direct current (dc) rating of 125 percent of the maximum current for which the circuit is protected.

A microprocessor controller shall be utilized to achieve advanced control of a fully computerized vehicle network system. The microprocessor based system shall be reliable, vibration resistant and moisture proof. The system shall comply with all appropriate SAE J1939 recommended practices. This is a compact system which takes advantage of smaller sized components and smaller wire diameters, thus reducing the overall weight of the vehicle.

In addition to the information center, the logic controller shall activate status indicators and audible alarms designed to provide warning of problems before they become critical.

The microprocessor controller shall include the following attributes:

- On-board self diagnostic messages and status indicators.
- Automatic self test on startup and during vehicle operation.
- Eliminate control logic relays wherever possible.
- Provide logic control for NFPA 1901 mandated safety interlocks and indicators.
- Utilize control system to eliminate redundant wiring and components.
- Improve control system reliability by reducing relay and connector contacts.
- Advanced electrical system load management and sequencing system.
- Customized control software programmed to reflect the vehicles configuration.
- Reprogrammable to accommodate changes to the vehicles operating parameters.
- Complete operating and troubleshooting manuals.

CIRCUIT PROTECTION AND CONTROL DIAGRAM

Copies of all "Job Specific", Input/Output (I/O) Sheets shall be provided with each chassis.

ON-BOARD ELECTRICAL SYSTEM DIAGNOSTICS

Advanced on-board diagnostic messages shall be provided to support rapid trouble shooting of the electrical power and signal system. The diagnostic messages shall be displayed on the information center, located at the driver's position.

The on-board information center shall include the following diagnostic information:

- Multiple diagnostics on display with text description.
- Simplified warning indicators (from operators perspective).
  - Amber "Caution" light with intermittent alarm.
  - Red "Warning" light with steady tone alarm.

ADVANCED DIAGNOSTICS

An advanced, Windows based, diagnostic software program shall be provided. The software shall provide advanced trouble shooting tools to service technicians equipped with an IBM compatible computer.

The service and maintenance software shall include the following features:

Easy to understand and use.
Ability to view system input/output (I/O) information.
A complete trouble shooting guide shall be provided with the vehicle.

INDICATOR LIGHT AND ALARM PROVE-OUT

A system shall be provided which automatically tests basic indicator lights and alarms located on the cab instrument panel.

VOLTAGE MONITOR SYSTEM

A voltage monitor system shall be provided to indicate the status of the battery system connected to the vehicles electrical load. The system shall provide visual and audible warning when the system voltage is below or above optimum levels.

The alarm shall activate if the system falls below 11.8 VDC for more than two (2) minutes.

POWER AND GROUND STUDS

Four (4) power studs shall be provided in the electrical component compartment for two way radio equipment.

The studs shall consist of the following:

Stud #1 shall be 12-volt 40-amp, controlled by battery switch.
Stud #2 shall be 12-volt 100-amp, ground.
Stud #3 shall be 12-volt 60-amp, controlled by ignition switch.
Stud #4 shall be 12-volt 60-amp, battery direct.

PROGRAMMING ENHANCEMENTS

The microprocessor controller shall control all Side Scene, Rear Scene and Perimeter lights. In addition to the control feature for these different light options, these lights shall be deactivated when the parking brake is released.

EMI/RFI PROTECTION

The electrical system shall reduce undesired electromagnetic and radio frequency emissions. An advanced electrical system shall be used to insure radiated and conducted EMI (electromagnetic interference) or RFI (radio frequency interference) emissions are suppressed at their source.

The vehicle shall have the ability to operate in the electromagnetic environment typically found in Emergency ground operations. The contractor shall be able to demonstrate the EMI and RFI testing which has been done on similar vehicles and certify that the vehicle proposed meets SAE J1113/14 requirements.

EMI/RFI susceptibility shall be controlled by applying appropriate circuit designs and shielding. The electrical system shall be designed for full compatibility with low level control signals and high powered two (2)-way radio communication systems. Harness and cable routing shall be given careful attention to minimize the potential for conducting and radiated EMI-RFI susceptibility.

INTERCOM SYSTEM
A two (2) position Sigtronics, model US-45S, single radio intercom system shall be provided.

The positions shall be as follows:
Driver - with radio interface.
Officer - with radio interface.

System includes:

- One (1) US-45S Intercom.
  Two (2) headset jacks
  Two (2) push-to-talk buttons
  All mounting hardware

- One (1) SE-8S Headset, (Driver).

- One (1) SE-8 Headsets, (Officer).

- All necessary cabling.

RADIO INTERFACE CABLE
The body builder shall supply and install the required radio interface cable before delivery of the vehicle. The radio equipment to be used by the customer shall be radio to be determined by the Rhode Island EMA at the upon receipt of the approval drawings and pre construction meeting.

HITCH RECEIVER
A hitch receiver shall be provided at the front of the vehicle, center position under the bumper extension. The hitch shall be a receiver for a 2.00" trailer ball insert and a portable winch with a maximum weight rating of 9,000 pounds.

RADIO ANTENNA MOUNT
Five (5) antenna mounting bases, Model MATM with 17 feet of coax cable and weatherproof cap shall be provided for a two way radio.

The mount shall be located on the cab roof spaced evenly to the rear of the light bar.

The cable shall be routed to the officer side seat box with enough cable for customer to route to the instrument panel if needed.

BATTERY SYSTEM
Six (6) Delphi 12 volt, 700 CCA, 180 reserve capacity, high cycle, maintenance-free group 31 batteries with a system rating of 4200 CCA at 0 degrees Fahrenheit and 1080 minutes of reserve capacity. The batteries shall be provided with threaded posts.

BATTERY SYSTEM
A single starting system shall be provided.

An ignition switch and starter button shall be located on the instrument panel.

MASTER BATTERY SWITCH
A master battery switch, to activate the battery system, shall be provided inside the cab within easy reach of the driver.

An indicator light shall be provided on the instrument panel to notify the driver of the status of the battery system.

BATTERY COMPARTMENT
A well ventilated battery compartment, with a floor mounted slide-out tray, shall be provided on driver side, located to the front lower portion of the body. Compartment shall be 55.00 wide x 14.00 high x 26.00" deep. The door shall be a vertical lift up, double pan construction with a "D" ring latch on exterior of the forward body.

Heavy-duty battery cables shall be used to provide maximum power to the electrical system. Cables shall be color coded.

Battery terminal connections shall be coated with anti-corrosion compound. Battery solenoid terminal connections shall be encapsulated with semi-permanent rubberized compound.

BATTERY ON INDICATOR
The center cab marker light shall be connected to the master battery switch to indicate when the master battery switch is in the "on" position.

DRI-DECK UNDER BATTERY
Dri -Deck matting shall be provided under, and behind the batteries.

BATTERY TRAYS
Plastic battery trays with drain tubes shall be provided, for the batteries to sit in.

ALTERNATOR
A **C.E. Niehoff**, model C712-2, alternator shall be provided. It shall have a rated output current of **400 amp** as measured by SAE method J56. It shall have a high volume air cooling fan and fan guard. Also it shall have a custom three (3)-set point voltage regulator, manufactured by C. E. Niehoff. The alternator shall be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.

ANTENNA
A Motorola antenna, shall be installed on the roof of the body. The coax antenna cable shall be routed to an interior cabinet as designated by the Rhode Island EMA at the pre

construction conference.

ELECTRONIC LOAD MANAGER

An electronic load management (ELM) system shall be provided that monitors the vehicles 12-volt electrical system, automatically reduces the electrical load in the event of a low voltage condition, and automatically restores the shed electrical loads when the low voltage condition expires. This ensures the integrity of the electrical system. The ELM shall monitor the vehicle's voltage while at the scene (parking brake applied).

The system shall include the following features:

System voltage monitoring.
Load Manage Hi-Idle shall not start for 30 seconds after engine start up.
A shed load shall reactivate after five (5) minutes to prevent cycling on and off.
Automatic High Idle Activation, will not be controlled by the load manager..
If enabled, Load Man Hi-Idle On shall display on the information center.
Sixteen available electronic load shedding levels.
Priority levels can be set for individual outputs.
Individual switch "on" indicator to flash when the particular load has been shed.
The information center shows system voltage.

The information center includes a "Load Manager" screen indicating the following:

Load managed items list, with priority levels and item condition.
Individual load managed item condition:
ON = not shed
SHED = shed

SEQUENCER

A warning light sequencer shall be provided that automatically turns the emergency lights on and off in a preset sequence.

The sequencer shall be wired in conjunction with the emergency master light switch. When the switch is activated the lights shall be turned on in sequence one by one at 1/2 second intervals thereby protecting the alternator from power surges. Sequenced light switch LED's shall flash while waiting for activation.

When turned off, the same process shall deactivate the warning lights in sequence to allow a gradual decrease in alternator output, rather than dumping the load.

AMP DRAW REPORT

The bidder shall provide, at the time of bid and delivery, an itemized print out of the expected amp draw of the entire vehicle's electrical system.

The manufacturer of the vehicle shall provide the following:

1) Documentation of the electrical system performance tests.

2) A written load analysis, which shall include the following:
   A) The nameplate rating of the alternator.

B) The alternator rating under the conditions specified per:
NFPA 1901,1999 Edition, section 11-3.2.

C) The minimum continuous load of each component that is specified per:
NFPA 1901, 1999 Edition, section 11-3.2.

D) Additional loads that, when added to the minimum continuous load, determine the total connected load.

E) Each individual intermittent load.

All of the above listed items shall be provided by the bidder per NFPA 1901, 1999 Edition, section 11-15.

EXTERIOR LIGHTING
Exterior lighting shall meet or exceed Federal Department of Transportation, Federal Motor Vehicle Safety Standards and National Fire Protection Association requirements.

Front headlights shall be halogen type, rectangular shaped, quad style mounted in a chrome and polished aluminum housing.

Seven (7) LED clearance and marker lights shall be installed across the leading edge of the cab.

DIRECTIONAL (Front)
Front turn signals shall be Whelen, Model 60A00TAR LED signal lights, with populated arrow shape, housed in chrome bezels. The turn signals shall be housed in the same common bezel as the front warning light and be located above the headlights.
In addition to the front facing directional, a Weldon, Model: 9186-8560-20, amber, marker/turn indicator shall be provided on each side of the cab.

LIGHTS, FRONT ZONE LOWER
A pair of Whelen, 600 series, LED series lights shall be provided with red lenses. The warning lights shall be housed in the same common bezel as the directional lights and be located above the headlights.

A switch shall be provided on the cab instrument panel for activating the warning lights.

DAYTIME RUNNING LIGHTS (HEADLIGHTS)
The headlights shall include a feature for daytime running lights which shall be automatically activated when the truck is running and parking brake is released. The daytime running light feature shall be deactivated when the primary headlight switch is turned on or when other headlight options are activated.

BACK-UP ALARM
An ECCO, Model SA917-PM2, solid state electronic audible back-up alarm that actuates

when the truck is shifted into reverse shall be provided. The device shall sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum five (5) dba above surrounding environmental noise levels.

BACKUP AND SIDE WARNING SYSTEM

An Intec Car Vision, backup and side camera system shall be provided.

One (1) CVM600VO monitor shall be located within reach of the driver.

One (1) CVM600 monitor shall be located the second monitor will be located in the command area.

One (1) CVS300NKIT switcher shall be located with the cab monitor.

One (1) CVC320XL camera over the driver side door.

One (1) CVC320XL camera over the officer side door.

One (1) CVC320XL camera at the rear of the truck.

Three (3) cables.

This system shall be activated when the ignition switch is engaged. The switch on each monitor will control weather either monitor is on or off. The switcher shall control what camera is activated for the system.

MANUAL, VEHICLE PARTS

Two (2) custom parts manuals for the complete vehicle shall be provided in hard copy with the completed unit.

The manual shall contain the following:

- Job number
- Part numbers with full descriptions
- Table of contents
- Parts section sorted in functional groups reflecting a major system, component, or assembly
- Parts section sorted in Alphabetical order
- Instructions on how to locate a parts

The manual shall be specifically written for the chassis and body model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.

SERVICE PARTS INTERNET SITE

The service parts information included in this manual is also available on the factory website. The website offers additional functions and features not contained in this manual, such as digital photographs and line drawings of select items. The website also features electronic search tools to assist in locating parts quickly.

MANUALS, CHASSIS SERVICE

Two (2) chassis service manuals containing parts and service information on major components shall be provided with the completed unit.

The manuals shall contain the following sections:

- Job number
- Table of contents
- Troubleshooting
- Front Axle/Suspension
- Brakes
- Engine
- Tires
- Wheels
- Cab
- Electrical, DC
- Air Systems
- Plumbing
- Appendix

The manual shall be specifically written for the chassis model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.

MANUALS, CHASSIS OPERATION

Two (2) chassis operation manuals shall be provided.

ELECTRICAL WIRING DIAGRAMS

Two (2) electrical wiring diagrams, prepared for the model of chassis and body, shall be provided.

HEAVY DUTY RESCUE/COMMAND BODY CONSTRUCTION

The rescue body shall be of all aluminum construction. The body shall use .125" (3 mm) and .188" (5 mm) 5052 aluminum with a tensile strength of 38,000 psi and a yield strength of 31,000 psi for the front, rear and side panels. The compartment dividers and compartment backs shall also use aluminum. The structural support framing and the gussets used shall be of 2.00" (51 mm) square .125" (3 mm) wall 6061 aluminum alloy tubing. All exterior body corners shall be 3.00" (76 mm) radius aluminum, corrosion resistant alloy 6061 extrusions. Spacing of the 2.00" (51 mm) vertical supports shall not exceed 14.00" (356 mm) on center. The roof and corner extrusions shall be reinforced with interconnecting gusset supports at all stress points. The body shall be properly welded into a unitized construction. Proper reinforcing and supports shall be utilized throughout all construction to ensure strength and rigidity.

MODULE FABRICATION AND DESIGN

The substructure for the body shall not be integral with the body but be a separate assembly. The body shall be built as a separate module prior to being mounted onto the substructure.

BODY AND COMPARTMENT SUPPORT

The body shall be supported by 2.00" (51 mm) x 2.00" (51 mm) x .25" (6 mm) wall aluminum tubing. The cross sill tubes shall be spaced approximately 15.00" (381 mm) on center and interconnected to the body from the front to rear.

A 1.00" (25 mm) x 3.00" (76 mm) aluminum bar shall be used as a stringer and shall be welded to the cross sills. The stringer shall be used to mount the body to the chassis frame rails. A 3.00" (76 mm) x .75" (19 mm) rubber liner shall be placed on top of the chassis frame rails. The liner is used to prevent metal to metal contact where the body stringer rests on the chassis frame rails.

The body shall be secured to the chassis frame by a minimum of six tie-down assemblies. Each tie-down assembly shall consist of two 3.00" (76 mm) x 6.00" (152 mm) x .50" (13 mm) steel plates and two .50" (13 mm) steel rods, 14.00" (356 mm) long. The tie downs shall be easily accessible so that the body may be removed.

The bottom of each lower compartment floor shall be supported by an under slung steel angle grid. The under slung support shall be constructed of .50" (13 mm) x 2.50" (64 mm) x 2.50" (64 mm) steel angle vertical supports. Horizontal members shall be .38" (10 mm) x 2.00" (51 mm) x 3.00" (76 mm) and .38" (10 mm) x 2.50" (64 mm) x 3.50" (89 mm) steel angle. The compartment floors shall be bolted to the under slung substructure. The support shall transfer major stress to the chassis frame and not through the body.

The under slung structure shall be bolted to the chassis frame rails with Grade 8 bolts. The complete substructure shall be washed, primed and finish painted before being bolted to the chassis frame.

A rubber coating shall be applied over the painted under slung support structure for an

additional corrosion barrier.

ROOF CONSTRUCTION

The roof shall be integral with the body construction. The roof shall be constructed of .125" (3 mm) bright aluminum treadplate and supported by 2.00" (51 mm) square .125" (3 mm) wall tubing welded in place approximately 12.00" (305 mm) on center. The roof shall be further reinforced with 2.00" (51 mm) square gussets welded approximately every 48.00" (1,219 mm). The roof perimeters shall be constructed of a 3.00" (76 mm) radius extrusion with an integral drip molding. The roof extrusion shall also have an inset allowing the roof panel to be recessed into the extrusion giving further support and sealing effect at the outside edge.

The roof panel shall be welded to the roof extrusions and supports. All roof seams shall be continuously welded using a gas metal arc welding (GMAW) spray transfer mode process that uses ER5356 welding wire.

BODY WARRANTY

A copy of the vehicle manufacturer's warranty shall be included with the bid. The warranty shall state that the body shall be free of structural failures caused by defective design or workmanship for a warranty period of **fifteen (15) years** from the date the new vehicle is first delivered **or 100,000 miles,** whichever occurs first, and that defective parts under the warranty shall be repaired or replaced without charge to the original purchaser.

BODY LENGTH

The length of the body shall be 365.00" (9271 mm).

BODY HEIGHT

The interior walkway height shall be 88.00" (2235 mm) high. The height of the body shall be 113.25" (2877 mm) high without any roof mounted options. The overall height of this vehicle shall not exceed 12’ 4”.

ROOF CONFIGURATION

The roof shall be provided with four (4) framed off holes for the installation of air conditioners.

DOORS, SIDE COMPARTMENT

All hinged compartment doors shall be lap style with double panel construction and fabricated of .09" (2 mm)-5052H34 aluminum. Doors shall be a minimum of 1.50" (38 mm) thick with a full interior panel. A "C" section reinforcement shall be installed between the outer and interior panels.

Doors shall be provided with a closed cell rubber gasket around the surface that laps onto the body. A second heavy-duty automotive rubber molding with a hollow core shall be installed on the door framing that seals onto the interior panel.
All compartment doors shall have a polished stainless steel continuous hinge, with a pin diameter of .25" (6 mm), that is bolted or screwed on with stainless steel

fasteners. A strip of isolation tape shall be furnished between the hinge and the door jamb.

All door lock mechanisms shall be fully enclosed within the door panels.

Doors shall be latched with recessed, polished stainless steel "D" ring handles and Eberhard 106 locks.

A rubber gasket shall be provided between the "D" ring handle and the door.

EXTERIOR COMPARTMENTS

The exterior compartment layout, dimensions and requirements shall be minimum specifications. The compartments shall be constructed of .125" (3 mm)-corrosion resistant aluminum alloy, including all interior panels, floor and sides. The assemblies shall be held inside fixtures while being welded.

Compartment flooring shall be of the sweep out design with the floor higher than the compartment door frame. Compartment door openings shall be framed by flanges, the edges in 1.75" (44 mm) and bending out again 0.75" (19 mm), to form an angle. The doors shall fit into the openings and come in contact with a rubber door seal.

All compartments shall be supported on top, rear and bottom. The rear wall of each exterior compartment shall be welded to the cross sills.

Drip protection shall be provided over all door openings with an integral roof extrusion along with a bright finished aluminum extrusion over each door opening.

WHEEL WELLS

The rear fenders shall be an integral part of the body sides and compartments. The inside of the fender shall be fitted with a full circular inner fender liner.

All screws and bolts, which protrude into a compartment, shall have acorn nuts at the ends.

LEFT FORWARD COMPARTMENTS

First Compartment

A single lift-up door, outside compartment space, that is located behind the cab shall be the first compartment. The compartment dimensions shall be 64.34" (1634 mm) wide x 15.25" (387 mm) high x 26.00" (660 mm) deep. The compartment door frame opening shall be 62.50" (1588 mm) wide x 16.50" (419 mm) high. The compartment clear door opening shall be 61.00" (1549 mm) wide x 14.50" (368 mm) high.

Second Compartment

A single lift-up door, outside compartment space, that is located behind the first compartment shall be the second compartment. The compartment dimensions shall be 64.34" (1634 mm) wide x 15.25" (387 mm) high x 26.00" (660 mm) deep. The

compartment door frame opening shall be 62.50" (1588 mm) wide x 16.50" (419 mm) high. The compartment clear door opening shall be 61.00" (1549 mm) wide x 14.50" (368 mm) high.

Third Compartment
A single lift-up door, outside compartment space, that is located behind the second compartment and ahead of the rear wheels shall be the third compartment. The compartment dimensions shall be 64.34" (1634 mm) wide x 15.25" (387 mm) high x 26.00" (660 mm) deep. The compartment door frame opening shall be 62.50" (1588 mm) wide x 16.50" (419 mm) high. The compartment clear door opening shall be 61.00" (1549 mm) wide x 14.50" (368 mm) high.

Compartment Loading
The storage compartments shall be capable of holding 800 pounds (363 kg). Strain gauge test certification of the compartment loading capacities shall be provided upon request.

LEFT REAR SIDE COMPARTMENT
Located behind the rear wheels shall be the left rear side compartment. The compartment dimensions shall be 84.84" (2155 mm) wide x 35.84" (910 mm) high x 26.00" (660mm) deep. The compartment door frame opening shall be 83.00" (2108 mm) wide x 34.00" (864 mm) high. The compartment clear door opening shall be 81.50" (2070 mm) wide x 32.25" (819 mm) high.

Compartment Loading
The compartment shall be capable of holding 800 pounds (363 kg).

RIGHT FORWARD COMPARTMENTS
First Compartment
A single lift-up door, outside compartment space, that is located behind the cab shall be the first compartment. The compartment dimensions shall be 77.84" (1977 mm) wide x 15.25" (387 mm) high x 26.00" (660 mm) deep. The compartment door frame opening shall be 76.00" (1930 mm) wide x 16.50" (419 mm) high. The compartment clear door opening shall be 74.50" (1892 mm) wide x 14.50" (368 mm) high.

Second Compartment
A single lift-up door, outside compartment space, that is located behind the first compartment shall be the second compartment. The compartment dimensions shall be 77.84" (1977 mm) wide x 15.25" (387 mm) high x 26.00" (660 mm) deep. The compartment door frame opening shall be 76.00" (1930 mm) wide x 16.50" (419 mm) high. The compartment clear door opening shall be 74.50" (1892 mm) wide x 14.50" (368 mm) high.

Side Entry Doors
There shall be two (2) side entry doors with access to the interior ahead and behind

the rear wheels. The side entry door shall be constructed of .090"-5052 aluminum with a full box pan design for strength and appearance. The door shall be furnished with an Eberhard 206 lock actuated by a chrome plated handle on the inside and a keyed lockable "L" handle on the outside. A 30.00" long stainless steel, 1.25" diameter, handrail shall be horizontally mounted on the inside access door, to aid in closing. The door hinge shall be full length polished stainless steel with a .25" stainless steel pin.

The door size shall be 30.00" wide x 80.00" high. An automatic electric exterior step activated by opening the door shall be provided.

Two (2) steps shall be provided inside the doorway. The steps shall be illuminated automatically when the entry door is opened.

Monitor Viewing Window
Provided on the side of the vehicle shall be a window installed at eye level to allow exterior viewing of a monitor installed on the interior of the vehicle.

Compartment Loading
The storage compartments shall be capable of holding 800 pounds (363 kg). Strain gauge test certification of the compartment loading capacities shall be provided upon request.

RIGHT REAR SIDE COMPARTMENT
Located behind the rear wheels shall be the right rear side compartment. The compartment dimensions shall be 84.84" (2155 mm) wide x 15.50" (406 mm) high x 26.00" (660mm) deep. The compartment door frame opening shall be 83.00" (2108 mm) wide x 15.50" (406 mm) high. The compartment clear door opening shall be 81.50" (2070 mm) wide x 14.00" (355 mm) high.

Compartment Loading
The compartment shall be capable of holding 800 pounds (363 kg).

BODY REINFORCEMENT
The rear of the body shall be reinforced with additional aluminum structure to provide a secure mounting surface for the telescoping mast.

INTERIOR BODY SPECIFICATIONS
Rhode Island EMA

1.00		**CHASSIS/BODY DIMENSIONS:**		
1.01		Approximate interior body dimensions are 84" high interior x 92" wide x 30' long. Refer to the vehicle specifications for detailed information.		
2.00		**CHASSIS:**		
2.01	1	DOT triangle reflector kit with three (3) triangles.		
3.00		**BODY:**		
4.00		**DRIVER/PASSENGER CAB AREA:**		
4.01	1	*Pioneer* TS-A6959 (or current model) 6" x 9" three-way 160-watt speakers connected to cab AM/FM/CD radio.		
4.02	1	L-pad volume control for *Pioneer* speakers.		
5.00		**WALLS, CEILING AND FLOOR:**		
5.01		Insulate walls and ceiling with a minimum of 2-1/2" of fiberglass.		
5.02		Install 1.25" wood furring strips on interior body side posts and 1/2" wood furring strips on interior roof supports. Install two (2) 10" high x 1.25" deep aluminum hat channels over each wall beam, upper to be 4" from the top of the wall beam and lower approximately 62" from the top of the wall beam. (Required to provide space for the installation of conduit and electrical boxes.)		
5.03		Cover interior body side posts with 3/4" plywood sub wall, #APA-NRB-108FHA-UM-66.		
5.04		Cover sub wall with *Kemlite* 0.075" fiberglass reinforced plastic (FRP) lining. Wall covering shall be a continuous piece front to back, no seams acceptable.		
5.05		Cover interior roof supports with 1/2" plywood, #APA-NRB-108FHA-UM-66.		
5.06		Cover sub ceiling with *Veelok* 17-oz. ribbed loop pile fabric (color ~ Light Grey).		
5.07		5/8" exterior grade tongue & groove plywood underlayment for floor, #APA-NRB-108FHA-UM-66.		
5.08		*Lonseal* Loncoin II Fleckstone non-skid commercial grade PVC flooring. The flooring shall be a continuous piece front to back with a longitudinal seam located under cabinetry and countertops on one side of truck (color ~ to be determined).		
5.09		2-1/2” vinyl cove molding as required (mop board).		
5.10	3	30" FRP covered pocket door with FRP covered plywood bulkheads to separate sections as shown. Pocket door shall be installed on heavy-duty aluminum track with two (2) four-wheel roller trucks. Pocket door shall have recessed handles and a key lock.		
5.11		All bulkheads shall be covered with *Kemlite* 0.050" FRP.		
5.12	6	Dry erase writing surface on one side of pocket door, full length.		
5.13	2	36" wide x 24" high deep-tint fixed egress window with mini-blinds located on rear wall.		
6.00		**GALLEY AND LAVATORY:**		

6.01		1. Hand pump water system with one (1) five gallon fresh water tank and one (1) five gallon gray water tank. Tanks shall be mounted in cabinet below sink. 2. Stainless steel galley sink with chrome plated sink hardware. 3. Cabinet doors to be oak plywood framed with solid oak edging.		
6.02	1	*Incinolet* model WB 240 stainless steel electric toilet system with the following: 1. 200 paper filters. 2. One (1) 20A/240Vac receptacle for power connection. 3. Ducting to the exterior of the vehicle. 4. Trash can and chrome plated toilet paper holder. 5. Return air vent. 6. Sign reading: NOTICE: Ceiling vent fan must be turned off when *Incinolet* is in operation.		
6.03		Seal lavatory door to meet *Draeger* pressurization requirements. Install engraved label on lavatory door reading: **Warning**: Lavatory is not protected by air filtration system. Keep lavatory door closed if hazardous outdoor air conditions are present.		
6.04	1	*Sani-Dex* Ant microbial disposal 135 count hand wipe canister (ref. 2BB-23549P) with wall bracket (ref. 2BB-75442). Wipes comply with OSHA guidelines.		
6.05	1	Minimum 0.9-cu.ft. 900-watt microwave oven.		
6.06	1	*Black & Decker* model ODC325 (or current model) under-cabinet coffee maker.		
6.07	1	*Norcold* model DE-0051 (or current model) 12Vdc/120Vac refrigerator with the following features: • 2.7 cu. ft. capacity. • Freezer shelf for ice cube tray. • Two door bins; lower bin holds 2-liter containers. • Integrated door latch.		
6.08	1	*Oasis* #B1SRK water cooler with cold and room temperature water outlets. Install hinged shelf above water bottle location to secure bottle to water cooler during transit.		
7.00		**SEATING:**		
7.01	4	*United Ergonomic* Uni-chairs model NSX-11 (or current model) with mid backs, armrests, five caster spider base, adjustable height and fabric color-matched with bench seating material (color ~ to be determined).		
7.02		Fabricate and install flip-down bench seating as shown on drawing. 1. Install *Zico* Quic-Seat® fold down spring loaded seat brackets as needed for bench seating. Seats automatically folds up when not in use. 2. Bench seat cushions shall be covered in heavy-duty cloth with vinyl sides (color ~ to be determined).		
7.03		Fabricate and install fixed bench seating with removable cushions as shown on drawing. 1. Bench seat cushions shall be covered in heavy-duty cloth with vinyl sides (color ~ to be determined).		

7.04 1. Foam for seat backs and bottoms shall have a minimum density rating of 28, a minimum compression rating of 65 and a support factor of 2.2.
2. All bench seating material must meet Federal Motor Vehicle Safety Standards part 571.302 Flammability of Interior Materials.
3. Seam stitching shall be done with 8-oz. bonded nylon thread.
4. Material corners shall be squared or angled to fit precise cut of foam.
5. Foam shall be bonded to plywood backer with industrial grade elastomer adhesive.
6. Bottom and sides of plywood backer shall be completely sanded.
7. Stapling of fabric/vinyl to backer with industrial grade upholstery staples.
8. No more than a 1/2" space is acceptable between staples around the entire perimeter.
9. All fabric shall be stain resistant.

8.00 **CABINETS:**

1. Fabricate and install interior storage cabinets, counters, shelves, tables and work stations as shown on drawing.
2. All cabinet fronts shall be constructed of 3/4" solid oak, stained and finished with three coats of catalyzed lacquer.
3. All exposed cabinet sides shall be 3/4" oak laminated plywood, stained and finished with three coats of catalyzed lacquer.
4. All cabinet interiors shall be constructed of 3/4" exterior grade poplar plywood stained and finished with three coats of catalyzed lacquer.
5. All cabinets shall be glued and screwed.
6. No exposed fasteners are acceptable on oak cabinet exteriors. All screws shall be countersunk and plugged with solid oak plugs.
7. Cabinet shelves shall be constructed of 5/8" exterior grade plywood covered on top and bottom with *Kemlite* 0.050" FRP and have 2" extruded aluminum front lip.
8. Cabinet shelving shall be adjustable on ½" increments using zinc plated track and hardware.
9. All doors shall have chrome plated hinges.
10. All horizontally hinged overhead cabinet doors shall be held open with gas charged lift/support cylinders.
11. All areas where countertops, bulkheads and walls meet shall be sealed with white silicone caulk.

8.01 1. All drawers shall use heavy-duty, ball bearing, double-action drawer slides. Drawer boxes shall be solid 3/4" hardwood.
2. Install *Pendaflex* hanging file racks in all deep file drawers.

8.02 File cabinet and base cabinet doors and drawer fronts to be oak plywood framed with solid oak edging.

8.03 *Wilsonart* Gibraltar 1/2" solid surface countertop over subsurface. Solid surface countertop shall have a 1-1/2" front lip with chamfered edge (color ~ to be determined).

8.04 All 24" high overhead cabinets to have white dry erase board or oak plywood doors, as designated on drawing. Doors to be framed with solid

		oak edging.		
8.05		All radio boxes shall have a stainless steel piano hinged lower panel to access radio heads and wiring.		
8.06		Closet doors to be oak plywood framed with solid oak edging.		
8.07		Closet shelves shall be infinitely adjustable using mini B-line track and hardware.		
8.08	7	White dry erase board framed in solid oak with pin board top strip.		
8.09	4	Pencil drawer under countertop at workstation.		
8.10	4	Computer cable pass-thru grommet in counter.		
8.11		Doors and drawers shall have flush mount stainless steel D-ring style pull-to-open latches with integrated key locks.		
8.12		12 Vdc power panels, master disconnect switch and auto resetting breakers shall be located in an Oak overhead console located over the body entry door.		
9.00		**HVAC SYSTEM:**		
9.01	1	*Fan-tastic Vent* model 4000 R (or current model) 3-speed reversible 12" power roof ventilation		
9.02	4	*Coleman* Polar Mach 9200 series low profile air conditioner, with 5,600 Btu/hr heat strip and condensate pump.		
9.03	4	12,000-16,000 Btu/hr direct discharge, 12Vdc powered, diesel-fired furnace with individual thermostat control. Exhaust shall be routed to the street side.		
9.04	3	Air filtration pressurization system. Provides positive pressure ventilation system, which removes harmful particles and gases from the ambient air and channels clean air into the vehicle. Located as shown on drawing.		
10.00		**120/240VAC ELECTRICAL SYSTEM:**		
10.1	2	*Onan* Commercial Quiet Diesel 12.- kW generator model 12.0HDCAD-2209A mounted in a custom fabricated all aluminum compartment. Generator has the following features: • 69 dB(A) @ full load measured at 10 feet. • Voltage regulation no-load to full-load: +/- 1% • Frequency regulation no-load to full-load: +/- 0.1% • Random frequency variation for constant load: +/- 0.5% • Random voltage variation for constant load: +/- 1%		
10.02	25	2" exhaust ventilation hose for generator, per foot.		
10.03		Install surge suppression for entire 120Vac system.		
10.04	2	60A-120/240Vac control panel with generator and shore power main breaker, twelve (12) UL listed magnetic/hydraulic branch circuit breakers with amber LED indicators, digital voltmeter, digital frequency meter, digital ammeter, generator stop/start switch, generator hour meter, shore power reverse polarity indicator and four position rotary transfer switch.		
10.05	1	*Kussmaul* Auto Eject 20, 20A-125Vac shore power inlet with 25-ft. 20A-125Vac shore power cord.		

10.06		One (1) 50 amp 125/250Vac shore line cord and electric cord reel. Includes 6' 50 amp 125/250Vac pigtail.
10.07	8	Specification grade 20A-125Vac duplex receptacle with stainless steel wall plate located as shown on drawing. These receptacles are not dedicated to any installed equipment.
10.08	2	Specification grade 20A-125Vac GFCI duplex receptacle with stainless steel wall plate as shown on drawing. These receptacles are not dedicated to any installed equipment.
10.09	4	Specification grade 20A-125Vac exterior GFI duplex receptacle with weatherproof PVC cover. These receptacles will be wired in pairs to 20A circuit breakers located in the 120Vac electrical load distribution center.
10.10	4	Four (4)*Havis Shields* lights shall be installed.
10.11		One (1) *Will-Burt* Nightscan light tower will be installed.
10.12		1. All 120/240Vac main wiring shall be stranded THHN wire and run in non-metallic *Carlon* Carflex liquid tight conduit. 2. All 120/240Vac branch circuit wiring shall be stranded THHN wire (AWG 12 minimum) and run in non-metallic *Carlon* Carflex liquid tight and *Carlon* Flex-Plus blue ENT conduit. 3. All electrical circuits and appliances shall conform to applicable national electrical codes.
11.00		**12VDC ELECTRICAL SYSTEM:**
11.01	1	12 VDC battery system: 1. Six (6) Trojan T125 deep-cycle 6Vdc batteries. Batteries shall be installed underbody in the weather resistant aluminum compartment. Four (4) batteries will be separated for auxiliary equipment (4.4 hours of capacity @ 75-amp discharge rate) and two (2) batteries will be for communications equipment (2.2 hours of capacity @ 75-amp discharge rate). Battery data assumes a usable voltage range of 13.6 to 10.5 volts. 2. Three (3) electronic converter/chargers, 80 amp minimum output each, installed underbody in the weather resistant aluminum compartment. Converter/charger features: • Charges three banks of batteries at the same time. • UL listed for safety. • Manual reset circuit breaker. • Reverse battery protection. • Electronic current limiting. • High voltage protection. 3. One (1) *Cole Hersee* master disconnect switch to control the auxiliary battery systems. 4. 12Vdc control panel with seven (7) UL listed magnetic/hydraulic circuit breakers with red LED indicators, 12Vdc digital voltmeter, and 12Vdc low voltage alarm. 5. 12Vdc auxiliary panels with UL listed magnetic/hydraulic circuit breakers as required. 6. 12Vdc auxiliary digital voltmeter to monitor the communications battery system.

11.02	17	*Thin-Lite model 616 18" white 12Vdc fluorescent light fixtures located as shown on drawing.*
11.03	8	*Thin-Lite model 616 18" blue 12Vdc fluorescent light fixtures located as shown on drawing.*
11.04	6	*Thin-Lite model 690 18" blue/white 12Vdc fluorescent lights located as shown on drawing.*
11.05	1	Dome light over main entry door to illuminate 12Vdc control panel. Light will automatically activate when door is opened.
11.06	2	*Arcon Universal*, #18104 (or current model), utility light with switch, mounted above exterior removable shelf.
11.07	8	15A-12Vdc power outlets mounted in stainless steel wall plate, located as shown on drawing.
11.08		**12VDC WIRING REQUIREMENTS:** 1. 2-gauge minimum copper stranded battery cable shall be used for 12Vdc main supply lines. All cable runs shall be full length, no splices. All cable terminals shall be staked and soldered. All cable shall be enclosed in convoluted polyethylene tubing and the ends of the cable shall be sealed with color-coded shrink-wrap identifying the function of the cable. 2. All added electrical circuits shall be protected from over-current by resettable circuit breakers appropriately rated for the load. Only circuit breakers shall be used in the installation of added electrical wiring (plug type fuses are unacceptable). 3. Circuit breaker functions shall be identified by engraved or printed labels. 4. All added wiring for load runs shall be AWG 8, 10, 12, 14 and 18 and must conform to MIL-W-16878F. 5. Wire terminals for added circuits must conform to MIL-T-7928. Terminals shall be insulated, insulation grip, TYPE II, CLASS 2 and shall be crimped with tooling recommended by the terminal manufacturer. 6. All wiring shall be numbered or lettered on 6" centers minimum. 7. All wiring shall be protected from chafing and abrasion with convoluted polyethylene tubing. 8. Where wire passes through sheet metal, bulkheads and structural supports, plastic grommets shall be used to protect both wiring and wire looms. 9. All wiring shall be supported on 12" centers. 10. All wire bundles shall be tied with trimmed nylon ties on 6" centers minimum. 11. The complete 12Vdc wiring system and electrical appliances shall be to modern automotive standards throughout the installation. 12. Extreme care shall be exercised to provide for easy serviceability of the system in future years. 13. Extreme care must be taken in the installation to avoid the engine manifold, engine exhaust, and muffler, which could expose the wiring to severe overheating during long periods of operation. Proper insulation and heat deflection panels must be installed in such areas.

14. A high-current 12Vdc system wiring schematic shall be provided.
15. These are the minimum acceptable 12Vdc wiring requirements.

12.00		**AUDIO/VIDEO:**
12.01	3	*Samsung* SyncMaster 151MP (or current model) 15" wall mount color LCD TV/monitor. Product features: • High resolution: 1024 x 768. • 15" display with 140° horizontal and 120° vertical viewing angle. • RCA connectors for CVBS and audio input, RF connector for antenna/cable input, 1 S-video mini-din input and 1 Dsub15P for VGA input. • 16.7 million colors. • Analog modular TV tuner included. • Built-in 3 watt, 2 channel speakers with surround sound. • HDTV Ready (NTSC only).
12.02	1	*Samsung* SyncMaster 211MP (or current model) 21.3” wall mount color LCD TV/monitor. Product features: • High resolution: 1600 x 1200. • 21.3" display with 170° horizontal and 170° vertical viewing angle. • 16.7 million colors. • Modular TV tuner. • HDTV Ready (NTSC only). • Wall mount bracket.
12.03	1	*Samsung* LTM405W (or current model) 40” wall mount color LCD TV/monitor located as shown on drawing. Product features: • High resolution: 1280 x 768. • 40" display with 170° horizontal and 170° vertical viewing angle. • 16.7 million colors. • Built-in NTSC tuner. • Dimensions: 39.75" w x 28" h x 2.25”d. • HDTV Monitor. • Wall mount bracket (option).
12.04	1	*Marshall Electronics* V-LCD20 (or current model) 20” active matrix color LCD panel with TV tuner viewable from the curbside exterior, under awning. Product features: • Ultra bright – 450cd. • 20.1" display (viewing area). • 8-bit color with 640 x 480 resolution. • 181 channel, cable-ready TV tuner. • Dimensions: 20" W x 17" H x 2.5”D.
12.05	1	Mount for exterior viewable 20" LCD monitor. Includes anti-glare tempered glass, flush mounted weatherproof speakers and speaker amplifier.*

12.06	1	*One (1)* weatherproof exterior door to access rack mounted audio/video equipment and *Panasonic* telephone.		
12.07	2	*Panasonic AG-VP300 (or current model) VHS Proline Hi-Fi VCR and Progressive-Scan DVD Player. Product features:* • *DVD/DVD-R/DVD RAM and CD-R/RW Playback* • *4 Head Hi-Fi VHS recorder and SQPB (SVGS quasi playback)* • *Progressive playback capability* • *Music with Picture button* • *Multiple DVD Viewing Options* • *Composite, S-Video and Component outputs* • *Optical Digital Audio output for Dolby Digitalâand DTS*		
12.08	1	*Panasonic* DMR-T3030 (or current model) DVD video recorder. Product features: • Record and play DVD-RAM and DVD-R discs • Play DVD-video, music CD, CD-R, and CD-RW discs • Four recording modes • Record and play at the same time		
12.09	2	*Mitsubishi* HS-9424U (or current model) time lapse VCR located as shown on drawing. Product features: • Record and playback in standard VHS 2H and 6H modes, also playback in 6H modes • 2 video helical heads for recording and standard playback, 4 heads for special playback • Auto head clean and head clog detect • Front panel clock settings • Video input signal loss indicator • Time date search • Record check		
12.10	6	*Middle Atlantic* rack mount kit for VCR, VCR/DVD, DSS receiver.		
12.11	1	*Winegard* Sensar RV-3090 amplified TV antenna with outlets at each TV/VCR location. Includes dash mounted warning light with interlock to prevent moving the vehicle with antenna raised.		
12.12	1	CATV inlet with outlets at each TV/VCR location.		
12.13	1	A/B switch to select antenna or CATV inputs.		
12.14	2	Exterior video input jack wired to TV locations.		
12.15	2	*Pelco* QD104C Digital Quad Video Processor rack mounted at customer specified location. Product features: • Real-time quad video • Quad Monitor Output that displays full-screen or quad image • Sequencing of full-screen and quad views ***Note:** Pelco* quad video processor #1 will be dedicated to three interior cameras and mast camera. *Pelco* quad video processor #2 will be dedicated to the exterior perimeter cameras.		
12.16	1	*Pelco* R300 rack mount kit for video switch.		

12.17	1	*Sony* UP-20 (or current model) A6 color video printer with the following features: • 400 dpi resolution. • 4 frame memory. • Analog video inputs and outputs. • RS-232C interface. • Monitor loop-through.		
12.18	3	*Everfocus* color camera and *Louroe* #ASK-4 (or current make/model) audio/video surveillance kit in the conference area looped through the video switch at each TV location and routed to the VCR to record.		
12.19	1	*MotoSat* DataStorm (or current model) two-way internet satellite system with optional dual LNB for *DirecTV* television reception. Product features: • Download speed of 400kbps and higher. • Upload speeds between 30 to 90kbps. • Automatic pointing to the DirecWay Satellite. • Auto stow if the vehicle is moved. • Auto stow if the vehicle rocks due to wind.		
12.20	2	*Hughes* HBHSa (or current make/model) DirecTV DSS receivers. UL and FCC approved.		
12.21	1	*Drake* RMM12 (or current model) rack cage for *Drake* video modulators.		
12.22	1	*Drake* PS121 (or current model) power supply for RMM12 rack.		
12.23	12	*Drake* VMM806AG (or current model) video modulator for RMM12 rack.		
12.24	1	*Drake* PC1201 (or current model) twelve-input passive combiner.		
12.25	1	*Drake* 1601PC (or current model) sixteen-input passive combiner.		
12.26		*LiveWave* digital video and camera control system. Includes the following equipment: • *FirstView* Encoder FV SER-8 (or current model) 8 channel rack mount (2U) server with *FirstView* 5.0 software. • Industrial broadcast camera module FV-CCS-I (or current model). • *FirstView* Enterprise Server FV-ENT-8 (or current model) 8 channel rack mount (4U) server with *FirstView* 5.0 server software. • *FirstView* DVR Module FV-DVR-8 (or current model) 8 channel software module for Enterprise Server. • *FirstView* Joystick FV-Joystick (or current model) USB – 3 axis industrial joystick for camera control. • *LiveWave FirstView Systems* extended warranty on software, includes one year phone support, 9am – 5pm Monday – Friday (EST) with free upgrades and software maintenance. A wiring to rack location for *LiveWave* digital video and camera control system. *LiveWave* will terminate, install and program the equipment at the bidder's production facilities.		
12.27		All RF cable for DSS antenna systems (when specified) shall be Belden #9116 series 6 broadband coaxial cable. All other video cabling shall be Belden #1505A RG-59/U precision video cable.		
13.00		**MAST MOUNTED VIDEO:**		

13.01	1	*Will-Burt* model TMD-7-42-368 42-ft. heavy-duty non-locking exterior telescoping pneumatic mast with the following: 1. 2-gal., 1/2-hp Thomas Ultra Air-Pac tank and compressor. 2. Airline filter, lubricator and regulator. 3. Control valve and dump valve. 4. Will-Burt magnetic mast extension warning kit with warning light at mast control location and at drivers location. 5. 60-ft of Nycoil to enclose cabling to top of mast. 6. Will-Burt 902526 external mount shelf bracket and 902545 external mount support bracket. 7. Includes driver warning system which alarms when starting vehicle with mast raised. Additional support structure in rear wall will be installed to support the mast.		
13.02	1	Custom fabricated *Nycoil* cylinder with powder coated finish to match body color.		
13.03	1	Fabricate and install aluminum mast cover painted to match body color.		
13.04	1	*Will-Burt* D-TEC mast safety system mounted on mast. System features: • High voltage sensor aides operator in detecting overhead power lines. • Anti-collision sensor automatically stops mast extension, assisting operator in detecting overhead obstructions. • Tilt sensor ensures that vehicle is level and D-TEC is pointing directly upward prior to mast extension. • 35 watt quartz halogen look-up spot light to illuminate area directly above mast.		
13.05	1	Camera system installed on mast: 1. *Pelco* PT57024P (or current model) medium-duty pan & tilt. 2. *Pelco* MPTAZ24DT (or current model) combination pan, tilt, zoom controller with rack mount kit. 3. *Pelco* EH4722-2 (or current model) 22" outdoor camera enclosure with heater and blower. 4. *Altronix* T24130 (or current model) 24Vac / 100VA transformer. 5. *Ikegami* ICD-870-24 (or current model) 1/3" CCD ultra-high performance color video camera requiring a minimum object illumination of 0.1-lux/F1.4. 6. *Pelco* 13ZD5.5X30 (or current model) 1/3" CS mount CCD lens with a 30X f1.8 lens range from 5.5 to 165-mm.		
14.00		**RADIOS:**		
14.01		Primary 12Vdc power leads for communications radios shall be minimum 2-gauge copper stranded wire with soldered crimp-on end connectors. (individual radio equipment wire gauges will be sized based on radio manufacturer requirements). Cables shall be enclosed in convoluted tubing and function identified with colored shrink-wrap. Power to radios shall be controlled by a continuous-duty switch actuated by the auxiliary battery disconnect switch.		

14.02	12	Prewire and make installation provisions for communications radio. Installation includes: 1. NMO-style base on the roof or antenna raceway, as applicable. 2. LMR195 antenna cable routed to radio transceiver location in *Carlon* Carflex ENT conduit. 3. 12Vdc power routed to radio transceiver location.		
14.03		Install hinged panels under countertops to conceal radio transceivers where applicable.		
14.04	1	Fabricate and install a 3" x 3" square aluminum tubing antenna raceway on the roof of the vehicle. Antenna raceway will penetrate the roof on each side of the truck at radio box locations. Includes the following: 1. Raceway shall have a 3" high x 3" long aluminum cover at each antenna base on the side of the tubing to access the antenna base and route cable to desired location. 2. Access covers shall have four (4) stainless steel machine screws attaching the cover to the tubing with a watertight seal. Install nut-serts in the tubing to enable the covers to be removed and replaced in the future. 3. Raceway shall permit running antenna cables between radio boxes on each side of the truck.		
14.05	4	*David Clark* headsets with belt-station push-to-talk switch and single muff headset.		
14.06	3	*David Clark* U3814 (or current model) multi radio interface module. Allows up to four radios to be connected to one headset.		
15.00		**TELEPHONE SYSTEM:**		
15.01	6	Landline inputs to telephone system.		
15.02	13	Telephone extension locations as shown on drawing.		
15.03	1	*Cast Products*, model FT41501, cast aluminum weatherproof landline input box with key lock.		
15.04	1	Shroud with weatherproof pass-through hatch installed in the door of the landline input box.		
15.05	1	*Cast Products*, model EB0007-1-A, cast aluminum weatherproof telephone box with key lock.		
15.06	1	*Panasonic* KX-TA624 (or current model) Electronic Modular Switching System. Base system has capacity for three (3) incoming lines and eight (8) extensions.		
15.07	1	*Panasonic* KX-TA62477 (or current model) Expansion Card, adds three (3) incoming lines and eight (8) extensions, increasing the system capacity to six (6) incoming lines and sixteen (16) extensions.		
15.08	1	*Panasonic* KX-TA62491(or current model) Direct Inward System Access (DISA)/fax detection card. If a fax call is received and a CNG tone is detected during the outgoing message, the call will automatically be routed to the designated fax extension.		
15.09	1	*Panasonic* KX-T7730-B black twelve-line speakerphone telephone with 16-digit alphanumeric LCD display.		
15.10	10	*Panasonic* KX-T7720-B black twelve-line speakerphone telephone.		
15.11	5	*Telular* Phonecell fixed wireless terminal. Model to be determined based upon cellular standard of local service provider.		

		upon cellular standard of local service provider.		
15.12	6	Manual switch to select wireless or landline service for one phone system input.		
15.13	1	*Polycom* Soundstation EX200 full duplex conference telephone for use on the rear conference area table. Conference telephone has 360 degree audio pick up to allow both parties to speak simultaneously.		
15.14	1	*GlobalStar* model 1900M (or current model) mobile satellite telephone interfaced with the telephone system. This phone utilizes the *GlobalStar* mobile satellite telephone service system.		
15.15		All telephone lines and cellular antenna cable shall be installed in *Carlon* Flex-Plus ENT conduit.		
16.00		**COMPUTER NETWORK AND EQUIPMENT:**		
16.01	10	RJ-45 100Base-T CAT5 computer network jacks located as shown on drawing. All CAT5e cable shall be installed in Carlon Flex-Plus ENT conduit.		
16.02	1	*Leviton* 5G584-U16 (or current model) 16-port Cat5e rack mount patch panel.		
16.03	1	*Allied Telesyn* AT-FS716-10 (or current model) 16-port dual speed 10/100TX unmanaged rack mount switch.		
16.04	10	Certified 18" CAT5e patch cords from the patch panel to the switch.		
16.05	1	Certified 36" CAT5e patch cord for printer.		
16.06	1	Cable Certification Report confirming that network wiring complies with CAT5e specifications.		
16.07	1	*HP* LaserJet 3330mfp (or current model) multifunction printer-fax-copier-scanner. Provide one (1) *HP* JetDirect 310x RJ-45 (Ethernet 10/100-TX) print server.		
16.08		Notebook computer allowance, 4 units at $4,500.00 per unit, $18,000.00 total. *Note:* Any unused money from computer allowance will be returned to customer.		
16.09		Install customer supplied notebook computer docking station in cab.		
17.00		**MISCELLANEOUS ELECTRONICS:**		
17.01	1	*Quartet*® Portable IdeaShare, model Q8000 (or current model), installed on dry-erase board located as shown on drawing. Notes and images from the board can be saved to a PC or Mac or shared live over the Internet or Intranet.		
17.02	1	*Optex* Vision alarm system. System includes magnetic contacts on all entry doors, exterior storage compartment doors, battery box doors, generator compartment doors and hood. *Dual Tec* motion sensors, siren and bell. *Note*: If vehicle is equipped with a *Telular* Phonecell the alarm system will be wired to the Phonecell to allow the customer to program a telephone number that will be dialed automatically if the alarm system is triggered. This Phonecell will be wired to constant hot 12Vdc power source.		

17.03	1	*Coastal Environmental Systems, Inc.* WeatherPak 400 VM S1416 vehicle mounted weather system. Sensor suite consists of wind speed and direction, automatic compass, relative humidity, air temperature and barometric pressure. Weather data is transmitted to the display box via cable. Display box features a serial output cable to PC. Kamlock "quick" mount and 1½" pipe thread for mounting to a stanchion or pipe. Carry case for WEATHERPAK® is included.		
17.04	1	*Coastal Environmental Systems, Inc.* WeatherPak 400 TRx S1414 portable weather system with tripod and UHF radio. Sensor suite consists of wind speed and direction, automatic compass, air temperature, relative humidity and barometric pressure. Proven UHF transmitter provides 5 - 7 miles line-of-sight "stand-off" capability. Radio receiver features a digital display and serial data output cable to PC. Constructed of rugged, non-sparking/ intrinsically safe aluminum the WeatherPak can be assembled in approximately one minute without tools. Carry case and canvas tripod bag included.		
17.05	1	*Garmin* StreetPilot 2610 (or current model) GPS receiver, includes Americas Autoroute basemap MapSource City Navigator North America CD with full coverage and full unlock, and 128 MB CompactFlash memory card. Product features: • CompactFlash data card (type I or II) slot for map storage. • Audio and visual navigation instructions and warnings. • 256 color LCD display with automatic dimming backlight and touch screen. • Alphanumeric remote control. • Turn-by-turn automatic route generation. • Indefinite data storage (no memory battery required).		
17.06	1	*Bogen* TPU-15 (or current model) paging amplifier with four (4) 30-watt roof mounted weatherproof speakers interfaced with P/A features of the telephone switching system.		
17.07	1	*Eventide* model VR615-8-1 (or current model) 8 analog channel, single 9.4GB DVD multi recorder drive with 19,800 Hr mirrored hard disks recorder for recording radios and/or telephones.		
17.08	3	*Franklin Instruments* #FD254-I00-0P4 (or current model) clocks with 2.5" LED display and 12 hour or 24 hour modes.		
17.09	1	*Middle Atlantic Products, Inc.*, MRK-4026, forty-space 19" wide x 26.5" depth (24" useable depth) open framed electronics equipment rack, located as shown on drawing. Rack will slide out from its fixed position to allow side access to rack equipment.		
17.10	1	*Middle Atlantic* MW-4FT top fan panel, with two (2) 50 cfm ventilation fans, QFAN.		
17.11	1	*Middle Atlantic PFD-40 Plexiglas front door with key lock.*		
17.12	2	*Middle Atlantic* AS3-22 slide out rack shelf, 5.25" (3 spaces) H x 22.25" D.		
17.13	1	*Middle Atlantic* PD-1020C-NS (or current model) 20 amp power strip with 5 duplex outlets.		

17.14	1	*RAE Systems* Rapid Deployment Kit. Kit includes: • ProRAE remote package in pelican case, including laptop and wireless modem. • 4 Area RAEs (LEL/O2/H2S/CO, 10.6eV PID) • REALink Repeater • 4 spare Li-Ion batteries • External 4-bank battery charger • Accessories		
17.15	1	Car kit for *Nextel* r750plus phone, part #FLN2912, includes cradle, external speaker, external brain-box and rooftop mounted antenna. Does not include phone.		
17.16	8	Install spare ENT conduit with pull string, terminated in junction boxes on each end. Locations as shown on drawing.		
18.00		**JPS ACU-1000 INTELLIGENT INTERCONNECT SYSTEM:**		
18.01	6	Custom radio cables (one per radio).		
18.02		*Raytheon JPS Communications* CX Kit interoperabilty package. Equipment list: (One) 1 – *Regal Research* 19" equipment rack (One) 1 – *McKay Communications* NERA – INMARSAT (with modem, power supply and antenna) (One) 1 – *Verizon Cellular* air card 555 (One) 1 – *Control Manufacturing* workstation unit assembly (One) 1 – *Control Manufacturing* server unit assembly (One) 1 – *Tech Data* MVP 200 VOIP modem with power supply (One) 1 – *IOGear* computer video switch (One) 1 – *HBR* Computer fast Ethernet 8-port switch (Two) 2 – *Cisco* WLAN bridge (One) 1 – *JPS* ACU 1000 with ten DSP 1 radio interface cards and two PSTN telephone interface cards (Two) 2 – *Motorola* MCS2000 Model I VHF radios (Two) 2 – *Motorola* MCS2000 Model I UHF radios (Two) 2 – *Motorola* MCS2000 Model I 800 MHz radios (Six) 6 – *Motorola* MCS2000 standard radios (One) 1 – *Comp-USA* USB hub (One) 1 – *Global Computer* UPS (modified for First Responder) (One) 1 – System software		
19.00		**AWNING:**		
19.01	1	Full size awning-to-ground screen enclosure for awning.		
19.02	1	Solid privacy panels for awning screen enclosure.		
20.00		**LEVELING SYSTEM:**		
20.01	1	Heavy-duty *Quadra MFG. Inc.* Big Foot™ model QE-2 four point fully automatic one-touch leveling system. System shall use 24" two-way straight acting jacks. System shall interface with air ride dump valve to release air from the air bags during leveling process. High density polypropylene, injection molded yellow colored *Super Dolly Pads* for use with leveling system jacks. Pads measure 15" x 17" x 1"		

thick with a grab strap on one side.

21.00		**MISCELLANEOUS OPTIONS:**
21.01	2	Removable 0.125" aluminum exterior shelf, approximate size 18" x 48". Install shelf brackets on the exterior of the vehicle.
21.02	2	Removable *Quartet* 36" x 24" RE-MARK-ABLE™ porcelain-on-steel magnetic dry erase board. Install dry erase board brackets on the exterior of the vehicle.
21.03	4	Heavy-duty zippered storage bag for exterior shelf or dry erase board.
21.04	2	*Kidde* Pro Line 3-A: 40-B: C 5 pound dry chemical fire extinguishers.
21.05	3	*First Alert* 9-volt combination Carbon Monoxide and Smoke alarms.
21.06	1	Complete manual set, including the following: 1. As-built specifications with interior and exterior drawings as used for production of the vehicle. 2. Chassis and body owner's manuals. 3. All individual component manuals and warranty registration cards as provided by component manufacturers. ***Customer is responsible for completing warranty cards and mailing them to manufacturers.*** 4. The bidder's 12Vdc and 120Vac legends showing wire gauge, color, number and function. 5. The bidder's 12Vdc high current wiring diagram illustrating the battery system, isolators, power converters, alternator, disconnect switches and control panels. 6. The manufacturer shall supply a roof top antenna placement drawing and legend identifying antenna placements and termination points. 7. The manufacturer shall supply an Audio/Video cabling diagram. 8. The manufacturer shall supply at telephone system punch block wiring diagrams. 9. The manufacturer shall supply a alarm system zones legend. 10. The manufacturer shall supply Warranty and Return Authorization procedures. 11. Chassis and generator maintenance and service logs. 12. Battery maintenance information.
21.07	1	At time of delivery an Factory Trained representative will provide up to forty (40) hours of orientation on installed systems such as generator start up and shut down procedures, leveling system operation, mast operation, basic audio/video system operation, basic alarm operation, awning set up, etc.
21.08		***The* project scope does not include certain tasks or costs that are the responsibility of the customer. These items include, but are not limited to: radio and telephone system programming, activation and service fees for cellular telephones, satellite telephones, satellite TV, satellite internet service or other related subscriptions.** **In the event of a discrepancy between the drawing and specification, the specification will supersede.**

RAE SYSTEMS RAPID DEPLOYMENT KIT

Kit includes:

- ProRAE remote package in pelican case, including laptop and wireless modem.
- 4 Area RAEs (LEL/O2/H2S/CO, 10.6eV PID)
- REALink Repeater
- 4 spare Li-Ion batteries
- External 4-bank battery charger

SIDE WINDOW

A slide-by style window shall be provided drivers side towards the rear of the body.

The window shall measure 24.00" high x 36.00" long and shall include screen.

Sliding window shall be provided with an escape feature. Window shall have a hinge at the top and two (2) inside latches at the bottom to allow the window to swing open.

SIDE WINDOWS

Each window shall measure 18.00" high x 30.00" long and shall include a sliding screen.

Sliding window shall be provided with an escape feature. Window shall have a hinge at the top and two (2) inside latches at the bottom to allow the window to swing open.

There shall be two (2) pair provided.

Two (2) on each side of the body towards the front.

ALUMINUM 4-WAY ON FRONT OF BODY

The front corners of the body shall be provided with bright aluminum treadplate. The bottom 20 inches of the extrusion shall be covered. The treadplate shall be fastened to the body extrusions with stainless steel screws. A total of one (1) pair shall be provided.

AWNING

An electrically opening and closing awning with 120 volt electric motor, shall be supplied. The awning shall be stored in a metal housing on the side of the body with end fairings for blending into the side of the body when not in use. When fully extended, the awning shall be self supported without the use of poles extending to the ground.

A switch shall be provided for easy push button convenience inside an adjacent forward compartment. A manual crank shall be provided in the event of a power failure.

The awning shall be the full length of the body or a maximum of 21 feet 8 inches. The awning shall extend out from the body (8) eight feet in length. The colors available are standard colors from the awning manufacturer. The color shall be blue or as designated by the RI EMA.

The awning shall be installed one on each side of the vehicle. The left (driver's) side will

be blue and the right (officer's) side will be red or as designated by the RI EMA.

A total of two (2) shall be supplied.

COMPARTMENT FOR WHEEL CHOCKS

A compartment shall be provided and mounted under the body in front of the rear wheels to hold (4) wheelchocks. Compartment shall be provided to hold our standard folding wheelchock. Compartment shall be fabricated from aluminum treadplate and have an aluminum treadplate drop down door, with a stainless steel hinge across the bottom and chrome plated 2-point D-ring lock.

A total of one (1) shall be provided.

The location shall be on the under the body on the left (driver's) side ahead of the rear wheels side.

NIGHTSCAN LIGHT TOWER ENCLOSURE

An aluminum treadplate enclosure shall be provided on the roof to protect the Nightscan tower from damage that may be caused by wind or tree branches.

The enclosure shall be three (3) sided with the rear of the truck being open. There shall not be a top on the enclosure. The size of the enclosure shall depend on how the tower is mounted.

A total quantity of one (1) shall be provided.

HITCH RECEIVER

A hitch receiver shall be installed at the rear of the vehicle.

The hitch shall be constructed of heavy steel tubing and reinforced to the truck framework, for the receiving portion, including a heavy-duty slide-in tube with a ball. This shall be a Class IV trailer hitch. The class IV rating is 10,000 pounds towing and 1000 pounds tongue with weight distributing hitch.

Slide-in portion shall be held in place by two (2) safety pins with clips.

A seven prong trailer wiring plug shall be provided at the rear with a weatherproof snap cover.

ROOF ACCESS ALUMINUM LADDER

A ladder shall be provided at the rear of the body for access to the top of the body.

Ladder rungs shall be 15.25" wide and the overall width shall be 17.75".

Ladder shall extend above the roof line to provide easier and safer maneuverability both on and off the ladder.

The ladder rails and rungs shall be constructed of 1.25" diameter non-slip extruded aluminum handrail material.

The ladder rungs shall be bolted to the ladder rails with a center mounted solid rod inside the extruded aluminum non-slip rung material.

The ladder shall be secured to the body with stainless steel end stanchions.

right hand side..

A total quantity of one (1) shall be provided.

TOW EYES

Two (2) rear painted "tow" eyes shall be located at the rear of the vehicle and shall be mounted directly to the chassis frame rails. The inner and outer edges of the tow eyes shall be radiused.

KEYED LOCK(S)

A keyed lock shall be furnished for five (5) compartment doors. The compartmentation, to have a keyed lock, shall be all body doors.

RUB RAIL

Bottom edge of the side compartments shall be trimmed with a bright aluminum extruded rub rail.

Trim shall be 2.12" high with 1.38" flanges turned outward for rigidity.

The rub rails shall not be an integral part of the body construction, which allows replacement in the event of damage.

BODY FENDER CROWNS

Stainless steel fender crowns shall be provided around the rear wheel openings.

A rubber welting shall be provided between the body and the crown to seal the seam and restrict moisture from entering.

A dielectric barrier shall be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.

ELECTRICAL

All 12-volt electrical equipment installed by the vehicle manufacturer shall conform to modern automotive practices. All wiring shall be high temperature crosslink type. Wiring shall be run, in loom or conduit, where exposed and have grommets where wire passes through sheet metal. Automatic or manual reset circuit breakers shall be provided which conform to SAE Standards. Wiring shall be color, function and number coded. Function and number codes shall be continuously imprinted on all wiring harness conductors at 2.00" intervals. Exterior exposed wire connectors shall be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids. Electrical wiring and equipment shall be installed utilizing the following guidelines:

(1) All holes made in the roof shall be caulked with silicon, rope caulk is not acceptable. Large fender washers, liberally caulked, shall be used when fastening equipment to the underside of the cab roof.

(2) Any electrical component that is installed in an exposed area shall be mounted in a manner that shall not allow moisture to accumulate in it. Exposed area shall be defined as any location outside of the cab or body.

(3) Electrical components designed to be removed for maintenance shall not be fastened with nuts and bolts. Metal screws shall be used in mounting these devices. Also a coil of wire shall be provided behind the appliance to allow them to be pulled away from the mounting area for inspection and service work.

(4) Corrosion preventative compound shall be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections shall require this compound in the plug to prevent corrosion and for easy separation (of the plug).

(5) All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.

(6) All electrical terminals in exposed areas shall have silicon (1890) applied completely over the metal portion of the terminal. Identification of the switches shall be done by either printing or etching on the switch panel. The switches and identification shall be illuminated.

All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard #108, shall be furnished. Rear identification lights shall be recessed mounted for protection. Lights and wiring mounted in the rear bulkheads shall be protected from damage by installing a false bulkhead inside the rear compartments.

An operational test shall be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.

The results of the tests shall be recorded and provided to the purchaser at time of delivery.

STEP LIGHTS

Two (2) Weldon, Model 9186-23882-30, step lights shall be provided. The step lights shall be provided at the rear body, one (1) each side of the rear compartment.

The step lights shall be controlled by a switch installed at the rear of the unit, in an easily accessible area.

REAR FMVSS LIGHTING

The rear stop/tail and directional lighting shall consist of the following:

Two (2) Whelen, Model 60R00BRR, red LED stop/tail lights.
Two (2) Whelen, Model 60A00TAR, amber LED populated arrow turn light.

These lights shall be installed at the rear of the truck in a polished housing.

Four (4) red reflectors shall be provided.

A Weldon, Model 23882-2600-00, license plate bracket shall be mounted on the driver's side above the warning lights. A Weldon, Model 9186-23882-30, step lamp shall illuminate the license plate.

Two (2) Whelen, Model: 60C00VCR, LED backup lights shall be provided.

The three (3) identification lights located at the rear shall be installed per the following:

Truck-Lite, Model 35, LED
As close as practical to the vertical centerline.
Centers spaced not less than six (6) inches or more than twelve (12) inches apart.
Red in color.
All at the same height.

The four (4) clearance lights located at the rear shall be installed per the following:

Truck-Lite, Model 35, LED
To indicate the overall width of the vehicle.
One (1) each side of the vertical centerline.
All at the same height.
As near the top as practical.
To be visible from the rear and the side.
One (1) each side, facing the side.
One (1) each side, facing the rear.

Per FMVSS 108 and CMVSS 108 requirements.

LIGHTING BEZEL

Two (2) Whelen, Model Cast 4V, four (4) light aluminum housings shall be provided for the rear stop/tail, directional, scene lights and warning.

MAP LIGHT
A Federal Littlelite, model LF18TR, map light with gooseneck and rheostat control shall be located on the instrument panel within easy reach of the officer.

"DO NOT MOVE "VEHICLE" INDICATOR
A flashing red indicator light (located in the driving compartment) shall be illuminated automatically per NFPA (1996 edition, 9-11 or 1999 edition 11-11). The light shall be labeled "Do Not Move Vehicle If Light Is On".

MESSAGES, DISPLAY, Do Not Move Truck
There shall be eleven (11) possible messages displayed on the "Doors" screen, of the information center. The messages shall designate the specified location of what door is opened or other applicable option is not in the moving position(parking brake has been released).

The following messages shall be displayed:

DS Cab Door Open (Driver Side Cab Door Open)

PS Cab Door Open (Passenger's Side Cab Door Open)

DS Crew Cab Door Open (Driver Side Crew Cab Door Open)

PS Crew Cab Door Open (Passenger's Side Crew Cab Door Open)

DS Body Door Open (Driver Side Body Door Open)

PS Body Door Open (Passenger's Side Body Door Open)

Rear Body Door Open.

Light Tower Not Stowed (Light Tower Not Stowed)

Hatch Door Open

Any other device that is opened, extended, or deployed that creates a hazard or is likely to cause damage to if the vehicle is moved, shall show up in the flashing warning box after the parking brake is disengaged.

COMPARTMENT LIGHTING
6.00" diameter Truck-Lite, model 79384, light/s shall be provided in each enclosed compartment. Each light shall have a number 1076 one filament, two wire bulb.

Opening the compartment door shall automatically turn compartment lighting on.

PERIMETER SCENE LIGHTS, CAB

There shall be a Truck-Lite, model 40003, 4.00" grommet mount weatherproof light provided for each cab door. Lighting shall be designed to provide illumination on areas under the driver and officer riding area exits, which shall be activated automatically when the exit doors are opened and by the same means as the body perimeter lights.

The lighting shall be capable of providing illumination at a minimum level of one (1) foot-candle on ground areas within 30.00" of the edge of the vehicle in areas which personnel climb in or out of the vehicle or descend from the vehicle to the ground level.

PERIMETER SCENE LIGHTS, BODY

There shall be two (2) lights provided under the rear step area. The lights shall be spaced one (1) each side of the vehicle and have a clear lens. The perimeter scene lights shall be activated by a parking brake control, transmission in reverse and turn signal w/3 to 5 second delay.

The lighting shall be capable of providing illumination at a minimum level of one (1) foot-candle on ground areas within 30.00" of the edge of the vehicle in areas designed for personnel to climb onto the vehicle or descend from the vehicle to the ground level.

SCENE LIGHTS

Two (2) pair of Whelen, Model 90K000** scene lights shall be installed one (1) on each front and rear corner of the command body.

These lights shall have no internal optics or brackets.

The lights shall be controlled by the following:

From the first switch feature, a control from two (2) switches on the driver side, (driver scene & officer scene), and two (2) switches on the officer side, (driver scene & officer scene),.

From the second switch feature, there shall be no control of this option.

From the third switch feature, activation of all the side scene lights with either directional light or the transmission shifted into reverse.

From the fourth switch feature, there shall be no control of this option.

These lights shall be installed with flange.

REAR SCENE LIGHTS

One (1) pair of Whelen, Model: 90*000*R, scene lights shall be installed one (1) each side at the rear on the upper portion of the command body.

The lights shall have no internal optics or brackets.

These lights shall be controlled by the following options:

From the first switch feature, a control at the driver side switch panel and a control at the officer side switch panel..

From the second switch feature, there shall be no control of this option.

From the third switch feature, there shall be no control of this option.

From the fourth switch feature, there shall be no control of this option

These lights shall be provided with flange.

HAND HELD SPOTLIGHT

There shall be one (1) spotlight provided, model Collins CL-12 with a 9 foot coil cord and momentary switch. The housing shall be made from aircraft aluminum that is black powder coated. The located one (1) on the officers side of the cab dash.

AIR HORN SYSTEM
Two (2) Grover air horns shall be provided and located, in the front bumper, recessed outside of the frame rails. The horn system shall be piped to the air brake system wet tank utilizing .38" tubing. A pressure protection valve shall be installed in-line to prevent loss of air, in the air brake system.

AIR HORN CONTROL
The air horns shall be actuated by a foot switch on the officer's and driver's side.

ELECTRONIC SIREN
A Federal, model PA400S/S, 100/200W Combination Siren/Light control, electronic siren with noise canceling microphone shall be provided.

Siren head shall be located on a swivel bracket mounted on the headliner so that it is accessible to both the driver and officer. The swivel bracket shall be capable of rotating a minimum of 180 degrees.

Siren shall be actuated by a foot switch on the officer's side and by the horn button in the steering wheel. The driver shall have the option to control the siren or the chassis horns from the horn button by means of a selector switch located on the instrument panel.

SPEAKER
There shall be one (1) speaker recessed in the front bumper. Each speaker shall be a Federal, model CP100-S, 100 watt, with chrome finish. Each speaker shall be connected to the siren amplifier.

LIGHTBAR
A Whelen Model: 9000 Ultra Series lightbar shall be mounted on the cab roof.

The length of the lightbar shall be 83.00".

The lightbar shall include the following:
- Four (4) forward facing strobe lights.
- Four (4) corner strobe lights.
- Two (2) forward facing LED modules.
- Two (2) forward facing halogen flashing lights.
- One (1) Opticom™.
- One (1) driver side alley light.
- One (1) officer side alley light.

The lightbar shall be configured with red and clear lenses over the warning lights. The light bar shall contain a safety alert warning light.

Four (4) switches located in the cab on the switch panel shall control this lightbar.
- One (1) switch for the warning lights.
- One (1) switch for the driver side alley light.

One (1) switch for the officer side alley light.

The safety alert light shall be disabled when the parking brake is set.

HEADLIGHT FLASHER

The high beam headlights shall flash alternately between the left and right side, with a control switch located on the cab instrument panel.

Alternating function shall be controlled by the programming of the ECU.

The flash mode shall automatically cancel when the headlight (high or low beam) switch is activated and when the parking brake is set.

WARNING LIGHTS (Side)

Five (5) pair of flush mounted Whelen, Model: 90B00FBR, red LED lights shall be provided.

The lights shall be located, The lights will be located one pair up high on body sides at front and rear, and one pair down low at front and rear, and one on each side of the front bumper extension. (These are located where zone lights are normally located)..

These lights shall be installed with flange kit.

WARNING LIGHTS (Rear)

Two (2) pair of Whelen 90B00FBR red LED lights shall be provided.

These lights shall be located at the rear of the body each side high on rear compartment bulkheads, and activated with the lower zone warning lights.

These lights shall be installed with flange kit.

COMMAND CENTER 12VDC LIGHTS

A switch shall be provided at Wiring for each 12v scene light on each side of the body, and wiring for a switch for both scene lights at the rear shall be installed inside the body to the forward side of the pass side access door. This switch will be mounted by the manufacturer. to control each 12VDC light. There shall be a total of three (3) switches.

ELECTRICAL SYSTEM GENERAL DESIGN for ALTERNATING CURRENT

The following guidelines shall apply to the 120/240 VAC system installation:

General

Any fixed line voltage power source producing alternating current (ac) line voltage shall produce electric power at 60 cycles plus or minus 5 cycles.

Except where superseded by the requirements of NFPA 1901, all components, equipment and installation procedures shall conform to NFPA 70, National Electrical Code (herein referred to as the NEC).

Line voltage electrical system equipment and materials included on the vehicle shall be listed and installed in accordance with the manufacturer's instructions. All products shall be used only in the manner for which they have been listed.

Grounding

Grounding shall be in accordance with Section 250-6 "Portable and Vehicle Mounted Generators" of the NEC. Ungrounded systems shall not be used. Only stranded or braided copper conductors shall be used for grounding and bonding.

An equipment grounding means shall be provided in accordance with Section 250-91 (Grounding Conductor Material) of the NEC.

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 Section 200-6 (Means of Identifying Grounding Conductors) of the NEC.

In addition to the bonding required for the low voltage return current, each body and driving or crew compartment enclosure shall be bonded to the vehicle frame by a copper conductor. This conductor shall have a minimum amperage rating of 115 percent of the nameplate current rating of the power source specification label as defined in Section 310-15 (amp capacities) of the NEC. A single conductor, properly sized to meet the low voltage and line voltage requirements shall be permitted to be used.

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

Operation

Instructions that provide the operator with the essential power source operating instructions, including the power-up and power-down sequence, shall be permanently attached to the vehicle at any point where such operations can take place.

Provisions shall be made for quickly and easily placing the power source into operation. The control shall be marked to indicate when it is correctly positioned for power source operation. Any control device used in the drive train shall be equipped with a means to

prevent the unintentional movement of the control device from its set position.

A power source specification label shall be permanently attached to the vehicle near the operator's control station. The label shall provide the operator with the information detailed in Figure 19-4.10.

Direct drive (PTO) and portable generator installations shall comply with Article 445 (Generators) of the NEC.

Overcurrent protection

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 144 inches. (3658 mm) in length.

For fixed power supplies, all conductors in the power supply assembly shall be type THHW, THW, or use stranded conductors enclosed in nonmetallic liquid tight flexible conduit rated for a minimum of 194 degree Fahrenheit (90 degrees Celsius).

For portable power supplies, conductors located between the power source and the line side of the main overcurrent protection device shall be type SO or type SEO with suffix WA flexible cord rated for 600-volts at 194 degrees Fahrenheit (90 degrees Celsius).

Wiring Methods

Fixed wiring systems shall be limited to the following:

- Metallic or nonmetallic liquid tight flexible conduit rated at not less than 194 degrees Fahrenheit (90 degrees Celsius)

or

- Type SO or Type SEO cord with a WA suffix, rated at 600 volts at not less than 194 degrees Fahrenheit (90 degrees Celsius)

Electrical cord or conduit shall not be attached to chassis suspension components, water or fuel lines, air or air brake lines, hydraulic lines, exhaust system components, or low voltage wiring. In addition the wiring shall be run as follows.

- Separated by a minimum of 12 inches (305 mm), or properly shielded, from exhaust piping

- Separated from fuel lines by a minimum of six (6) inches (152 mm) distance.

Electrical cord or conduit shall be supported within six (6) inches (152 mm) of any junction box and at a minimum of every 24 inches (610 mm) of continuous run. Supports shall be made of nonmetallic materials or corrosion protected metal. All supports shall be of a design that does not cut or abrade the conduit or cable and shall be mechanically fastened to the vehicle.

Wiring Identification
All line voltage conductors located in the main panel board shall be individually and permanently identified. The identification shall reference the wiring schematic or indicate the final termination point. When prewiring for future power sources or devices, the unterminated ends shall be labeled showing function and wire size.

Wet 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 210-7 "Receptacles and Cord Connections" of the NEC.

All receptacles located in a wet location shall be not less than 24 inches (610 mm) from the ground. Receptacles on off-road vehicles shall be a minimum of 30 inches (762 mm) from the ground.

The face of any wet location receptacle shall be installed in a plane from vertical to not more than 45 degrees off vertical. No receptacle shall be installed in a face up position.

Dry Locations
All receptacles located in a dry location shall be of the grounding type. Receptacles shall be not less than 30 inches (762 mm) above the interior floor height.

All receptacles shall be marked with the type of line voltage (120-volts or 240-volts) and the current rating in amps. If the receptacles are direct current, or other than single phase, they shall be so marked.

Listing
All receptacles and electrical inlet devices shall be listed to UL 498, Standard for Safety Attachment Plugs and Receptacles, or other appropriate performance standards. Receptacles used for direct current voltages shall be rated for the appropriate service.

Electrical System Testing
The wiring and associated equipment shall be tested by the vehicle manufacturer or the installer of the line voltage system.

The wiring and permanently connected devices and equipment shall be subjected to a dielectric voltage withstand test of 900-volts for one (1) minute. The test shall be conducted between live parts and the neutral conductor, and between live parts and the vehicle frame with any switches in the circuit(s) closed. This test shall be conducted after all body work has been completed.

Electrical polarity verification shall be made of all permanently wired equipment and receptacles to determine that connections have been properly made.

Operational Test per NFPA 1901 Chapter 19-14.4

The vehicle manufacturer shall perform the following operation test and shall certify that the power source and any devices that are attached to the line voltage electrical system are properly connected and in working order.

The prime mover shall be started from a cold start condition and the line voltage electrical system loaded to 100 percent of the nameplate rating.

The power source shall be operated at 100 percent of its nameplate voltage for a minimum of two (2) hours unless the system meets category certification as defined in NFPA 1901 chapter 19-14.5.

Where the line voltage power is derived from the vehicle's low voltage system, the minimum continuous electrical load as defined in NFPA 1901 Chapter 9 shall be applied to the low voltage electrical system during the operational test.

GENERATOR

Model: Two (2) Onan Commercial Quiet Diesel 12-KW 12.0HDCAD-2209A

Mounting: Permanently

Size: 45.77" length x 22.76" width x 28.27" height

Weight: 760 pounds

As outlined on **page 47** of the specification.

Fuel Requirements
The fuel supply shall be the chassis fuel tank.

Exhaust
The muffler shall be supplied outside the compartment. Stainless steel 1.75" flexible tubing shall be used to connect the muffler to the generator. The exhaust discharge shall be directed away from any operators position.

Type of Cooling System
The generator shall be liquid cooled and shall be equipped with a pusher fan. The radiator shall be isolated, so that hot air doesn't recirculate back into the compartment.

Cooling Requirements
The air outlet requirements shall not be less than 330 square inches. The air inlet shall not be less than 430 square inches.

Shutdown: Low Oil Pressure, high water temperature

Continuous Duty Rating: 12,000 Watts

Volts: 120/240

Phase: Single

Cycles: 60 HZ

Generator Monitors

To properly monitor the generator performance and load demands during operation, the generator shall be equipped with a full instrument and control package. This panel shall be mounted adjacent to the load center. The following instruments shall be installed in the panel:

- One (1) Voltmeter
- Two (2) Ammeters
- One (1) Frequency Meter
- One (1) Hour Meter
- One (1) "Power On" Green Indicator Light
- Two (2) Fuse Holders: With two (2) amp fuses for gauge protection

Operating Criteria

A caution tag shall be placed close to the generator stating that the compartment doors must be open during operation.

If the generator is located in a cargo area, the radiator shall be facing the side sheet for the hot air to escape.

GENERATOR MOUNTING

The generator shall be mounted in the drivers side rear compartment to the forward side of the elect reel. The flooring in this area shall be either reinforced or constructed, in such a manner, that it shall handle the additional weight of the generator.

ELECTRIC START PROVISION

Electric start provisions shall be furnished for the generator from the chassis battery system.

GENERATOR REMOTE START

Generator preheat along with a start and stop switch shall be provided in the cab switch panel and near the circuit breaker box in addition to the controls on the generator. A light shall be provided to indicate that the generator is running.

ELECTRIC FUEL PUMP

A fuel pick-up tube shall be provided in the chassis fuel tank along with an electric fuel pump for the generator fuel system. A fuel line shall be provided from the fuel tank to the generator with a manual shutoff valve located at the generator.

GENERATOR OIL DRAIN
The generator oil drain shall extend through the floor exiting below the truck.

GENERATOR EXHAUST
The generator exhaust shall be routed through the compartment floor and terminate under the vehicle.

CIRCUIT BREAKER PANEL
A circuit breaker panel shall be installed in the interior of the body A directory for each breaker shall be provided adjacent to the circuit breaker panel. Identification of circuits shall be done in a durable manner that provides years of service.

TELESCOPIC LIGHT ALARM (CUSTOM CHASSIS)
When the telescopic floodlight is in the up position and the parking brake is released, the truck horn shall be activated as an alarm.

120 VOLT LIGHTING
A Fire Research Model FC200 light shall be provided.

The light shall be recessed in a cast aluminum housing.

The light fixture shall be a single 750 watt, 120 volt, Focus 200 Series unit that draws 6.3 amps.

There shall be two (2) lights provided.

The lights will be located one (1) on each side of the body towards the front.

120 VOLT LIGHTING
A Fire Research Model #FC600-S75 quartz tube flood light shall be provided.

The light shall be a tripod style with quick release truck mounting brackets.

The light fixture shall be a single 750 watt, 120 volt Focus light that draws 6.3 amps.

The lamp head shall swivel 360 degrees left or right and tilt up and down.

A receptacle shall be provided near the base of the light.

A 20 amp, 120 volt, twist-lock plug with waterproof boot shall be provided on the end of the light cord..
A total of two (2) lights shall be provided both at the rear of the body..

REMOTE SWITCH (Quartz Light)
A remote on/off actuation switch in a cup, with a 12VDC, green indicator light, shall be

provided to actuate a 120/240 volt solenoid switch for each quartz light.

The four (4) switches shall be located next to each light. The switches shall control the lights The switches will be located a recessed cup switch on each side of the body to control the 120v scene lights. One (1) shall also be located at the rear of the body for each tripod light..

240-VOLT LIGHTING

A Will-Burt Night Scan roof mounted elevated lighting system, Model NS15-9000T/F, shall be provided.

The unit shall mount on an external roof surface area 85.00" long x 43.00" wide x 12.00" high.

The light mast shall tilt to a vertical position and the directional lighting system shall telescope to an extended height of 15 feet.

The mast shall be operated with a 12-volt DC control using 20 psi regulated air from the chassis air system.

Control for the mast and the lighting system shall be a hand held wired remote unit. It shall be operable with a single hand for turn/tilt, up/down, and on/off. Length of the control cord shall be 25 feet. The mast shall automatically stow and the lights shall automatically nest when the down switch is activated. The remote shall be located locate remote on pass side body in compartment P3 on the rearward wall. To have a control with a 25' cord. Heads to have split tilt function..

The weight of the unit shall not exceed 144 pounds.

Six (6), 1500-watt, 240-volt AC quartz halogen Focus lights shall be mounted on the mast in a weatherproof directional lighting system that shall have the ability to rotate 385 degrees and tilt 330 degrees. The light heads shall have a dual tilt function, where the left and right sides can tilt independently in different directions or together in the same direction.

A "do not move truck" warning indicator shall activate in the cab when the mast is out of the nested position.

A label shall be provided at the operator's location to indicate mast operation instructions, warning information, extended tower height from the ground and bulb replacement data.

Tower Look Up Light

A self contained 12-volt floodlight shall be provided on the light tower. The light shall turn on automatically when the tower is raised and turn off when the tower is lowered.

A total of one (1) light tower shall be provided light mast to be located on top of the body

at the forward end.

MAST STROBE LIGHT

A self contained strobe light shall be provided on the light mast. The light shall turn on automatically when the mast is raised and turn off when the mast is lowered. The lens color shall be green so as to designate the command post.

ELECTRIC CORD REEL

Furnished with the AC electrical system shall be a Hannay, series ECR-6600, cord reel wired for a four (4) conductor cord. The reel shall be provided with a 12-volt electric rewind switch, that is guarded to prevent accidental operation and labeled for its intended use. The switch shall be protected with a fuse and installed at a height not to exceed 72 inches above the operators standing position.

Drum to be larger for ease of rewind and have approximately 3" of space left on the spool when filled with 200' of 10/4, 600 volt jacketed cord.

A captive roller assembly shall be provided to aid in the payout and loading of the reel. A ball stop shall be provided to prevent the cord from being wound on the reel.

A label shall be provided in a readily visible location adjacent to the reel. The label shall indicate current rating, current type, phase, voltage and total cable length.

A total of one (1) cord reel shall be provided Locate in D/S rear compartment to the rear of the generator. Blister into body as needed to provide sufficient space. Use Hannay #6618-19-20 reel..

110 VOLT INTERIOR RECEPTACLE

Receptacle shall be a NEMA 5-15, 110 volt, 15 amp, three (3) wire duplex household type connected to the shoreline.

There shall be one (1) receptacle provided.

The receptacle shall be installed in the cab between the drivers and officers seat towards the rear of the engine tunnel..

LOOSE EQUIPMENT

The following equipment shall be furnished with the completed unit:

- Three (3) bags of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit

- Two (2) extinguishers, 2.50# "ABC" D.O.T. extinguisher shall be shipped loose.

PAINT

The exterior custom cab and body painting procedure shall consist of a six (6) step finishing process as follows:

1. Manual Surface Preparation - All exposed metal surfaces on the custom cab and body shall be thoroughly cleaned and prepared for painting. Surfaces that shall not be painted include all chrome plated, polished stainless steel, anodized aluminum and bright aluminum treadplate. Each imperfection on the exterior metal surface shall be removed or filled and then sanded smooth for a smooth appearance. All seams shall be sealed before painting.

2. Chemical Cleaning and Treatment - The metal surfaces shall be properly cleaned using a high pressure and high temperature acid etching system. Surfaces are chemically cleaned to remove all dirt, oil, grease and metal oxides to ensure the subsequent coatings bond well. An ultra pure water final rinse shall be applied to all metal surfaces, excluding undercarriage components, at the conclusion of the metal treatment process.

3. Primer/Surfacer Coats - A two (2) component urethane primer/surfacer shall be hand applied to the chemically treated metal surfaces to provide a strong corrosion protective base coat and to smooth out the surface.

4. Hand Sanding - The primer/surfacer coat shall be lightly sanded to an ultra smooth finish.

5. Sealer Primer Coat - A two (2) component sealer primer coat shall be applied over the sanded primer.

6. Topcoat Paint - Two (2) coats of an automotive grade, two (2) component acrylic urethane paint, shall also be applied.

All removable items such as brackets, compartment doors, door hinges, trim, etc. shall be removed and painted separately to insure paint behind all mounted items. Body assemblies that can not be finish painted after assembly shall be finish painted before assembly.

The cab and body shall be two-tone, with the upper section painted as the Rhode Island EMA may designate along with a shield design on the cab face and lower section of the cab and body painted as the Rhode Island EMA may designate.

PAINT - ENVIRONMENTAL IMPACT

Contractor shall meet or exceed all current State (his) regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water and soil. Controls shall include the following conditions:

- Topcoats and primers must be chrome and lead free.

- Metal treatment chemicals must be chrome free. The wastewater generated in the

metal treatment process must be treated on-site to remove any other heavy metals.
- Particulate emission collection from sanding operations must have a 99.99% efficiency factor.

- Particulate emissions from painting operations must be collected by a dry filter or water wash process. If the dry filter means is used, it must have an efficiency rating of 98.00%. Water wash systems must be 99.97% efficient.

- Water from water wash booths must be reused. Solids shall be removed mechanically on a continual basis to keep the water clean.

- Paint wastes are disposed of in an environmentally safe manner. They are used as fuel in kilns used in the cement manufacturing process - thereby extracting energy from a waste material.

- Empty metal paint containers must be cleaned, crushed and recycled to recover the metal.

- Solvents used in cleanup operations must be collected, sent off-site for distillation and returned for reuse. Residue from the distillation operation shall be used as fuel in off-site cement kilns.

Additionally, the finished vehicle shall not be manufactured with or contain products that have ozone depleting substances. Contractor shall, upon demand, present evidence that his manufacturing facility meets the above conditions and that it is in compliance with his State EPA rules and regulations.

PAINT CHASSIS FRAME ASSEMBLY

The chassis frame assembly shall be painted the main body color before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, etc. Components that are included with the chassis frame assembly that shall be painted black are frame rails, cross members, axles, suspension, steering gear, fuel tank, body substructure supports, miscellaneous mounting brackets, etc.

WARRANTY - PAINT AND CORROSION

The cab and body exterior paint finish shall be warranted against blistering, peeling, bubbling, lack of adhesion or any other manufacturing or material defect for a period of **ten (10) years**.

The cab and body shall also be warranted against corrosion perforation for a period of **ten (10) years**.

A copy of the manufacturer's warranty shall be included with the bid.

CLEARCOAT PAINT SEALER

The exterior of the vehicle and doors shall be painted as standard and then sprayed with

two (2) coats of clear sealer. The cab and body exterior paint finish shall be warranted for topcoat durability and appearance**,** which covers gloss, color retention and cracking at 100% for a period of **six (6) years**.

FINISH TWO-TONE PAINT BREAK SMOOTH, NO VINYL
The two-tone paint break shall be finished smooth. There shall not be a vinyl stripe installed on the break.

PAINT, COMPARTMENT INTERIOR
Interior of compartmentation shall be painted with a gray spatter type paint.

STRIPE (On Paint Break)
There shall be a gold leaf stripe provided on the paint break in place of chrome molding. The stripe shall be on both sides of the cab and on the cab face with shield.

GOLD LEAF STRIPE, BODY
A gold leaf stripe shall be provided on each side of the body, located along the top of the side compartmentation.

STRIPE, CAB FACE
A gold leaf stripe shall be provided on the paint break on the front of the cab.

LETTERING
The lettering shall be totally encapsulated between two (2) layers of clear vinyl.

LAMINATION WARRANTY
The manufacturer shall provide a **three (3) year** warranty against defects in material and workmanship with the graphics process. A copy of the vehicle manufacturer's warranty shall be included with the bid.

LETTERING
Twenty-one (21) to forty (40) genuine gold leaf lettering, 3.00" high, outlining and double color shading shall be provided.

LETTERING
There shall be one (1) to twenty (20) genuine gold leaf letters, 4.00" high, with outlining and double color shading provided and installed.

5" GOLD LEAF LETTERING
Six (6) letters 5" high shall be provided. Each letter shall be genuine 22 karat gold leaf totally encapsulated between two (2) layers of clear vinyl with a double shade. Install Cab and Body.

GOLD LEAF LETTERING
There shall be one (1) to twenty (20) genuine gold leaf letters, 6.00" high, provided. Each letter shall be genuine 22 karat gold leaf totally encapsulated between two (2) layers of

clear vinyl with an outline and shade. Install on the rescue body.

GOLD LEAF LETTERING
Eighty-one (81) to one hundred (100) genuine gold leaf lettering, 6.00" high shall be provided. Each letter shall be genuine 22 karat gold leaf totally encapsulated between two (2) layers of clear vinyl with an outline and shade. Install on the rescue body.

GOLD LEAF LETTERING
Eighty-one (81) to one hundred (100) genuine gold leaf lettering, 6.00" high shall be provided. Each letter shall be genuine 22 karat gold leaf totally encapsulated between two (2) layers of clear vinyl with an outline and shade. Install on the rescue body and cab.

EMBLEMS
An American flag emblem, 4.00" high x 7.00" wide, shall be installed Cab roof fairing. The flag shall appear to be moving in the wind.

EMBLEM
There shall be two (2) 20.00" high genuine gold leaf/GOLDSTAR Rhode Island EMA emblems installed as the customer may direct.

EMBLEM
There shall be one (1) 14.00" high genuine gold leaf/GOLDSTAR Rhode Island EMA emblems installed as the customer may direct.

EMBLEM
There shall be two (2) 30.00" high genuine gold leaf/GOLDSTAR Rhode Island EMA emblems installed install as the customer may direct. The emblems shall match the photo attached at the time of the pre construction drawings.

EMBLEM
There shall be a 14.00" high genuine gold leaf/GOLDSTAR Rhode Island EMA emblems installed Cab face on faring.

EMBLEMS
There shall be two (2) reflective emblems installed as specified by the department. An example shall be supplied before fabrication. The emblems shall be white reflective with black vinyl detail. Each emblem shall measure approximately 20" x 20".

RUSTPROOFING/UNDERCOATING
The cab shall be properly treated by an authorized Ziebart dealer.

The rustproofing material shall be a transparent coating of an organic based corrosion inhibitor for long-term protection against corrosion.

The rustproofing material utilized shall be formulated to resist corrosion.

Coating texture shall be waxy and pliable after drying so it shall not chip, crack, or peel off during normal vehicle operations. Minimum dry film thickness shall be in the range of 3.00 to 4.00 mils.

The material shall be applied to the following areas:

Interior of the cab doors.
Interior of all double panel style body doors.

The underside of the vehicle shall be undercoated with an asphalt petroleum based material, dark in color.

The undercoating material utilized on the vehicle shall be formulated to resist corrosion and deaden unwanted sound or road noise.

Coating texture shall appear firm, flexible, and resistant to abrasion. Minimum dry film thickness shall be in the range of 8.00 to 12.00 mils.

The material shall be applied to the following areas:

Body and cab wheel well fender liners, on the back side only.
Underside of body and cab sheet metal, and structural components.
Underside and vertical sides of all sheet metal compartmentation, including support angles.
Structural support members under running boards, rear platforms, battery boxes, walkways, etc.

Inside surfaces of the pump heat enclosure, (when installed).