



KME FIRE APPARATUS

Corona Fire Department

USAR Heavy Rescue

DESIGN CLAUSE

QTY: 1

These specifications outline the components, installation methods, and operational characteristics KME is agreeing to provide in order to meet the purchaser's requirements. Subject to the terms of the purchase agreement, other construction details not explicitly listed in these specifications will be determined at the discretion of the builder. In the event the purchaser desires a different construction or installation not already described in these specifications, additional charges may apply, and quoted lead time commitments will be adjusted.

COMPLETION INFORMATION

QTY: 1

The contractor shall supply, at the time of delivery, at least one (1) copy of the following documents.

- Owners name and address Apparatus manufacturer, model and serial number
- Chassis make, model and serial number
- Front tire size and total rated capacity in pounds
- Rear tire size and total rated capacity in pounds
- Chassis weight distribution in pounds with water and manufacturer mounted equipment, front and rear
- Engine make, model, serial number, rated horsepower, rated speed and governed speed
- Type of fuels and fuel tank capacity
- Electrical system voltage and alternator output in amps.
- Battery make, model and total capacity in cold crank amps (CCA)
- Transmission make, model, and serial number. If so equipped chassis transmission PTO(s) make, model and gear ratio
- Pump make, model, rated capacity in gallons per minute (liters per minute where applicable) and serial number
- Pump transmission make, model, serial number and gear ratio
- Auxiliary pump make, model, rated capacity in gallons per minute (liters per minute where applicable) and serial number
- Water tank certified capacity in gallons or liters
- Paint manufacturer and paint number(s)
- Company name and signature of responsible company representative
- Certification of slip resistance of all stepping, standing and walking surfaces.

If the apparatus has a fire pump or an industrial supply pump, the pump manufacturer's certification of suction capability.

If the apparatus has a fire pump or an industrial supply pump, a copy of the apparatus manufacturer's approval for stationary pumping applications.

If the apparatus has a fire pump or an industrial supply pump, the engine manufacturers certified brake horsepower curve for the engine furnished, showing the maximum governed speed.

If the apparatus has a fire pump or an industrial supply pump, the pump manufacturers certification of hydrostatic test.

If the apparatus has a fire pump or an industrial supply pump, the third party certification of inspection and test for the fire pump (if applicable).

If the apparatus has an aerial device the third party certification of inspection and test for the aerial device.

If the apparatus has an aerial device, all the technical information required for inspections to comply with NFPA 1911, Standards for Testing Fire Department Aerial Devices.

If the apparatus has a fixed line voltage power source, the certification of the test for the fixed power source (if applicable).

If the apparatus is equipped with an air system, test results of the air quality, the SCBA fill station, and the air system installation.

Weight documents from certified scale - showing actual loading on the front axle, rear axle(s) and overall vehicle (with the water tank full but without personnel, equipment and hose) shall be supplied with the complete vehicle to determine compliance with NFPA-1901.

Written load analysis and results of electrical performance tests.

If the apparatus is equipped with a water tank, the certification of water tank capacity by the tank manufacturer.

FMVSS REQUIREMENT

QTY: 1

The chassis shall be certified by the apparatus manufacturer as conforming to all applicable Federal Motor Vehicle Safety Standards in effect at the date of contract.

This shall be attested to by the attachment of a FMVSS certification label on the vehicle by the contractor who shall be recognized as the responsible final manufacturer.

RECORDS

QTY: 1

The successful bidder shall be responsible for preparing and maintaining a record file of parts and assemblies used to manufacture the apparatus.

These records shall be maintained in the factory of the bidder for a minimum of twenty (20) years.

File shall contain copies of any and all reported deficiencies, all replacement parts required to maintain the apparatus, and original purchase documents including specifications, contract, invoices, incomplete chassis certificates, quality control reports and final delivery acceptance documents.

The {Company} shall have access to any and all documents contained in this file upon official written request.

GENERAL CONSTRUCTION

QTY: 1

The complete apparatus, assemblies, subassemblies, component parts, etc., shall be designed and constructed with the due consideration to the nature and distribution of the load to be sustained and to the general character of the service to which the apparatus is to be subject.

All parts of the apparatus shall be designed with a factor of safety, which is equal to or greater than that which is considered standard and acceptable for this class of equipment in fire fighting service.

All parts of the apparatus shall be strong enough to withstand general service under full load.

The apparatus shall be so designed that the various parts and readily accessible for lubrication, inspection, adjustment and repair.

Bidder's specifications must meet minimum requirements of N.F.P.A. Pamphlet #1901 and all State and Federal Department of Transportation vehicle regulations at time of sale of unit.

The apparatus shall be designed and constructed, and the equipment so mounted, with due consideration to distribution of the load between front and rear axles that all specified equipment, including a full complement of specified ground ladders, full water tank, loose equipment, and firefighters shall be carried without overloading or injuring the apparatus.

PRODUCT LIABILITY

QTY: 1

Each bidder shall supply proof of product liability and facility insurance equal to or exceeding \$30,000,000.00.

This shall be provided as part of the proposal. There will be no exceptions.

PAINT CERTIFICATION

QTY: 1

The finish paint shall be certified by the apparatus manufacturer as conforming to all applicable Commercial Vehicle Paint Standards in effect at the date of contract.

This shall be attested to by the attachment of a Sikkens certification.

PRICES & PAYMENTS

QTY: 1

The bid price will be F.O.B. Destination, on a delivered and accepted basis at the Fire Department.

Total price on KME's proposal sheet will include all items listed in these specifications.

KME has computed pricing less federal and state taxes. It is understood that any applicable taxes will be added to the proposed prices, unless the purchaser furnishes appropriate tax-exempt forms.

FAIR ETHICAL & LEGAL COMPETITION

QTY: 1

In order to ensure fair, ethical, and legal competition, neither original equipment manufacturer (OEM) nor parent company of the OEM shall have ever been fined or convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market.

There will be no exceptions.

MATERIAL & WORKMANSHIP

QTY: 1

All equipment furnished shall be guaranteed to be new and of current manufacture, to meet all requirements of these specifications.

All workmanship shall be of high quality and accomplished in a professional manner so as to insure a functional apparatus with a pleasing, aesthetic appearance.

CONTRACT ADMINISTRATOR

QTY: 1

The successful bidder shall designate a contract administrator to provide a single point interface between the purchaser and the contractor on all matters concerning the contract.

APPROVAL DRAWING

QTY: 1

A detailed drawing of the apparatus shall be provided to the purchaser for approval before construction begins. A copy of this drawing shall also be provided to the manufacturer's representative. Upon purchaser's approval, the finalized drawing shall become a part of the total contract.

The drawing shall show, but is not limited to, such items as the chassis make and model, major components, location of lights, sirens, all compartment locations and dimensions, special suction, discharges, etc. The drawing shall be a visual interpretation of the apparatus as it is to be supplied.

INSPECTION TRIPS (3)

QTY: 1

The successful bidder shall provide three (3) factory inspection trips to the apparatus manufacturer's facility.

Transportation, meals, lodging, and other requisite expenses shall be the bidder's responsibility.

ACCOMMODATIONS FOR FIVE (5)

QTY: 1

Accommodations shall be for five (5) Fire Department representatives per trip.

The factory visits shall occur at the following stages of production of the apparatus:

TRIP ONE (1) AT PRE CONSTRUCTION

QTY: 1

Pre-construction / blueprint review.

TRIP TWO (2) AT MID-POINT COMPLETION

QTY: 1

Midpoint completion of entire apparatus.

TRIP THREE (3) AT FINAL COMPLETION

QTY: 1

Final inspection upon completion.

DELIVERY

QTY: 1

Delivery of the apparatus to the customer shall remain the bidder's responsibility.

On initial delivery of the fire apparatus, a qualified and responsible representative of the contractor shall demonstrate the apparatus and provide initial instruction to representatives of the customer regarding the operation, care, and maintenance of the apparatus and equipment supplied.

INSTRUCTION MANUALS - TWO (2) SETS - USB

QTY: 1

In accordance with standard commercial practices, applicable to each vehicle (including body and special equipment) furnished under the contract, the following listed manuals and schematics, in the quantity specified, shall be provided at time of delivery of each vehicle.

The contractor shall supply at time of delivery, two (2) USB copies of a complete operation and service manual covering the complete apparatus as delivered and accepted.

The manual shall contain the following:

- Descriptions, specifications, and ratings of chassis, pump (if applicable), and aerial device
- Wiring diagrams

- Lubrication charts
- Operating instructions for the chassis, any major components such as a pump and any auxiliary systems
- Instructions regarding the frequency and procedures recommended for maintenance
- Parts replacement information

VEHICLE FLUID PLATE

QTY: 1

As required by NFPA-1901, the contractor shall affix a permanent plate in the driver's compartment specifying the quantity and type of the following fluids used in the vehicle:

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

- Engine oil
- Engine coolant
- Chassis transmission fluid
- Pump transmission lubrication fluid
- Pump primer fluid
- Drive axle(s) lubrication fluid
- Air-conditioning refrigerant
- Air-conditioning lubrication oil
- Power steering fluid
- Cab tilt mechanism
- Transfer case fluid
- Equipment rack fluid
- Air compressor system lubricant
- Generator system lubricant
- Aerial systems

ALL KME LOGOS MUST BE MECHANICALLY FASTENED

QTY: 1

All KME logos need to be mechanically fastened.

UNIT BUILT AT HEADQUARTERS

QTY: 1

In order to insure top quality construction, maximum assembly line and engineering communication and the highest level of manufacturing supervision the entire apparatus shall be built at the bidders' primary (headquarters) manufacturing facility.

Apparatus constructed at satellite plants will not be considered.

EXACT BLUEPRINT WITH BID

QTY: 1

A scale drawing of the specific apparatus being proposed shall be submitted WITH THE BID.

Drawings of similar units or demo units shall not be permitted.

Bidders should be clear that this provision is requiring a SCALE drawing of the truck which is actually being bid.

The drawing shall be done at the manufacturer's facility by the manufacturer's engineering department in order to guarantee the accuracy of the drawing.

Failure to comply with this requirement shall be grounds for rejection of the bid!

FAMA MEMBERSHIP

QTY: 1

The apparatus manufacturer must be a current member of the Fire Apparatus Manufacturer's Association (FAMA).

MANUFACTURED IN UNITED STATES

QTY: 1

The entire apparatus shall be assembled within the borders of the Continental United States to insure more readily available parts (without added costs and delays caused by tariffs and customs) and service.

ISO REQUIREMENT

QTY: 1

The manufacturer shall operate a Quality Management System that is certified to ISO 9001 by an organization that is accredited by the ANSI-ASQ National Accreditation Board (ANAB).

This type of business management system shall allow the manufacturer to monitor processes to ensure they are effective; keep adequate records; check output for defects, with appropriate and corrective action where necessary; regularly review individual processes and the quality system itself for effectiveness; and facilitate continual improvement.

A copy of the registration certificate must be included in the proposal, NO EXCEPTIONS.

AMP DRAW REPORT

QTY: 1

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

A written load analysis, which shall include the following:

- The rating of the alternator.
- The minimum continuous load of each component that is specified per: Applicable NFPA-1901.
- Additional loads that, when added to the minimum continuous load, determine the total connected load.
- Each individual intermittent load.

All of the above listed items shall be provided by the bidder per the applicable NFPA-1901.

COOPERATIVE PURCHASING

QTY: 1

The Manufacturer shall be pleased to allow other public agencies to use the purchase agreement resulting from this invitation to bid unless the bidder expressly notes on the proposal form that prices are not available for tag-on.

The condition of such use by other agencies shall be that any such agency must make and pursue contact, purchase order/contract, and all contractual remedies with the successful bidder.

Such tag-ons shall be done so that the original purchasing agency has no responsibility for performance by either the manufacturer or the agency using the contract.

VEHICLE TRANSPORTATION - KME PROVIDED

QTY: 1

Transportation for the completed vehicle from KME Fire Apparatus in Nesquehoning, PA to the end user shall be provided by KME.

!!! CRITICAL OVERALL HEIGHT REQUIREMENT !!! - "NO

QTY: 1

!!! CRITICAL OVERALL LENGTH REQUIREMENT !!! - "NO

QTY: 1

NFPA TREADPLATE CERTIFICATION

QTY: 1

All stepping, standing, and walking surfaces on the body shall meet NFPA #1901 anti-slip standards.

Aluminum tread plate utilized for stepping, standing, and walking surfaces shall be Alcoa No-Slip type.

This material shall be a minimum 3/16 (0.1875") in thickness.

Upon request by the purchaser, the manufacturer shall supply proof of compliance with this requirement.

All vertical surfaces on the entire vehicle will also have NFPA treadplate in order to provide a consistent pattern.

SPECIAL SERVICE FIRE APPARATUS

QTY: 1

The unit shall be designed to conform fully to the "Special Service Fire Apparatus" requirements as stated in the NFPA 1901 Standard (2016 Revision), which shall include the following required chapters as stated in this revision:

- Chapter 1 Administration
- Chapter 2 Referenced Publications
- Chapter 3 Definitions
- Chapter 4 General Requirements
- Chapter 10 Special Service Fire Apparatus
- Chapter 12 Chassis and Vehicle Components
- Chapter 13 Low Voltage Electrical Systems and Warning Systems
- Chapter 14 Driving and Crew Areas
- Chapter 15 Body, Compartments and Equipment Mounting

NFPA "CHAPTER 22" 110 VOLT SYSTEM REQUIREMENTS

QTY: 1

Chapter 22 Line Voltage Electrical Systems

NFPA "CHAPTER 24" AIR SYSTEM REQUIREMENTS

QTY: 1

Chapter 24 Air Systems

NFPA "CHAPTER 25" WINCH REQUIREMENTS

QTY: 1

Chapter 25 Winches

SAFETY SIGNS (NFPA REQUIRED)

QTY: 1

Safety sign(s) shall be located on the vehicle at the rear step, and at any cross walkway(s), to warn personnel that riding in or on these areas while the vehicle is in motion is prohibited.

THIRD PARTY TESTING

QTY: 1

If required by the specific chapters of NFPA-1901, the proposed unit shall be tested and certified by independent third party inspectors.

All test work for fire pumps outlined in NFPA 1901, Edition shall be conducted.

The third party inspectors shall provide the manufacturer a complete written examination and test report for each inspection performed at the manufacturer's facility.

This report specifies the points of inspection and results of such examinations and tests.

The inspectors performing the test work on the units are certified to Level II in the required NDT methods, under the requirements outlined in ASNT document CP-189.

The actual person(s) performing the inspection shall present for review proof of Level II Certification in the required NDT methods.

The apparatus manufacturer shall designate, in writing, who is qualified to witness and certify these test results.

Prior to submittal to the automotive fire apparatus manufacturer, the final Report shall be reviewed by the Supervisor of Fire Equipment Services and a Registered Professional Engineer, both of whom are directly involved with the aerial device certification program.

When the unit successfully meets all the requirements outlined in NFPA 1901, current edition, the third party inspector shall issue a Certificate of Automotive Fire Apparatus Examination and Test stating the unit's compliance with NFPA- 1901.

120/240 VOLT ELECTRICAL SYSTEM TESTING

QTY: 1

All line voltage wiring and permanently connected devices and equipment shall be subjected to a dielectric voltage withstand test of 900 volts for one 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 circuits closed. The test shall be conducted after all bodywork has been completed. The dielectric tester shall have a minimum 500 VA transformer with a sinusoidal output voltage that can be verified.

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

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

The following items shall be monitored and documented every 15 minutes:

- The cranking time until the generator starts and runs.
- The voltage, frequency, and amperes at continuous full rated load.

- The generator oil pressure, water temperature, transmission temperature, hydraulic temperature, and the battery rate charge, as applicable.
- The ambient temperature and altitude.

The generator shall operate at 100 percent of its nameplate wattage for a minimum of two (2) hours.

UL LINE VOLTAGE TESTING

QTY: 1

When the unit successfully meets all the requirements outlined in NFPA 1901, 2016 Edition, third party inspectors shall issue a Certificate of Automotive Fire Apparatus Examination and Test stating the unit's compliance with the required line voltage section of NFPA.

SEVERE SERVICE CAB - BASE, 100" - S2020

QTY: 1

The cab shall be a custom tilt style, built specifically for fire service.

The cab shall be a cab over engine design, with integral tilt mechanism and engine access from inside the cab.

Cab shall be designed, fabricated, assembled in its entirety, and installed on the frame rails in the manufacturer's; factory.

This requirement will eliminate any split responsibility in warranty and service. There will be no exceptions.

The cab interior shall be the "Open-Space" design with no wall, window or vertical support posts between the front and rear crew areas to allow direct communication, better visibility and air circulation in the cab.

CAB MATERIAL

QTY: 1

The cab shall be fabricated from 5052-H 32 aluminum alloy, utilizing the minimum material thickness as follows:

- Cab side panels 0.125 thick (1/8")
- Cab roof 0.125 thick (1/8")
- Forward cab front sheet 0.125 thick (1/8")
- Interior cab panels 0.125 thick (1/8")
- Other panels 0.125 thick (1/8")
- Cab doors 0.1875 thick (3/16")
- Engine enclosure side panels 0.250 thick (1/4")

Cab, sub-frame shall be a welded assembly, fabricated of 6063 structural aluminum alloy. This frame shall extend the full length and width of the cab and be secured to the chassis frame through two (2) rear, urethane, self centering load cushions, two (2) forward pivot brackets, and two (2) cab locks. The cab shall be of entirely welded construction.

The front cab wall shall be of double wall type construction, featuring an inner and outer panel. {No Exceptions}

CRASH TESTING

QTY: 1

To ensure the safety of the cab occupants and cab integrity, proof of third party testing shall be provided.

The cab shall be certified for SAEJ2422 side impact, SAEJ2420 with ECER29 cab front impact, and ECER29 cab roof strength.

Furthermore, proof of testing and certification shall be provided that the cab, in accordance to SAE J2420 was front impact tested at 2.1 times the standard energy required in SAE J2420, thus exceeding the NFPA requirement.

This test shall be performed with no support immediately behind the cab, thus providing an authentic test result.

CAB LENGTH

QTY: 1

Minimum Cab Dimensions:

- Overall width 100"
- Inside width of ceiling 92"
- Front area floor to ceiling 59-3/4"
- Top of front seat to ceiling 42" (depending upon seat type)
- Seat back to steering wheel 21-1/4" (depending upon seat type)
- Inside width (door to engine enclosure) 27-1/2" (driver's side, at the floor)
- Inside width (door to engine enclosure) 24" (officer's side, at the floor)
- Crew seat area width 92"
- Front cab floor to top of engine enclosure 27"
- Front cab floor to top of center dash 36-1/4"
- Outer crew seat risers to rear wall 41-1/2"
- Centerline axle to rear wall 59-1/2"

Glass Area Dimensions:

- Windshield (Contour) 3,422 sq. in.
- Side door window, retractable 625 sq. in. each
- Side fixed crew windows 550 sq. in. each

CAB ROOF

QTY: 1

Cab Entry Door Height Dimensions:

- Forward door opening 76" high
- Rear door opening 86" high

The roof will be a split level design with radius edges for an aesthetic, streamline appearance. The roof shall be constructed with the same material as the main structure and be internally reinforced using framing which shall span the entire width and length of the cab for maximum structural integrity. This shall allow the roof to support personnel and roof mounted equipment without the need for additional reinforcement. The cab roof over the rear crew area shall be raised ten (10) inches higher than the front driver and officer area. The front face of the raised roof section shall be sloped at a 45 degree angle, creating a streamlined interface with the standard, lower, forward roof section. The forward section of the raised roof shall be notch to accommodate the roof mount air conditioning system. This design shall allow for additional interior height in the rear crew area. The rear crew area doors shall be "Vista-Style", extending full height to the radius edge of the raised roof.

Approximate dimensions:

- Crew area floor to ceiling 64"

Top of crew seat to ceiling 45" (depending upon seat type)

ALUMINUM TREAD PLATE OVERLAY ON CAB ROOF

QTY: 1

A bright finish aluminum tread plate overlay shall be placed on the cab roof.

This overlay shall be placed on the raised roof section, or if a flat roof cab is being utilized, from the area of the "B" post area-rearward, and extending back to the end of the cab roof.

This tread plate overlay shall be sealed with caulking around the edges to prevent moisture from entering the area between the cab roof and the overlay.

CAB ROOF DRIP RAIL 96" PREDATOR SS - SEALED

QTY: 1

For enhanced protection from inclement weather, a drip rail shall be furnished on the sides of the cab.

The drip rail shall be constructed of bright polished extruded aluminum, and be fastened to the sides of the cab roof edge.

The cab drip rail shall extend the full length of the cab roof to the front radius of the cab.

The entire drip rail shall be sealed using caulking, adhesive or other suitable alternative to prevent leaking and water dripping into the cab.

CAST ANTI-SLIP ENTRY STEPS

QTY: 1

The front entrance steps shall be a minimum of 9" deep.

Each step shall be a cast aluminum, open grate style step fabricated by Cast Products Inc. with a polished aluminum outer surface.

The cab step risers shall be overlaid with .063" polished aluminum tread plate.

The rear entrance steps shall be a minimum of 9" deep.

Each step shall be a cast aluminum, open grate style step fabricated by Cast Products Inc. with a polished aluminum outer surface.

The cab step risers shall be overlaid with .063" polished aluminum tread plate.

BATTERY ACCESS DOORS

QTY: 1

The battery access door(s) shall be 1/8" aluminum tread plate, drop down doors with thumb latches at each side rear cab step well.

CAB DOORS

QTY: 1

Four (4) side-opening doors shall be provided. The cab doors shall be shortened to the floorboard level thus leaving an exposed step well area at each cab entrance. The cab doors shall be totally constructed of aluminum with an extruded aluminum frame and an aluminum outer door skin. The forward cab door opening shall be a minimum of 37" wide and the rear cab door opening shall be a minimum of 37" wide. The rearward cab doors shall have a radius cutout allowing the door opening to protrude forward over the cab wheel well, while providing full access to the rear crew area. There shall be a heavy duty, piano type,

stainless steel hinge on each door of a minimum pin diameter of 3/8". Hinges shall be slotted for ease of horizontal and vertical adjustment. There shall be a cab door seal and the doors shall close flush with the side of the cab. A heavy duty 6" wide belting material shall be utilized to prevent the cab doors from opening greater than 90 degrees.

PREDATOR SS DOOR LATCHES, HD CASTED LATCH - BARRIE

QTY: 1

Heavy-duty, bright finish cast paddle latches shall be provided on the interior and exterior of each cab door. Door latch mechanisms which utilize spring steel clamps shall not be considered due to their tendency to both rust and break. The interior door latch cables are to be designed to reduce adjustment or possible wear at the adjustment turnbuckles.

Note: The paddle latches on the inside of the rear crew doors will be installed so that the latch hinges toward the rear cab seats and will be much easier for a firefighter seated in the rear forward facing seats to operate.

CAB DOOR INSULATION

QTY: 1

A 1/4" insulation panel shall be installed in each cab door. This insulation panel shall provide an additional acoustical barrier as well as help with heating/cooling properties of the apparatus.

HIDDEN WEATHER STRIP

QTY: 1

The cab doors shall be equipped with a weather strip seal track on the lower portion of the door. Bolt-on tracks shall be provided to allow for a snap-on replaceable weather stripping to be changed easily and shall be fastened in place with nutserts to ensure longevity.

KEY MODEL #751

QTY: 1

The specified door lock cylinder/s shall be equipped with #751 key/s.

ELECTRIC WINDOWS, FOUR (4) DOORS, MFD, X-MFD, LFD

QTY: 1

Each side cab door shall have a tinted retractable window. The window track shall be designed into the door frame extrusion, which shall be extruded with a track groove to house a window track and seal. The window shall be capable of being removed from an access slot designed in the bottom of the door frame.

All side cab doors shall be equipped with electrically operated windows.

The driver shall have a control to operate the officer's side window and the rear cab windows, located on the driver's door panel. The officer side window control shall be on the officer's door panel.

The control for each rear door shall be a rocker type automotive style switch located on the inside door panel within easy reach.

For Clarification: The electric window controls shall match GSO 10588.

DOOR LOCKS

QTY: 1

Each exterior cab door shall be equipped with keyed locks.

The cab doors shall be capable of being locked from the outside with a key and manually from the inside or with a momentary switch that shall either lock or unlock the doors.

A switch shall be provided on both the driver and officer side of the cab dash.

KEYLESS ENTRY

QTY: 1

A Trimark brand, keyless entry system shall be provided on all cab doors.

This system shall lock the doors by use of the key fob and shall unlock the doors by either the key fob or the touch pads.

The system shall include two (2) "e-PAD", five number lighted touch pads mounted one (1) each side to the rear of each front cab door.

The system shall also incorporate two (2) "e-FOB", 2 button RF transmitters, one (1) RF receiver module and a total of four (4) power door lock actuators.

The driver door shall have a traditional key - lock installed.

DOOR WINDOW TRIM EXTRUSION

QTY: 1

Each side cab door window shall be designed with a custom extruded trim plate, which shall conform to the perimeter of the window opening in each door.

The trim plate shall extend from the edge of the door skin to the window and shall have a silver anodized finish.

CAB DOOR WINDOW SILL PROTECTION

QTY: 1

Brushed stainless steel protection caps shall be provided on each door interior window sill.

The caps shall be fabricated from 18-gauge brushed stainless steel and cover from the window edge down over the sill and meet the inner door panel top edge.

DOOR PANELS

QTY: 1

The cab door interior panels shall be covered with a brushed stainless steel panel, at full height.

The panel shall be 16 gauge stainless steel with a brushed finish and shall be designed to allow easy access to the inner door.

INNER DOOR PANEL TO BE THREE (3) PIECE DESIGN

QTY: 1

The inner door panel shall be designed as a three (3) piece panel to allow easy access to the door latching mechanism, electrical components or the window mechanism without disassembling the entire door.

SCOTCHLITE INTERIOR OF DOOR PANELS

QTY: 1

Each interior cab door panel shall be equipped with reflective ScotchLite material that shall cover at least 96 in.

WINDSHIELD

QTY: 1

A two piece, symmetrical, safety glass windshield shall be provided on the cab for the driver and officer providing a clear viewing area.

The windshields shall be full width to the center of the front cab support for each side and provide the occupants with a panoramic view.

To provide enhanced peripheral vision on each side of the cab, the windshield and cab structure shall be designed with radius corners, which provide a minimum of 8" of glass area, measured from the glass face to the side edge near the door post.

The windshield shall consist of three (3) layers; the outer light, the middle safety laminate and the inner light.

The thick outer light layer shall provide superior chip resistance, the middle safety laminate layer shall prevent the windshield glass pieces from detaching in the event of breakage and the inner light shall provide yet another chip resistant layer.

The windshield will be a contour design with 3244 sq. in. of area for improved visibility and style.

The windshield glass shall be designed so it can be used on either the driver or officer side.

Single piece windshields that utilize epoxy or that are bonded to the cab structure shall not be acceptable.

WINDSHIELD WIPERS & WASHERS

QTY: 1

Dual, electric operated, pantographic type windshield wipers shall be provided.

One (1) electric drive motor shall be provided for each wiper.

Wipers shall have "HI/LO" and "INTERMITTENT" operating speeds. "HI/LO" speeds shall be controlled by a steering column control, within the turn signal control stem.

"INTERMITTENT" operation shall be controlled by a twist switch within the control on the steering column.

The wipers shall be of the self-parking type.

Windshield washers shall be electric operated wet-arm type with a 1/2 gallon washer fluid reservoir, mounted behind a hinged access door in the officer side front cab step well area. The fluid level shall be visible through a cutout in the access door. This door shall be secured with two thumb latches.

The washer control shall be integral with the intermittent wiper control switch.

There shall be individual removable panels on the front face of the cab for access to the wiper motor assemblies.

Windshield wipers shall survive testing in excess of 3 million cycles in accordance with section 6.2 of SAE J198 "Windshield Wiper Systems – Trucks, Buses and Multipurpose Vehicles".

The bidder shall certify that the wiper system design has been "Third party tested" and that the wiper system has met this criteria.

SIDE VIEWING WINDOWS

QTY: 1

A fixed, tinted window with 620 sq. in of glass area shall be provided on each side of the cab behind the forward cab doors.

This window will be the same height as the window in the rear cab door for maximum visibility.

DARK TINT WINDOWS

QTY: 1

The windshield and the forward cab door glass shall be provided with standard DOT, green automotive tint.

If provided, the side cab windows to the rear of the front doors, the rear cab door windows, and any rear viewing windows shall be equipped with a dark, automotive tint.

CAB GRAB RAILS EXTERIOR

QTY: 1

1-1/4" diameter x 28" long, knurled bright anodized aluminum handrails shall be provided.

There will be one (1) at each cab door entrance.

Grab rail stanchions shall be chrome plated and offset when necessary to prevent "hand-pinching" when opening or closing the doors.

Formed rubber gaskets shall be provided between each stanchion base and the cab surface.

CAB GRAB HANDLES, INTERIOR

QTY: 1

Grab rails shall be provided to assist in entry and exiting of the cab. Each grab rail shall be a cast aluminum "D" style handle that shall have a wheelabrated finish and shall be located in the following locations:

- One (1) 11" long, horizontally mounted on each front cab door on the interior door panel
- One (1) 11" long, horizontally mounted on each rear cab door on the interior door panel

PREDATOR SS INTERIOR GRAB HANDLES - WHEELABRATED

QTY: 1

Grab rails shall be provided to assist in entry and exiting of the cab. Each grab rail shall be a cast aluminum "D" style handle that shall have a wheelabrated finish and shall be located in the following locations:

- One (1) 11" long, vertical mounted on each front cab door on the interior door panel

Note: FD to supply photos for exact mounting location.

INTERIOR A & C POST GRAB HANDLES-BALL-BURNISHED

QTY: 1

Four (4) 12" long, vertically mounted, one (1) each side cab interior on the "A" post, and one (1) each side of the cab interior on the "C" post in the crew area.

Note: The officer's side "A" post grab handle shall match the driver's side "A" post grab handle location. The handle needs to clear the MDC.

INTERIOR GRAB RAILS-REAR CREW DOORS-BALL-BURNISHED

QTY: 1

One (1), horizontally mounted, on each rear cab door, located at the same height as the window in the lowered position.

INTERIOR GRAB RAILS-REAR CREW DOOR WINDOW OPENING

QTY: 1

One (1) vertical grab rail will be provided on the interior of each rear cab crew door. The grab rail will extend the full height of the window opening toward the forward portion of the door.

FRONT CAB GRILLE - SQUARE POLISHED STAINLESS STEEL

QTY: 1

A square mirror finished stainless steel grille shall be installed to allow for maximum air flow to the charge air cooler and the radiator.

The bottom screw on each side of the grill will be through-bolted to the cab structure. Nut-serts will not be used.

SIDE CAB GRILLES

QTY: 1

Two (2) rectangle, mirror finished stainless steel air inlets/outlets shall be provided horizontally above the wheel well opening, one on each side of the cab.

The grilles shall be equipped with a mesh screen to serve as a secondary ember separator.

The design shall permit proper ducting of air through the engine compartment and cooling system.

This system shall be such that particles larger than .039 inches (1 mm) in diameter cannot reach the air filter element.

CAB EXTERIOR REAR WALL

QTY: 1

A bright finish aluminum tread plate overlay shall be provided over the entire exterior rear cab wall.

The tread plate overlay shall be sealed with caulking around the edges to prevent moisture from getting between the cab and the overlay.

CAB WHEEL WELL LINERS - ALUMINUM

QTY: 1

The front cab, wheel wells shall be equipped with fully removable bolt-in aluminum inner wheel well liners.

The liners shall extend full depth into the truck frame.

The completely washable wheel well liners shall be designed to protect the cab substructure, inner panels, and other miscellaneous installed components from road salts, debris, dirt accumulation and corrosion.

ALUMINUM CAB FENDERETTES

QTY: 1

The cab wheel well openings shall be trimmed with replaceable, bolt-in, polished aluminum fenderettes.

The fenderettes shall be secured to the cab with stainless steel, threaded fasteners along the internal perimeter of the wheel well.

Dissimilar metal tape and black vinyl trim molding shall be used where the cab and fender meet.

FRONT MUD FLAPS

QTY: 1

Heavy duty, black rubber type mud flaps shall be provided behind the front wheels. **The mud flaps shall be plain with NO LOGO'S.**

CAB MIRRORS

QTY: 1

Two (2) Lang-Mekra 300 Series Aero style mirror assemblies shall be furnished, one on each front cab door.

Each mirror assembly will have a 14-3/8 x 7-1/4 shatterproof, flat glass head mounted in a 15 x 8 chrome plated housing and a 7-3/4 x 5-7/8 shatterproof, convex head mounted in its own 8-1/2 x 6-5/8 chrome plated housing.

Each mirror housing shall have a field replaceable back cover.

Each head will be electrically heated and motorized with controls on the driver's lower wing panel.

The upper, flat glass portion shall be electrically controlled from the drivers seating position and the lower convex sections shall be manually adjustable.

The mirror heads shall be installed on a one piece, break away style, stainless steel loop mounted to the forward portion of the door with two (2) brackets forward of the windows.

MIRROR CONTROL

QTY: 1

In addition to the switches on the driver's lower wing panel, the mirror position and heat (if applicable) controls shall be programmed into the multiplex control screen.

DOOR WIDTH, X-MFD, LFD & X-LFD - 100" SS

QTY: 1

Cab Entry Door Width Dimensions:

- Forward door opening 37" wide
- Rear door opening 37" wide

Cab Entry Step Dimensions:

- Forward door recessed step 29 3/4" wide x 8-1/2" deep
- Rear door recessed step 25 3/4" wide x 8-1/2" deep

INTERIOR TRIM- GRAY VINYL

QTY: 1

The cab interior shall be constructed to create an ergonomically designed interior to be user friendly and functional for the driver and officer.

The forward overhead panel shall be a fabricated module, which shall have six (6), 3" diameter, adjustable, windshield defroster/heat vents and four (4) comfort vents.

All interior upholstery panels shall be gray in color.

The upholstered cab overhead and side wall portions shall utilize vinyl upholstery with padding underneath to provide additional insulation.

INTERIOR CAB WALL GRAY VINYL

QTY: 1

The interior rear wall of the cab shall be covered with gray vinyl for durability and shall match the other upholstered areas of the cab.

CAB FLOORING

QTY: 1

The floor of the driver's compartment and the floor of the crew area shall be lined with Baryfol vinyl composite flooring to comply with NFPA noise and heat requirements.

ACOUSTICAL INSULATION

QTY: 1

One (1) inch thick acoustical insulation shall be provided on the cab roof, rear and side walls of the cab.

This material shall be fitted between the cab structural members and secured with adhesive to provide an insulation barrier for noise and heat.

MOUNTING PLATE ON REAR OF ENGINE ENCLOSURE

QTY: 1

One (1) 26.5" wide x 8.5" high 3/16" aluminum mounting plate will be provided and centered on the rear of the lower vertical surface of the engine enclosure. The plate will be painted textured gray to match the interior of the cab. Four (4) mounting holes will be provided in the corners 2" x 2" in from each edge. The mounting screws will be counter sunk to allow for flush mounting of the customer mounted mounting brackets. The plate will be spaced off the rear of the enclosure 1/4".

BRUSHED S/S SCUFF PLATES FOR SHOULDER BELT RETRACT

QTY: 1

A brushed stainless steel scuff plate shall be provided on the "B" and "C" posts, in the area of the shoulder belt retractors.

ENGINE ENCLOSURE MATERIAL

QTY: 1

The forward portion of the engine enclosure shall be covered with a vinyl material formed overlay to match the balance of the cab interior. This vinyl overlay shall provide superior cab insulation against noise as well as improved heating and air conditioning performance. The vinyl layer shall then be overlaid with formed aluminum panels which shall be coated with Line-X to provide a rugged surface for this high wear area. Note: Cab interiors which feature the base aluminum structure painted with high impact resistant paint are not acceptable, the vinyl layer is required between the base structure and the impact panels to provide desired interior conditions. There will be no exceptions.

To allow maximum "elbow room" for the driver and officer, the forward portion of the engine enclosure shall feature a contour shape. The engine enclosure shall not significantly obstruct the driver's vision in any direction. The enclosure shall be an integral part of the cab structure, which shall be constructed from material providing adequate strength to support radio, map boxes, etc. The engine enclosure shall be insulated to protect from heat and sound. The noise insulation shall keep the DBA level within the limits stated in the current NFPA series 1901 pamphlet.

ENGINE ENCLOSURE ACCESS

QTY: 1

A composite, hinged access door shall be provided in the top rearward portion of the engine enclosure. The door shall allow access to the engine oil, transmission fluid, power steering fluid level dipsticks. The access door shall be provided with a flush mounted latch. The underside of the access door shall be insulated.

HD SOUNDPROOFING/ INSULATION PACKAGE UNDER ENGINE

QTY: 1

The underside of the engine enclosure shall be overlaid with Milcut, MilShield insulation. MilShield can withstand temperatures up to 1300°F. To ensure a clean, smooth surface, this material shall have a heavy aluminum foil covering and shall be retained by aluminum panels fastened to the cab structure as needed. Any gaps in this insulation barrier shall be sealed with 3M #425 aluminized high temperature tape.

HD SOUNDPROOFING/ INSULATION PACKAGE UNDER FLOORS

QTY: 1

The underside of the front and rear cab floors shall be overlaid with Milcut, MilShield insulation. MilShield can withstand temperatures up to 1300°F. To ensure a clean, smooth surface, this material shall have a heavy aluminum foil covering and shall be retained by aluminum panels fastened to the cab structure as needed. Any gaps in this insulation barrier shall be sealed with 3M #425 aluminized high temperature tape.

HD SOUNDPROOFING/INSULATION BETWEEN UPHOLSTERY

QTY: 1

To further reduce the noise and heat levels inside the cab, 1/4" foam upholstery material shall be installed on all interior surfaces of the engine enclosure, below the upholstery material.

DIAMONDETTE SCUFF PLATES ON ENGINE ENCLOSURE - REA

QTY: 1

An aluminum diamondette scuff plate shall be provided on the vertical surface of the rear engine enclosure. The scuff plate will "roll over" the top edge of the horizontal portion of the engine enclosure to protect the corner. The scuff plate will have a 2" return on the top horizontal surface.

ENGINE ENCLOSURE MOUNTING PANEL

QTY: 1

A 3/16" thickness brushed aluminum panel with 1" radius corners shall be provided and installed in the center - forward area of the engine enclosure.

The panel shall be as large as practical and shall include four (4) 1" high spacers raising the panel above the enclosure outline.

BRUSHED S/S SCUFF PLATES DS

QTY: 1

A brushed stainless steel scuff plate shall be provided on the vertical surface of the driver side engine enclosure.

The scuff plates shall extend a minimum of 6" above the floor.

BRUSHED S/S SCUFF PLATES OS

QTY: 1

A brushed stainless steel scuff plate shall be provided on the vertical surface of the officer side engine enclosure.

The scuff plates shall extend a minimum of 6" above the floor.

STORAGE COMPARTMENTS BETWEEN REAR SEATS

QTY: 1

Two (2) storage modules located between the three forward facing crew seats will be provided. There will be one (1) fixed shelf sixteen (16) inches from the floor with a one (1) inch upward return (lip) at the front. The lower section will also have a one (1) inch upward return (lip) to prevent items from sliding out while driving.

The module will be fabricated from 1/8" smooth aluminum and painted to match the cab interior color. Approximate dimensions: 25.75"H x 8"W x 20"D. This design will match what was provided in the previous Corona, CA apparatus,

TREADPLATE SCUFF PLATES REAR

QTY: 1

An aluminum diamondette scuff plate shall be provided on the vertical surface of the rear engine enclosure.

The scuff plates shall extend a minimum of 6" above the floor.

STORAGE COMPARTMENT - OFFICER SIDE DASH

QTY: 1

A storage compartment will be provided in front of the officer below the upper flat dash. The compartment will be formed using aluminum and have a horizontally hinged drop down door. The door will be held closed by a paddle latch. Approximate size of this compartment is maximum width x 4" high x 6" deep.

SUN VISORS

QTY: 1

To provide maximum protection for the driver and officer, two (2) padded vinyl sun visors shall be mounted in the cab overhead on each side.

DRIVER SIDE RAISED ROOF CABINET

QTY: 1

A storage cabinet shall be mounted, on the rear side of the raised roof in the cab, near the ceiling. The cabinet shall be provided from the driver side wall inboard to the HVAC plenum and shall be as high as the raised roof and as deep as possible to optimize space. The cabinet shall have a horizontally hinged aluminum door with a gas shock stay arm to retain equipment when the apparatus is in motion. The cabinet construction shall be of 1/8" (.125") thickness smooth aluminum and finish painted to match the interior cab paint.

OFFICER SIDE RAISED ROOF CABINET

QTY: 1

A storage cabinet shall be mounted, on the rear side of the raised roof in the cab, near the ceiling. The cabinet shall be provided from the officer side wall inboard to the HVAC plenum and shall be as high as the raised roof and as deep as possible to optimize space. The cabinet shall have a horizontally hinged aluminum door with a gas shock stay arm to retain equipment when the apparatus is in motion. The cabinet construction shall be of 1/8" (.125") thickness smooth aluminum and finish painted to match the interior cab paint.

OVERHEAD PANEL

QTY: 1

An overhead console with a removable pewter panel shall be provided on the cab roof between the driver and officer to permit installation of cab stereo, intercom systems, arrow stick controls, etc.

The overhead console shall not obstruct the driver's vision through the officer's side window.

SEAT AND SEAT BELT ANCHOR TESTING

QTY: 1

Each seat belt anchor shall be tested to withstand 3,000lbs of pull on both the lap and shoulder belt in accordance with FMVSS 210 section 4.2.

Each seat mounting position shall be tested to withstand 20G's of force in accordance with FMVSS 207 section 4.2(c).

Both tests shall be performed and verified at a third party testing and evaluation center.

STORAGE COMPARTMENTS UNDER FRONT SEATS

QTY: 1

There shall be a compartment provided under each front seat.

Each compartment shall be accessible from the front of the seat riser when the door is opened.

DRIVERS SEAT, VALOR AIR SUSPENSION, ABTS

QTY: 1

The driver's seat shall be a Valor, air suspension, race back bucket ABTS LH seat.

The seat shall have a contoured and padded seat cushion with adjustable lumbar support.

The seat shall have a horizontal, slide adjustment and a vertical height adjustment with an adjustable back recline.

The seat air suspension shall be pneumatically controlled from a switch on the forward, lower edge of the seat.

The seat shall be equipped with a red, integrated, 3-point shoulder harness with a lap belt, and a dual retractor belt configuration.

It should have ready reach built into the seat assembly.

OFFICERS SEAT, VALOR - AIR SUSPENSION, ABTS

QTY: 1

The officer's seat shall be a Valor air suspension, ABTS RH, bucket seat.

The seat shall have a contoured and padded seat cushion with adjustable lumbar support.

The seat shall have a horizontal slide adjustment and a vertical height adjustment with adjustable back recline.

The seat air suspension shall be pneumatically controlled from a switch on the forward, lower edge of the seat.

The seat shall be equipped with a red, integrated, 3-point shoulder harness with lap belt, and a dual retractor belt configuration with ready reach built into the seat assembly.

(2) - VALOR BUCKET ABTS FORWARD FACING, CENTER

QTY: 1

Two (2) center inboard forward facing crew seats shall be provided. Each seat shall be a Valor ABTS bucket seat. The seats shall have a contoured and padded seat cushion.

The seats shall be equipped with a red integrated 3-point shoulder harness with lap belt, and a dual retractor belt configuration with ready reach built into the seat assembly.

FLIP UP SEAT, FORWARD FACING, (2) CENTER

QTY: 1

The two (2) center inboard forward facing crew seats shall have a flip-up style seat.

FORWARD FACING SEAT RISERS

QTY: 1

The three (3) forward facing seats, {will/shall} each be mounted on a aluminum riser that {will/shall} be mounted on the driver, center and officer positions of the cab. The risers {will/shall} match the interior of the cab and {will/shall} be open on all sides.

SEAT ADJUSTMENT NOTICE

QTY: 1

If equipped, adjustable seats may be limited by outside factors such as optional installed equipment (ie. ems compartments, battery chargers, SCBA cylinder brackets) and seat placement.

SEAT RECLINE

QTY: 1

There shall levers/handles installed to allow the recline feature of the rear crew seats so they can be adjusted. Confirm that stops are installed to keep the seatbelt retractors from making contact with the rear cab face windows

VALOR SEATING MATERIAL - BLACK CORDURA

QTY: 1

The seats shall be upholstered with Black Cordura material with black stitching as provided by Valor.

VEHICLE DATA RECORDER

QTY: 1

A Class 1 Vehicle Data Recorder (VDR) system shall be provided.

The system shall include an NFPA compliant, "Black Box" with reporting software that shall be capable of data storage to coincide with the NFPA requirements.

Data storage capabilities shall include interfaces with the following systems:

- Display module (Master Optical Warning Device)
- VDR, date time stamp
- Max Vehicle speed (MPH)
- Vehicle acceleration / deceleration (MPH/Sec.)
- Engine Speed (RPM)
- ABS event
- Data password protected
- Data sampled once per second, in 48-hour loop
- Data sampled min by min for 100 engine hours
- Throttle position (% of Throttle)
- Data software
- PC / Mac Compatible
- Data summary reports

The VDR data shall be downloadable by USB cable to a computer using either Microsoft or Apple operating systems.

SEAT BELT WARNING SYSTEM

QTY: 1

The apparatus shall be equipped with a Class 1, seat belt warning system.

The system shall consist of a seat belt module and shall display the seating positions through the main, UltraView screen.

SEATBELT DELAY

QTY: 1

The seat belt warning system will have a 5-second delay programmed into the system.

FOUR (4) SEATING POSITIONS

QTY: 1

Seat belt and seat cushion sensors shall be provided on the four (4) specified seating positions.

SEAT BELT EXTENDERS

QTY: 1

Seat belt extenders shall be provided for all seating positions.

DELETE - 4FRONT - FRONTAL AIR BAG SYSTEM

QTY: 1

GEAR HOOKS CAB INTERIOR

QTY: 1

Six (6) gear hooks will be provided and mounted in the cab above the fixed cab windows, three (3) each side. The outer gear hooks will be mounted above the outer edge of the window, the middle hook will be centered between the outer hooks. The hooks will be mounted to an aluminum panel to accommodate both mounting holes in the hook to keep the hooks from twisting. The panel will be finish painted to match the interior of the cab. The panel with the three (3) hooks will be mounted to the cab interior above the fixed window. The upholstered panel will be mounted on top of the panel with the hooks attached to provide a finished look.

** Reference photo available - utilize BOTH mounting holes in hooks to prevent the hooks from swinging back and forth. **

AIR PACK STORAGE DRIVER SIDE

QTY: 1

In lieu of the rear facing driver side seat there will be a storage area for gear and one (1) complete SCBA. One (1) SmartDock Gen II bracket will be provided and mounted. The seat base riser will be covered in tread-plate.

A two-sided vertical divider will be provided between the bracket and the engine enclosure that continues behind the driver's seat. The outboard wall (below the fixed side window) will have a Pac-Trac panel installed for the mounting of equipment by the fire department after delivery. The Pac-Trac panel will extend from the door opening to the rear of the front seat and from the top of the seat riser to the bottom edge of the fixed window.

The dimensions for the SCBA mounting will be 13.50" on the short leg, 23.75" on the long leg and 26.13" across the front. The overall height will be 23" on the short leg and across the front. The panel height will reduce to 14" in the outer corner and the long leg. The inside panel rear edge will be mounted flush with the rear edge of the engine enclosure. The material will be 1/4" aluminum with a lip along the top edge to provide additional rigidity. The angle for the SCBA bracket will be attached to the floor and the side wall of storage enclosure as high as possible.

The SCBA storage area to the rear of the driver and officers seating area will be adjusted to match the 100" wide cab. Reference GSO 11146 for the previously utilized design.

AIR PACK STORAGE OFFICER SIDE

QTY: 1

In lieu of the rear facing driver side seat there will be a storage area for gear and one (1) complete SCBA. One (1) SmartDock Gen II bracket will be provided and mounted. The seat base riser will be covered in tread-plate.

A two-sided vertical divider will be provided between the bracket and the engine enclosure that continues behind the driver's seat. The outboard wall (below the fixed side window) will have a Pac-Trac panel installed for the mounting of equipment by the fire department after delivery. The Pac-Trac panel will extend from the door opening to the rear of the front seat and from the top of the seat riser to the bottom edge of the fixed window.

The dimensions for the SCBA mounting will be 13.50" on the short leg, 23.75" on the long leg and 26.13" across the front. The overall height will be 23" on the short leg and across the front. The panel height will reduce to 14" in the outer corner and the long leg. The inside panel rear edge will be mounted flush with the rear edge of the engine enclosure. The material will be 1/4" aluminum with a lip along the top edge to provide additional rigidity. The angle for the SCBA bracket will be attached to the floor and the side wall of storage enclosure as high as possible.

The SCBA storage area to the rear of the driver and officers seating area will be adjusted to match the 100" wide cab. Reference GSO 11146 for the design of this area.

CAB EMS COMPARTMENT

QTY: 1

A full height, EMS compartment shall be mounted against the rear wall of the cab crew area. The compartment shall be approximately 20" deep x full height (depending on roof height) x 30" wide.

The compartment shall be constructed of smooth aluminum and shall be equipped with an Amdor roll-up door. The compartment shall be painted with textured paint, matching the interior color of the cab.

Amdor LED lighting shall be provided and built into both sides of the roll-up door tracks.

Two (2) adjustable shelves shall be provided. Shelving shall be constructed of 3/16" brush finish aluminum with a 2" upward bend at front and rear, and side supports. Shelving shall be vertically adjustable with spring nuts in aluminum strut channel.

LIGHTING

QTY: 1

The EMS compartment shall be equipped with A Amdor, LED interior light(s).

The lighting shall be wired to automatically activate when the compartment door is open and the master battery switch is in the "on" position.

LIGHTING

QTY: 1

The EMS compartment shall be equipped with the noted quantity Amdor LED interior light(s). The lighting shall be wired to automatically activate when the compartment door is open and the master battery switch is in the "on" position.

LIGHTING

QTY: 1

The EMS compartment shall be equipped with the noted quantity Amdor LED interior light(s). The lighting shall be wired to automatically activate when the compartment door is open and the master battery switch is in the "on" position.

CAB DOOR BOOK STORAGE

QTY: 1

Two (2) storage modules will be provided, one on the interior of each forward cab door. They will be fabricated from 1/8" smooth aluminum and texture painted, dark gray. These will match the previous Corons, CA units.

LAPTOP COMPUTER SLIDE OUT TRAY - OFFICER SIDE DASH

QTY: 1

A custom slide out computer tray will be provided. The tray will mount flat on top of the officer side dash. The laptop area will be 14" wide with 2" side lips. The front and back will be open. A gas shock will be provided on the underside to hold the tray in the open and closed position.

DRINK HOLDER - CREW AREA

QTY: 1

A single drink holder(s) shall be installed on the rear of the engine enclosure, convenient to the crew.

DRINK HOLDERS - CREW AREA

QTY: 1

Two (2) single drink holders shall be installed on the top, rear of the crew seat storage modules, one each side. The cutout for the drink will match the cut-out for the drink holder in the engine enclosure map box. The cup holders will be painted to match the cab interior.

OFFICER FOLD DOWN FOOT REST

QTY: 1

A fold down foot rest shall be provided on the firewall electrical access panel, in front of the officer's seating position.

The foot rest shall be designed with a 14" wide x 3" deep foot rest plate.

COMPUTER TERMINAL IN FRONT OF OFFICER

QTY: 1

There shall be a flat working surface area in front of the officer.

CAB DOGHOUSE STORAGE MODULE

QTY: 1

A storage module shall be installed on the center doghouse area between the driver and officer.

The module shall be constructed of 1/8" aluminum and shall be painted to match the cab interior.

The module shall include two (2) cup holders, a flat open storage area for notebooks, six (6) divided storage area's for 3-ring binders, and two (2) slide in storage area's one (1) accessible from each side of the cab.

HEATER/DEFROSTER & ACCESSORIES

QTY: 1

A climate-control system shall be provided for total cab environmental comfort as well as provide heat, cooling and defrost capabilities to various areas in the cab.

The system shall consist of a single evaporator unit, mounted in the center overhead of the cab.

The ceiling mounted external evaporator/heater unit shall include the following:

- Heavy-duty, high output blower.
- High efficiency coil that includes "rifled" tubing and oversized header tubes for maximum refrigerant distribution.
- Four (4) 2" diameter, adjustable louvers; two (2) each side of the cab overhead, facing the driver and officer seat positions.
- Six (6) larger louvers evenly spaced, forward of the overhead assembly, facing the windshield.
- Multi-vent defroster louvers positioned above the windshield will provide adequate airflow for windshield defrost.
- Four (4) lower vents shall be provided, one (1) below the driver and officer seat positions and one (1) under each outboard rear facing crew seat.
- Twelve (12) vents shall be provided on the HVAC unit for crew comfort.
- Damper controls shall be pneumatically operated to provide air discharge to the windshield, front overhead air discharge louvers as required.
- An adjustable electric water valve to control the amount of heat.
- Housing shall be fully insulated and enclosed.
- BTU: 69,000 A/C
- BTU: 72,100 Heat

- CFM: 680 Heat as mounted in the cab
- CFM: 680 A/C as mounted in the cab

The ceiling mounted evaporator unit/s shall be designed with an ergonomically designed cover to provide maximum headroom and a pleasing appearance with a crinkle coat texture and include a deep well condensate collection pan, which shall be drained by a gravity system into the rear corners of the engine compartment utilizing stainless steel drain poles.

Evaporator units shall be mounted on the cab roof, enclosed by aluminum panels painted white. The evaporator louvers and controls shall penetrate the cab roof into occupant compartments to the least extent practicable. Evaporator units shall be mounted on the cab ceiling, enclosed by a black painted aluminum cover.

A serviceable foam intake filter shall be installed on the rear of the evaporator.

All defrost/heating systems will be plumbed with one (1) seasonal shut-off valve mounted in the officer side wheel well area.

A 12-volt roof top dual condenser shall be mounted on the cab roof. The condenser shall be designed with high performance, long life fan assemblies with sealed housings and shaft. The condenser and coil design shall include rifled tubing for maximum efficiency. Each coil shall be painted black. The condenser unit must include a receiver drier with a high and low pressure switch. The wire harness shall include necessary wiring for the clutch circuit as well as a separate power relay circuit.

Mounting design shall enable easy servicing of all components and unit replacement if necessary.

The system shall utilize one (1) Valeo TM-31 HD engine mounted compressor driven by a Poly "V" serpentine belt installed in accordance with the manufacturer's requirements. The system shall use R134a refrigerant. The air conditioner lines shall be EATON GH001 EverCool SAE J2064 Type E hose secured using EATON E-Z Clip system components.

Air conditioning hoses shall be #10 hose for discharge and #12 hose for suction with steel hose and end fittings provided at the compressor. The heater hose installation shall not incorporate a copper tube manifold.

The air conditioning system shall be configured to only operate when the vehicle's engine is running. The blowers, in both evaporators, shall be in operation whenever the air conditioning system is activated.

Heater-defroster shall have a three-speed electric fan with illuminated controls. The controls system shall actuate the air-distribution system with air cylinders, which are to be separated from the air brake system by an 85-90 psi pressure protection valve.

The 12-volt system for the air conditioners shall have first priority to be load managed.

The heater/defroster unit shall clear the windshield in half-the-time required by SAE standards.

PAINT ROOF MOUNTED CONDENSOR

QTY: 1

The roof mounted, air conditioning, condenser housing(s) shall be painted to match the cab roof color.

HVAC CONTROLS

QTY: 1

HVAC controls shall be provided on the driver's overhead wing panel, consisting of a mode selector control, front fan speed, rear fan speed, air conditioning on/off and temperature range selection.

The controls shall be clearly labeled, adequately backlit.

The multiplex system control screen shall also contain all controls for the cab HVAC control system.

CAB TILT SYSTEM

QTY: 1

A hydraulic cab lift system shall be provided, consisting of an electric-powered hydraulic pump, fluid reservoir, dual lift cylinders, remote cab lift controls and all necessary hoses and valves.

The cab tilt mechanism shall be custom designed for ease of maintenance and consist of two (2) hydraulic cylinders connect to the cab and the frame assembly.

Hydraulic lines shall be rated at 20,000 PSI burst pressure.

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

Hydraulic cylinders shall be detachable to allow removal of the engine for major service.

A remote cable operated mechanical cylinder stay bar and release shall be provided to insure a positive lock in the tilted position.

The two (2) rear cab latches shall be of the hydraulic pressure release, automatic re-latching type and provide an automatic positive lock when the cab is lowered.

The tilt pump shall be electric over hydraulic type, with a pressure rating of not less than 4,000 PSI. Additionally, the cab tilt device shall be both electrically and hydraulically interlocked to prevent inadvertent activation of the cab tilt system.

- A "CAB NOT LATCHED" indicator shall be provided in the cab dash-warning cluster.
- A dual switch control system shall be provided for the cab tilt, located on the passenger side of the vehicle or on the optional tether control. System shall consist of two (2) position toggle switch along with a rubber covered push button momentary switch, which must be activated for the cab to raise or lower.

CAB TILT HYDRAULIC FLUID DATA LABEL

QTY: 1

A fluid data label will be provided and located in the area of the cab tilt hydraulic fluid reservoir. The label will indicate the total amount of fluid held in the reservoir.

MANUAL CAB TILT

QTY: 1

An auxiliary, manual cab, lift backup system shall be furnished inside the passenger side of the pump enclosure or front compartment for use in the event of total electrical shutdown.

The removable handle shall be provided as loose equipment.

CAB TILT AUDIBLE ALARM

QTY: 1

An audible alarm shall be provided to alert the operator when the cab is being raised or lowered.

SECONDARY SAFETY LOCK

QTY: 1

A secondary, swing down, safety bar shall be applied to the driver side cab tilt cylinder with a manual lock to engage the lock, as required for extended service operations.

CAB LIFTING EYELETS

QTY: 1

The cab shall be capable of tilting to a 90-degree angle, with the assistance of an overhead hoist, to facilitate unobstructed removal of the engine and/or radiator.

The manufacturer shall provide attachment points to safely facilitate, tilting the cab to a 90-degree angle.

The rear cab, lifting eyelets shall be located at the upper portion of the rear cab sheet metal and attached to the upper cab, cross brace.

PARKING BRAKE/CAB TILT INTERLOCK

QTY: 1

The cab tilt control shall be equipped with an interlock.

This shall disable the cab tilt system in the event the parking brake is not applied.

FRAME ASSEMBLY

QTY: 1

The chassis frame shall be assembled in its entirety at the manufacturer's facility. This will prevent any split responsibility in warranty or service.

The frame shall consist of two (2) channels, fastened together by cross members. All structural fasteners used in the frame shall be Grade 8 hardware. Hardened, steel washers shall be used under all bolt heads and nuts to avoid stress concentrations. Top flange shall be free of bolt heads. All spring hangers shall be machined, steel castings. Frame assemblies that are welded or assembled with Huck type fasteners are not acceptable.

Each main frame rail shall be 10-1/4" x 4" x 3/8", fabricated from Domex 110,000 PSI minimum yield steel, with a minimum section modulus of 18.396 cu in., and a resisting bending moment (RBM) of 2,023,560 inch pounds. Frames are built for the specific apparatus under construction so that no unnecessary holes or modifications are made to the frame assembly.

A full length, inner frame liner shall be installed. Total section modulus of each rail, with liner, shall be 33.555 cu in and the total resisting bending moment (RBM) shall be a minimum of 3,691,050 in-lbs, per rail. A third, inner frame liner shall be provided between the front and rear axle spring hangers. Total section modulus of each rail, with both liners, shall be 42.180 cu in and the total resisting bending moment (RBM) shall be 4,639,800 in-lbs, per rail.

The chassis frame assembly, consisting of frame rails, cross members, axles, and steering gear(s), shall be finish painted before installation of any electrical wiring, fuel system components, or air system components. All components or brackets fastened to the frame rails shall be cleaned, primed, and painted prior to being attached to the frame rails.

FRONT BUMPER

QTY: 1

A 12" high, 101" wide, two (2) ribbed, bright finish, stainless steel, front bumper shall be provided.

The bumper shall be a wrapped design to match the contour of the front cab sheet.

FRONT BUMPER EXTENSION

QTY: 1

The bumper shall be extended 10" with a polished aluminum, tread plate, gravel shield enclosing the top and ends.

WINCH RECEIVER POINT - FRONT OF CHASSIS

QTY: 1

A 2" square receiver point shall be provided below the front bumper for a portable winch.

The receiver point shall be a 2 1/2" x 2 1/2" x 1/4" seamless steel tube welded and gusseted to 3" x 1 1/2" steel channel directly bolted to the chassis frame rails.

A 12v electrical connection with a quick disconnect compatible with the port-able winch shall be provided adjacent to the receiver point.

A plastic end cap shall be provided for the quick disconnect.

TOW EYES

QTY: 1

Two (2) front chrome plate steel tow eyes shall be fastened directly to the bumper support structure that extends above the bumper through the aluminum tread plate gravel shield.

The tow eyes shall be fastened with grade 8 bolts and nuts.

FRONT AXLE

QTY: 1

The Steertek NXT front axle beam shall be rated to carry 22,000 lbs. and consist of a fabricated box cross section construction with 100ksi plate and a continuous beam architecture to minimize stress points for added durability.

The axle shall incorporate a removable kingpin feature for ease of kingpin serviceability. The knuckles shall allow for compatibility with disc brakes mounted at the 12 o'clock position and with drum brakes, and allow for wheel cut up to 45 degrees. They shall also utilize premium kingpin bushings and seals to provide enhanced protection from the elements to improve bushing life. Oil seals with viewing window shall be provided.

The suspension shall consist of multi-leaf parabolic springs rated at 22,000 lbs with double wrapped front eye that are packaged within an integrated clamp group that allows for ease of OEM assembly on to the axle beam and reduced part count. The clamp group bolts are tightened on the top of the clamp group opposed to the traditional U-bolt on the bottom making it easier to access with a torque wrench for servicing. The spring shall also include a lower shock attachment with an upturned eye. The springs will contain threaded pin bushings to allow simplification of spring alignment as well as long service life and improved ride quality. The suspension and spring geometry will be optimized to provide improved bump steer and Ackermann. Two ZF Sachs twin-tube shocks shall be provided with the front suspension assembly. The shocks shall be specially developed for parabolic leaf springs with a digressive characteristic curve using a patented piston system. The shocks shall feature multi-stage piston and base valves. The combination of valves shall achieve the desired damping characteristics that are ideal for the application.

Meritor EX-225 H, 17" disc brakes shall be provided for the front axle.

The front brakes shall be full air actuated with automatic, slack adjustment.

STEERING SYSTEM

QTY: 1

A dual power steering system shall be provided utilizing a Sheppard model #M110 main steering gear on the driver side of the chassis and a Sheppard model #M90 steering gear on the officer side of the chassis.

The power steering gear on the officer side of the chassis shall increase performance in turning the officer side wheel assembly, reducing loads and forces on the main gear and components.

The steering system shall be designed to maximize the turning capabilities of the front axle no matter the rating and tire size.

The use of a power assist cylinder on the officer side of the chassis is NOT ACCEPTABLE on front axles of this capacity.

The system shall be designed utilizing an engine driven hydraulic pump, with a maximum operating pressure of 2000 PSI.

Steering system components shall be mounted in accordance with the steering gear manufacturer's instructions.

STEERING COLUMN

QTY: 1

The steering column shall be a "Douglas Autotech" tilt and telescope column.

A lever mounted on the side of the column shall control the tilt and telescope features.

The steering shaft from the column to the miter box shall have a rubber boot to cover the shaft slip and a second rubber boot to seal the passage hole in the floor.

There shall be a ergonomically designed, self-canceling lever, that shall control the following functions:

- Left and right turn signals
- High beam activation
- Two speed with intermittent windshield wiper control
- Windshield washer control

18" STEERING WHEEL

QTY: 1

The steering wheel shall be a four (4) spoke, vinyl padded, minimum 18" diameter, with a center hub mounted horn button.

REAR AXLE

QTY: 1

Rear axle assembly shall be a tandem, Meritor RT-46-160 single reduction with a capacity of 48,000 lbs.

Axles shall have a gear reduction as required.

A driver controlled, Inter-Axle Differential Lock (IAD), shall allow drive shaft torque to be split equally between both rear axles.

The IAD can be used at all speeds and for long periods depending on weather conditions such as rain or snow.

This feature shall be disengaged during normal driving.

An electric over air-operated switch and an indicator light shall be provided in the cab dash.

Oil seals shall be provided as standard equipment.

REAR BRAKES

QTY: 1

Brakes shall be "S" Cam, 16-1/2" x 8 5/8" size and shall be full air actuated with automatic, slack adjusters.

VEHICLE TOP SPEED NFPA STATEMENT

QTY: 1

The rear axle/s (will/shall) be geared for a vehicle top speed in accordance with NFPA sections 4.15.2 and 4.15.3.

Units with GVWR over 26,000 pounds (will/shall) be limited to 68 mph. If the combined tank capacity is over 1250 gallons of foam and water or the GVWR is over 50,000 pounds, the vehicle top speed (will/shall) be limited to 60 mph or the fire service rating of the tires, whichever is lower.

REAR SUSPENSION

QTY: 1

A Hendrickson, "FIREMAAX" model #FMX-482, air ride suspension shall be provided for the tandem rear axle.

The suspension shall have a weight rating equal to the rear axle weight rating up to 48,000 pounds.

48,000 TANDEM REAR AXLE - 22.5 X 8.25

QTY: 1

FRONT WHEELS

QTY: 1

The front wheels shall be 22.5" x 12.25" ten stud, hub piloted, polished aluminum disc type.

FRONT TIRES

QTY: 1

The front tires shall be Michelin 425/65R22.5, "20 Ply", tubeless, radial XFE, wide base highway tread. The tires shall be fire service rated up to 24,396 lbs and shall have a top speed of 65 mph when inflated to 120 psi.

REAR WHEELS

QTY: 1

The tandem, rear axle wheels shall be 22.5" x 8.25" ten stud, hub piloted, polished aluminum, disc type.

REAR TIRES

QTY: 1

The rear tires shall be Michelin 11R22.5, "16 Ply", tubeless, radial, XZE2, highway tread.

The tires shall be fire service rated up to 51,400 lbs and shall have a top speed of 75 mph when inflated to 120 psi.

TIRE PRESSURE MONITORING

QTY: 1

A Pressure Pro PLS-100, tire pressure monitoring system shall be provided.

The system shall monitor low air pressure, high air pressure, and temperature on all ten (10) vehicle tires.

A Pressure Pro PLS-850K extended antenna with cable shall be provided to enhance monitoring accuracy of all tires.

AIR BRAKE SYSTEM

QTY: 1

A dual circuit, air operated braking system, meeting the design and performance requirements of FMVSS -121 and the operating test requirements of NFPA 1901 current edition shall be installed.

It shall be direct air type with dual air treadle in the cab. The system shall be powered by an engine mounted, gear driven air compressor protected by a heated air dryer.

The compressor discharge shall be plumbed with stainless steel braided hose lines with a Teflon lining.

All air lines shall be secured with non-conductive, corrosion resistant strapping mounted with standoff fasteners.

Cord reinforced rubber hose lines shall be installed from a bulkhead in the the frame rails to brake chambers.

The air system shall provide a rapid air build-up feature and low-pressure protection valve with light and buzzer, designed to meet the requirements of NFPA 1901, current edition.

ABS SYSTEM

QTY: 1

An Anti-Skid Braking System (ABS) shall be provided to improve braking control and reduce stopping distance. This braking system shall be fitted to all of the axles. All electrical connections shall be environmentally sealed, water, weatherproof, and vibration resistant.

The system shall constantly monitor wheel behavior during braking. Sensors on each wheel shall transmit wheel speed data to an electronic processor which shall sense approaching wheel lock causing instant brake pressure modulation up to 5 times per second in order to prevent wheel lockup. Each wheel shall be individually controlled.

To improve service trouble shooting, provisions in the system for an optional diagnostic tester shall be provided. The system shall test itself each time the vehicle is started. A dash-mounted light shall go out once the vehicle has attained 4 mph after successful ABS start-up. A warning light shall signal malfunction to the operator. The system shall consist of a wheel mounted toothed ring, sensor, sensor clip, electronic control unit and solenoid control valve. The sensor clip shall hold the sensor in close proximity to the toothed ring.

The system shall also control application of the auxiliary engine exhaust or drive line brakes to prevent wheel lock.

ELECTRONIC STABILITY CONTROL

QTY: 1

An Electronic Stability Control (4 or 6 Channel) shall be provided as part of the Standard ABS system. The Electronic Stability Control system is capable of recognizing and assisting in both rollover and vehicle-under and over-steer situations through advanced monitoring of vehicle parameters and automatic and selective application of the chassis brakes. The ESC system monitors the vehicle response to turning and braking and adjusts or modulates the brake pressure at the wheel end to slow the vehicle in roll control, stabilize the vehicle when under or over steering, and modulate brake pressure when excessive wheel slip, or wheel lockup is detected. By these actions, the ESC system helps to maintain the vehicle's lateral and roll stability at all times, and improves braking and steer ability during heavy brake applications and during braking on slippery surfaces.

To further improve vehicle drive characteristics the unit shall be fitted with automatic traction control (ATC). This system shall control drive wheel slip during acceleration from a resting point. An extra, solenoid valve shall be added to the ABS system.

The system shall control the engine and brakes to ensure efficient acceleration.

The system shall be equipped with a dash-mounted light that shall come on when ATC is controlling drive wheel slip.

The system shall also include an "off road traction" dash mounted switch that will allow the operator to momentarily allow for more wheel slip when the unit is in deep mud or snow.

TELMA DRIVELINE RETARDER

QTY: 1

A Telma electromagnetic, air cooled drive line retarder shall be furnished installed within the drive line of the apparatus.

The retarder shall be independently mounted to the chassis frame rails and positioned to provide proper drive line angles and ease in maintenance on the drive line.

The retarder shall be sized to the maximum G.V.W.R. of the vehicle.

The system shall have an on/off switch and an indicator light on the dash.

The retarder shall automatically disengage when the vehicle is not in motion.

Activation of the retarder shall illuminate the vehicle brakes lights.

The Telma retarder shall be equipped with an electronic interface to deactivate the retarder anytime the ABS system is activated.

AIR RESERVOIRS

QTY: 1

There shall be a minimum of four (4) air reservoirs and be installed in conformance with best automotive practices.

An additional 1127 cu. in. air reservoir shall be provided for an air manifold.

Reservoir capacity total shall be a minimum of 8300 cu. in.

A pressure protection valve shall be installed to prevent the use of air horns or other air operated devices should the air system pressure drop below 80 psi (552 kPa).

The air reservoirs shall be color coded to match the air lines for easy identification, maintenance, and troubleshooting.

The reservoirs shall be painted the following colors:

- Wet Tank Black
- Primary Tank Green
- Secondary Tank Blue
- Auxiliary Tank(s) Yellow
- Secondary Tandem Green 2400 cu. in.

AUTOMATIC MOISTURE EJECTORS - ALL TANKS

QTY: 1

There shall be Haldex automatic moisture ejectors on all air tanks.

1/4 TURN DRAIN VALVES SIDE OF BODY

QTY: 1

For ease of daily maintenance, each air system reservoir shall be equipped with a brass 1/4 turn drain valve.

The brass, quarter turn, air tank drains shall be remotely mounted to the side of the body on a labeled panel just forward of rear wheel for ease of maintenance.

HEATED AIR DRYER

QTY: 1

A Bendix AD-IS heated air dryer system shall be furnished. The function of the AD-IS dryer reservoir module (DRM) is to provide an integrated vehicle air dryer, secondary reservoir, purge reservoir, governor, and a number of the charging valve components in a module. The DRM dryer module includes an integrated solution air dryer (AD-IS), a reservoir including a separate purge reservoir section, a governor, and four pressure protection valves which have been designed as an integrated, air supply system.

The function of the AD-IS air dryer is to collect and remove air system contaminants in solid, liquid and vapor form before they enter the brake system. It provides clean, dry air to the components of the brake system which increases the life of the system and reduces maintenance costs. Daily, manual, draining of the reservoirs is eliminated. The function of the pressure protection valves is to both control the order in which the components receive air from the AD-IS air dryer, as well as to protect each reservoir from a pressure loss in the other reservoir or a pressure loss in an air accessory.

An automatic, moisture ejector on the primary or wet tank shall also be furnished.

COLOR CODED BRAKE LINES

QTY: 1

The entire chassis air system shall be plumbed utilizing reinforced, Synflex air lines, which shall be equipped with quick release type fittings.

All of the airlines shall be color coded to correspond with an air system schematic and shall be adequately protected from heat and chafing.

WABCO AIR COMPRESSOR

QTY: 1

Air compressor shall be a Wabco brand, with a minimum of 18.7 cubic feet per minute capacity on L9 X15 models and 25.9 cubic feet per minute on X12 models.

Air brake system shall be the quick build up type.

The air compressor discharge line shall be stainless steel braid reinforced Teflon hose.

The chassis air system shall meet NFPA 1901, latest edition for rapid air pressure build-up within sixty (60) seconds from a completely discharged air system.

This system shall provide sufficient air pressure so that the apparatus has no brake drag and is able to stop under the intended operating conditions following the sixty (60) seconds build-up time.

BRAKE TREADLE VALVE

QTY: 1

A Bendix dual brake treadle valve shall be mounted on the floor in front of the driver.

The brake control shall be positioned to provide unobstructed access and comfort for the driver.

PARKING BRAKE CONTROL

QTY: 1

Parking brake shall be of the spring-actuated type, mounted on the rear axle brake chambers. A red, indicator light shall be provided in the driver dash panel that shall illuminate when the parking brake is applied.

The parking brake will be equipped with all-wheel lock-up.

The parking brake control shall be mounted on the driver lower wing panel.

ENGINE

QTY: 1

Engine shall be a Cummins, Model X12 500, diesel, turbo-charged, per the following specifications.:

- Max. Horsepower 500 HP @ 1700 RPM
- Governed Speed 2000 RPM
- Peak Torque 1695 lb. ft. @ 1000 RPM
- Cylinders Six (6)
- Operating Cycles Four (4)
- Bore Stroke 5.2 x 5.67 in.
- Displacement 720 cu. in.
- Compression Ratio 16.8:1
- Governor Type Limiting Speed

Engine oil filters shall be engine manufacturers branded or approved equal.

Engine oil filters shall be accessible for ease of service and replacement.

ENGINE IQA CERTIFICATION - X12

QTY: 1

The Cummins X12 engine shall be certified by Cummins Power Systems for installation in the manufacturer's custom chassis.

SECONDARY BRAKING

QTY: 1

An engine compression brake shall be furnished for increased braking capabilities.

Controls shall be as provided by the engine manufacturer and shall be activated by releasing the throttle pedal to the idle position.

The engine compression brake shall have dash mounted control switches to turn the brake on or off as well as to control the operational level of the brake.

The engine brake shall be wired in such a manner so as to illuminate the chassis brake lights when the engine brake is engaged and operating.

The engine brake shall be interlocked with the PTO operation and shall automatically disengage any time the apparatus is operating with the PTO active.

ENGINE AIR CLEANER

QTY: 1

An engine air cleaner shall be provided. The air cleaner shall include a dry type element and shall be installed in accordance with the engine manufacturer's recommendations.

The air cleaner shall be located to the rear of the engine, with streamline air pipes and hump hose connections from the inlet to the air cleaner and from the air cleaner to the turbo.

The air cleaner shall be easily accessible when the cab is tilted.

The air cleaner shall be plumbed to the air intake system that shall include a self sealing connection between the cab and air cleaner assembly to allow the cab to be tilted.

To draw fresh clean air, the intake for the air cleaner shall be on the side of the cab on the driver's side.

The inlet shall be a minimum of 41" above the ground to allow the vehicle to navigate through water without any part of the air intake system being below the frame rail, preventing any type of water intake. There will be no exceptions.

EMBER SEPARATOR

QTY: 1

An ember separator shall be installed in the chassis air intake system.

The ember separator housing must be easily accessible when the cab is tilted.

ACCELERATOR PEDAL - FLOOR MOUNT

QTY: 1

A floor mount accelerator pedal shall be installed on the floor in front of the driver.

The pedal shall be positioned for comfort with ample space for fire boots and adequate clearance from the brake pedal control.

REMOTE THROTTLE & INTERLOCK HARNESS

QTY: 1

An apparatus interface wiring harness for the engine shall be supplied with the chassis. If applicable, separate circuits shall be included for pump controls, "Pump Engaged" and "OK to Pump" indicator lights, open compartment ground, start signal, park brake ground, ignition signal, master power, customer ignition, air horn solenoid switch, high idle switch and high idle indication light.

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

COOLING SYSTEM

QTY: 1

Radiator shall be brass with bolted steel top and bottom tanks. The cooling system shall be designed for a maximum of fifteen (15) PSI operation. There shall be a sight glass in the radiator to check the coolant level without removing the radiator cap. The core construction shall be tube and fin with three (3) tube rows, 273 total core tubes, and fourteen (14) fins per inch. Extended life engine coolant shall provide anti-freeze protection to -30° F. The mixture shall be per the engine manufacture's specifications. Core area be a minimum of 1375 square inches (39 H x 35.25W).

COOLING SYSTEM CRITERIA

QTY: 1

The engine cooling system shall be certified by the engine manufacturer to meet cooling index requirements for a minimum ambient temperature or 110-degrees Fahrenheit.

TRANSMISSION COOLER

QTY: 1

A shell and tube transmission oil cooler shall be provided using engine coolant to control the transmission oil temperature.

The cooler shall have an aluminum shell and copper tubes.

The cooler shall be assembled using pressed in rubber tube sheets to mechanically create a reliable seal between the coolant and the oil.

No brazed, soldered, or welded connections shall be used to separate the coolant from the oil.

RADIATOR CROSS MEMBER

QTY: 1

The radiator installation shall include a radiator cross member for additional strength and durability.

This cross member shall be designed so the angle of approach is not affected.

HEAVY DUTY RADIATOR SKID PLATE

QTY: 1

The radiator installation shall include a heavy-duty radiator skid plate to protect the radiator from debris or obstructions under the chassis.

The skid plate shall be designed so the angle of approach is not effected.

This skid plate design shall include wire cover wing plates for additional protection to wires and hoses on each side of the radiator assembly.

The skid plate shall be painted to match the chassis.

CHARGED AIR COOLER (FRONT MOUNT)

QTY: 1

The charge air cooler shall be constructed of aluminum with cast aluminum side tanks.

The cooler shall have a frontal core size of 957 square inches, seven (7) fins per inch, and forty eight (48) core tubes.

The charge air cooler shall be mounted directly ahead of the radiator and to the radiator headers.

Rubber isolators shall be used at the mounting points to reduce transmission of vibrations.

The connections between the engine and charged air cooler, shall be made using high temperature silicone hoses rated for use in temperature up to 500°F, and heavy duty constant tension T-Bolt spring hose clamps.

ENGINE FAN

QTY: 1

The engine cooling system shall incorporate a heavy-duty fan, installed on the engine and include a shroud.

The fan shall be equipped with an air-operated clutch fan, which shall activate at a pre-determined temperature range.

Recirculation shields shall be installed to ensure that air which has passed through the radiator is not drawn through it again.

COOLANT RECOVERY

QTY: 1

A coolant recovery system shall be provided and located near the battery box.

HEATER AND COOLANT HOSES/PIPING

QTY: 1

All coolant piping shall be constructed of appropriate sized, powder coated, steel tubing with 0.06 wall thickness and formed hose barbs. All connections between coolant pipes and chassis components shall be made using appropriately sized silicone hoses or elbows, rated for use in temperatures ranging from - 60F to +350F. The connections will use appropriately sized, constant torque, hose clamps.

These connections shall be minimal in number to reduce the number potential leak points and shall adequately allow for movement of the engine relative to chassis mounted components. All integral hoses supplied with the engine shall be as supplied by the engine manufacturer.

Continental Blue Xtreme blue heater hoses shall be furnished for the heater system. The Blue Xtreme hose shall have a core of black (EPDM) with 2-Spiral Aramid reinforcement and Blue EPDM cover. All heater hoses shall be equipped with constant torque type hose clamps. All integral hoses supplied with the engine shall be as supplied by the engine manufacturer.

Two (2) mechanical shut off valves shall be installed in the area of the right front of the engine to shut down the flow of coolant to the cab heating system.

The hoses running from the engine to the roof will have unions installed near the underside of the cab for future maintenance.

HEATER AND COOLANT SHUT OFF VALVE

QTY: 1

A mechanical shut off valve shall be installed on the engine to shut down the flow of coolant to the cab heating system.

LOW COOLANT INDICATOR

QTY: 1

A low engine coolant indicator light located in the dash instrument panel shall be provided. An audible alarm shall be provided to warn of the low coolant condition.

TRANSMISSION

QTY: 1

An Allison World Transmission, Model 4000 EVS electronically controlled, automatic transmission shall be provided.

Transmission specifications shall be as follows:

- Max. Gross Input Power 600 HP
- Max. Gross Input Torque 1850 lb. ft.
- Input Speed (Range) 1700- 2300 RPM
- Direct Gear (Pumping) 4th (Lock-up)

Transmission installation shall be in accordance with the transmission manufacturer's specification.

The transmission shall be readily and easily removable for repairs or replacement.

One (1) PTO opening shall be provided on both the left and right side of the converter housing (positions one (1) o'clock and eight (8) o'clock).

SIX (6) SPEED AUTOMATIC TRANSMISSION - 4000 SERIES

QTY: 1

The transmission shall be calibrated for six (6) forward gears and one (1) reverse gear.

Each gear shall have the following ratios:

- First 3.51:1
- Second 1.91:1
- Third 1.43:1
- Fourth 1.00:1
- Fifth 0.74:1
- Sixth 0.64:1
- Reverse -4.80:1

ALLISON TRANSMISSIONS TOUCH PAD SHIFTER

QTY: 1

An illuminated, touch-pad type, shift control shall be mounted in the cab on the driver's lower wing panel.

Shift control shall be approved by the transmission manufacturer.

MODE BUTTON PROGRAMING

QTY: 1

The transmission, upon startup, shall select four (4) speed operation. By pressing the "mode" switch on the shift pad (mode on) provides access to the remaining forward gears in the transmission.

TRANSMISSION OIL LEVEL SENSOR

QTY: 1

The transmission shall be equipped with the oil level sensor (OLS); this sensor shall allow the operator to obtain an indication of the fluid level from the shift selector.

The sensor display shall provide the following checks, correct fluid level, low fluid level and high fluid level.

ALLISON PARK TO NEUTRAL

QTY: 1

The transmission, upon application of the parking brake, shall automatically shift into neutral.

ALLISON PRESELECT PROGRAMMING

QTY: 1

The transmission shall have Allison Pre select enabled to automatically downshift when the secondary engine brake is active.

PRESELECT PROGRAMMED FOR 3RD GEAR

QTY: 1

The transmission shall be programmed to automatically downshift to 3rd gear.

This feature shall be enabled/disabled with the main on/off switch for the engine brake.

TES 295 SYNTHETIC TRANS FLUID 4000 EVS

QTY: 1

TES 295 transmission fluid shall be utilized to fill the 4000 EVS transmission.

DRIVE LINES

QTY: 1

Drive lines shall be Dana (Spicer) 1810 heavy duty series or equal, with "glide coat" splines on all slip shafts.

The manufacturer shall utilize an electronic type balancing machine to statically and dynamically balance all drive shafts.

The manufacturer shall provide proof of compliance with all drive shaft manufacturer's standards and specifications. {No Exceptions}

Where applicable, the universal joints shall be the half loop style joints.

DIESEL EXHAUST FLUID LEVEL GAUGE

QTY: 1

Diesel Exhaust Fluid level (E-1/2-F); low fuel level warning @ 1/8 tank

DEF TANK

QTY: 1

A ten (10) gallon diesel exhaust fluid (DEF) tank shall be provided and installed. The tank shall be mounted in the area of the battery box and shall be accessible through a door in the crew area step well.

The tank shall include an internal heater that will be fed by engine coolant directly from the engine block to ensure it is always kept at the proper temperature per EPA requirements. The tank shall include a temperature sensor to control the flow of the engine coolant from the heater valve to the DEF tank.

A DEF fluid level sensor shall be provided with the DEF tank and connected to the level gauge on the dashboard.

EXHAUST SYSTEM

QTY: 1

The exhaust system shall be installed in accordance with the engine manufacturer's requirements and meet all Environmental Protection Agency and State noise level requirements.

Exhaust system components shall be securely mounted and easily removable.

The diesel particulate filter/muffler shall be fabricated from stainless steel and of a size compatible with the engine exhaust discharge.

Exhaust tubing shall be a minimum of 16 gauge stainless steel from the turbocharger on the engine to the inlet of the diesel particulate filter. Any flexible exhaust tubing shall be HDT stainless steel type.

To minimize heat build-up, exhaust tubing within the engine compartment shall be wrapped with an insulating material. Exhaust shall be wrapped from the turbocharger to the entrance of the muffler. Material shall be held in place with worm gear type clamps.

An exhaust diffuser shall be provided to reduce the temperature of the exhaust as it exits the tailpipe.

If the electrical system is hardwired or V-Mux multiplex, separate "regeneration" enable and prohibit switches shall be provided under the dash board on the driver's side. Each switch shall be provided with a spring loaded protective cover and shall be clearly marked as to function. If the electrical system is Class-1 ES-key, the regeneration switches shall be incorporated into the ultra-view screen.

The vehicle shall be equipped with SCR technology that uses a urea based diesel exhaust fluid (DEF) and a catalytic converter to significantly reduce oxides of nitrogen (NOx) emissions.

The SCR system shall reduce levels of NOx (oxides of nitrogen emitted from engines) by injecting small quantities of diesel exhaust fluid (DEF) into the exhaust upstream of a catalyst, where it vaporizes and decomposes to form ammonia and carbon dioxide.

TAILPIPE

QTY: 1

The exhaust tailpipe extending from the SCR catalyst to the side of the vehicle shall be constructed from 16-gauge stainless steel tubing.

The exhaust discharge shall be on the officer side of the apparatus forward of the rear axle.

PLYMOVENT EXHAUST EXTRACTION SYSTEM TAILPIPE ADAPT

QTY: 1

The exhaust outlet shall be a straight pipe, forward of the rear axle. It shall be terminating minimum 6" forward of rear tire, minimum 2.5" below rub rail/body, and flush with outboard of rub rail/body to connect with a Plymovent, ventilation system.

Clarification; The Plymo-vent exhaust system will be the boot style.

FUEL TANK

QTY: 1

Fuel tank shall be a minimum of sixty-five (65) gallon capacity. It shall have a minimum, fuel filler neck of 2" ID and 1/4 turn fill cap. A 1/2" minimum diameter drain plug shall be provided. The tank shall be fabricated from hot rolled, pickled and oiled steel. Provisions for an additional feed line and fuel level float shall be provided for future use. The fuel tank shall be installed behind the rear wheels, between the frame rails. The fuel tank shall meet all FHWA 393.67 requirements including a fill capacity of 95% of tank volume. The fuel tank shall be able to withstand a longitudinal acceleration of -23.0g at 0.166 seconds in accordance to SAE J211 standards using a channel frequency class 600 filter. Testing shall be performed at and verified by a third party testing and evaluation center.

STAINLESS STEEL FUEL TANK STRAPS

QTY: 1

The straps supporting the diesel fuel tank shall be made of Type 304L stainless steel with grade 8, zinc coated steel hardware.

There will be no exceptions.

FUEL TANK MOUNTING STRAP ISOLATION MATERIAL

QTY: 1

The fuel tank mounting straps shall utilize dense rubber between the straps and the fuel tank to prevent chaffing.

FUEL LINES

QTY: 1

Fuel lines shall be an Aeroquip FC332 AQP Series fiber reinforced hose. The lines shall be sized to meet engine manufacture's requirements, and shall be carefully routed and secured along the inside of the frame rails.

DUAL FUEL LINE SHUT-OFF VALVES

QTY: 1

A fuel line shut-off valve shall be provided on both the inlet and outlet side of the primary fuel filter to allow for easy removal of the filter.

The valves shall be labeled "Fuel Shut-Off".

No reserve feature shall be included in the tank.

FUEL TANK SERVICEABILITY PROVISIONS

QTY: 1

An additional eight feet of fuel line shall be provided.

The line shall be coiled and secured above the fuel tank to improve serviceability of the tank.

HEATED FUEL- WATER SEPARATOR

QTY: 1

A Racor 400 series heated fuel filter/water separator shall be provided in the fuel system.

A "water in fuel" indicator shall be provided on the dash.

FUEL PUMP ELECTRIC, REQ. ON 210" W-B OR

QTY: 1

An electric fuel pump for re-priming shall be furnished in the main fuel line.

A labeled control switch shall be provided on the main dash panel.

FUEL POCKET

QTY: 1

A fuel fill shall be provided in the driver side rear wheel well area.

A Signature 4 composite fuel pocket with a brushed stainless steel door shall be provided.

A label indicating "Ultra Low Sulfur Diesel Fuel Only" shall be provided adjacent to the fuel fill.

FUEL LABEL

QTY: 1

A fuel fill label will be located on the inside of the fuel access door.

PUMPER BODY ELECTRICAL

QTY: 1

CHASSIS ELECTRICAL SYSTEM

QTY: 1

All electrical wiring in the chassis shall be GXL cross link insulated type. Wiring is to be color coded and include function codes every three (3) inches on both sides. Wiring harnesses shall be routed in protective, heat resistant loom, securely and neatly installed. Two (2) power distribution centers shall be provided in central locations for greater accessibility. The power distribution centers shall contain thermal automatic reset breakers, power control relays, flashers, diode modules, daytime driving light module, and engine and transmission data links. All breakers and relays shall have a capacity substantially greater than the expected load on the related circuit, thus ensuring long component life. Power distribution centers shall be composed of a system of interlocking plastic modules for ease in custom construction.

The power distribution centers are function oriented. The first is to control major truck function. The second shall control center to overhead switching and interior operations. Each module is single function coded and labeled to aid in troubleshooting. The centers will also have accessory breakers and relays for future installations. All harnesses and power distribution centers shall be electrically tested prior to installation to ensure the highest system reliability.

All external harness interfaces shall be of a triple seal type connection to ensure a proper connection. The cab/chassis and the chassis/body connection points shall be mounted in accessible locations. Complete chassis wiring schematics shall be supplied with the apparatus.

12 VOLT ELECTRICAL SYSTEM TESTING

QTY: 1

The apparatus low voltage electrical system shall be tested and certified by the manufacturer. The certification shall be provided with the apparatus. All tests shall be performed with the air temperature between 0°F and 100°F.

The following three (3) tests shall be performed in order. Before each test, the batteries shall be fully charged.

The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged. The engine shall be shut off and the minimum continuous electrical load shall be activated for 10 minutes. All electrical loads shall be turned off prior to attempting to restart the engine. The battery system shall then be capable of restarting the engine. Failure to restart the engine shall be considered a test failure.

The minimum continuous electrical load shall be activated with the engine running at idle speed. The engine temperature shall be stabilized at normal operating temperature. The battery system shall be tested to detect the presence of battery discharge current. The detection of battery discharge current shall be considered a test failure.

The total continuous electrical load shall be activated with the engine running up to the engine manufacturers governed speed. The test duration shall be a minimum of 2 hours. Activation of the load management system shall be permitted during this test. However, an alarm sounded due to excessive battery discharge, as detected by the system, or a system voltage of fewer than 11.7 volts DC for a 12-volt system, for more than 120 seconds, shall be considered a test failure.

Following completion of the preceding tests, the engine shall be shut off. The total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm is activated.

The battery voltage shall be measured at the battery terminals. With the load still applied, a reading of fewer than 11.7 volts shall be considered a test failure. The battery system shall then be able to restart the engine.

At the time of delivery, documentation shall be provided with the following information:

- Documentation of the electrical system performance test
- A written load analysis of the following;
- Nameplate rating of the alternator
- Alternator rating at idle while meeting the minimum continuous electrical load
- Each component load comprising the minimum continuous electrical load.
- Additional loads that, when added to the minimum continuous load, determine the total connected load.
- Each individual intermittent load.

CHASSIS WIRING INSTALLATION

QTY: 1

The wiring harness contained on the chassis shall be designed to utilize wires of stranded copper or copper alloy of a gauge rated to carry 125% of maximum current for which the circuit is protected without exceeding 10% voltage drop across the circuit. Wiring shall be uniquely identified by color code or circuit

function code, labeled at a minimum of every three (3) inches. The identification of the wiring shall be referenced on a wiring diagram. All wires conform to SAEJ1127 (Battery Cable), SAEJ1128 (Low Tension Primary Cable), SAEJ1560 (Low Tension Thin Wall Primary Cable).

The covering of harnesses shall be moisture resistant loom with a minimum rating of 289° Fahrenheit and a flammability rating of VW-1 as defined in UL62. The covering of jacketed cable shall have a minimum rating of 289° Fahrenheit.

All circuits shall conform to SAEJ2202. All circuits must be provided with low voltage over current protective devices.

All exposed electrical connections will be coated with "Z-Guard" to prevent corrosion.

DIRECT BATTERY GROUNDING STRAP

QTY: 1

Direct grounding straps shall be mounted to the following areas; frame to cab, frame to body and frame to pump enclosure.

All exposed electrical connections shall be coated with "Z-Guard 8000" to prevent corrosion.

EMI/RFI PROTECTION

QTY: 1

The apparatus shall incorporate the latest designs in the electrical system with state of the art components to insure that radiated and conducted electromagnetic interference (EMI) and radio frequency interference (RFI) emissions are suppressed at the source.

EMI/RFI susceptibility is controlled by utilizing components that are fully protected and wiring that utilizes shielding and loop back grounds where required. The apparatus shall be bonded through wire braided ground straps. Relays and solenoids that are suspect to generating spurious electromagnetic radiation are diode protected to prevent transient voltage spikes.

In order to fully prevent the radio frequency interference the purchaser may be requested to provide a listing of the type, power output, and frequencies of all radio and bio medical equipment that is proposed to be used on the apparatus.

SEQUENCER

QTY: 1

A sequencer shall be provided that automatically activates and deactivates vehicle loads in a preset sequence thereby protecting the alternator from power surges. This sequencer operation shall allow a gradual increase or decrease in alternator output, rather than loading or dumping the entire 12 volt load to prolong the life of the alternator.

Emergency light sequencing shall operate in conjunction with the emergency master light switch. When the emergency master switch is activated, the emergency lights shall be activated one by one at half second intervals. Sequenced emergency light switch indicators shall flash while waiting for activation.

When the emergency master switch is deactivated, the sequencer shall deactivate the warning light loads in the reverse order.

CLASS-1 ES-KEY MULTIPLEX ELECT SYSTEM

QTY: 1

A Class 1 ES-Key Electrical Management System shall be utilized on the chassis for all functions applicable.

The system shall consist of the following components:

A Modem with a RS232 computer interface and standard telephone jack used to not only program the multiplex system but also serve as a factory direct gateway into the vehicle from any Class 1 multiplex authorized service facility.

A Universal System Manager (USM), which acts as the main controlling component of the multiplexing system shall be provided and factory programmed to DOT, NFPA, SAE, the manufacturer and {Company} specifications. The programming shall be done by the manufacturer's engineering department.

The ES-Key system installation shall comply with SAE J 551 requirements regarding Electromagnetic and Radio Frequency interference (EMI, RFI), as well as utilize components and wiring practices that insure the system is protected against corrosion, excessive temperatures, water, excessive physical, and vibration damage by any equipment installed on the vehicle at the time of delivery.

A series of Multiplexing Input/Output Modules shall be installed. The Input/Output modules shall permit the multiplexing system to reduce the amount of wiring and components used as compared to non-multiplexed apparatus. These modules shall vary in I/O configuration, be waterproof allowing installation outside of enclosed areas and shall possess individual output internal circuit protection. The modules shall also have three status indicators visible from a service persons vantage point that shall indicate the status of the module. In the event a load requires more than 7.5 AMPS of operating current, the module shall activate a simple relay circuit integral to any of the 3 dillbox assemblies installed in the cab.

Diagnostic software shall be provided to download data from the on board ES-KEY system. This software shall have the ability to view system input/output (I/O) information, and include a connection from a computer to the vehicle.

ADDITIONAL CLASS-1 ES-KEY ULTRAVIEW DISPLAY

QTY: 1

An additional Class 1, UltraView, 700 display shall be provided and installed on the officer side of the cab.

The second display shall have the ability to perform and display all the same functions and information of the main display; located on the driver side of the cab.

AXIS VEHICLE MONITORING SYSTEM

QTY: 1

The apparatus shall be equipped with a smart truck technology system designed specifically for first responder apparatus. The system shall interconnect major apparatus CAN networks including but not limited to the chassis J1939/OBD2 data, vehicle multiplex system, water pump pressure governor, electric valves and electric actuated deck gun. The system shall securely report real-time vehicle information from these systems via cellular data to a globally supported cloud computing service for storage and real time access via web dashboards. The dashboards shall be accessible by the department's computers, tablets and smartphones.

The smart truck technology installed on the apparatus shall provide real-time notification via text or e-mail when a check engine light is displayed. The notification shall include the fault code and brief explanation for the code to reduce down-time.

The system shall feature a truck down feature on the web-based user interface to allow instant notification of needed apparatus service to both the authorized dealership and OEM via text or e-mail.

The system shall provide remote diagnostics of vehicle subsystems such as VMUX, pressure governors, electric monitors and electric valves.

By use of the web based user interface, the system shall allow for over the air programming updates to various subsystems should the need arise.

The web-based user interface shall also provide the following:

- Fuel and DEF levels
- GPS tracking
- Data logging for apparatus multiplex system
- Easy access to the NFPA VDR data

The system shall be designed with an open architecture to incorporate future growth with new technology partners designed to enhance fire ground operations

The vehicle gateway module shall be rugged in construction using a durable cast aluminum enclosure designed for emergency vehicle applications. The module shall have sealed Deutsch connectors providing four (4) CAN network ports, one (1) RS-485 port, one (1) Ethernet RJ45 port, one (1) USB port, embedded cellular modem, Bluetooth and GPS capability. The Core Vehicle Gateway shall be capable of 2 way vehicle telemetry, supporting both remote diagnostics and remote over-the-air software updates.

A low profile cellular antennae shall be installed on the cab roof.

A 5 year data plan shall be provided with the initial vehicle purchase. At the end of the 5 year period the department shall be given the option to extend service.

INTER-LOCK MODULE FOR MULTIPLEX SYSTEM

QTY: 1

A Vocation Module, which is the interface between the multiplexing system and the pump system shall be provided.

This module shall serve as the interface between the operator, engine, transmission and pumping system.

The module shall be installed under the driver's side dash, in a sealed enclosure that shall possess green indicating LEDs that shall indicate to service personnel the interlock state of the apparatus.

In the event of a multiplexing error involving pump operation can be activated to ensure reliable pumping operations at ALL times.

In addition to controlling pump function, this vocation module shall be able to provide automatic and/or manual activation of engine "Fast Idle", to maintain adequate alternator output and thus, chassis voltage.

There will be no exceptions.

ALTERNATOR

QTY: 1

There shall be a Delco Remy Model 55SI, 430 amp brushless, serpentine belt, driven alternator.

The brushless design of the 55SI transfers magnetic fields between the rotor and stator air-gap without brushes.

The alternator installation shall be designed to provide maximum output at engine idle speed, by using Remote Sense in order to meet the minimum continuous electrical load of the apparatus as required.

The alternator shall carry a 3 Year/Unlimited Mile warranty.

BATTERIES

QTY: 1

Six (6) Exide # 31XPD, maintenance free batteries shall be provided.

Each battery shall be rated at 1000 CCA and shall have a reserve capacity of 200 minutes.

Wiring for the batteries shall be 4/0 welding type dual path starting cables for SAEJ541.

BATTERY STORAGE, STEEL

QTY: 1

Batteries shall be securely mounted in fixed 3/16" GR50 steel trays located on each side of the chassis frame.

Complete access shall be provided when the cab is fully tilted.

Batteries shall be mounted on non-corrosive matting material.

The battery tray shall be able to withstand a longitudinal acceleration of -46.5g at 0.246 seconds in accordance to SAE J211 standards using a channel frequency class 600 filter.

Testing shall be performed at and verified by a third party testing and evaluation center.

BATTERY ISOLATORS

QTY: 1

Two (2) Blue Sea #7622100B shall be provided and installed.

**For Clarification: The battery isolators shall be simialr to what was provided on the Orange County TDA's
(Ref: 10549-54 10630)**

COLE HERSEE BATTERY JUMPER STUDS

QTY: 1

A set of Cole Hersee battery jumper studs, model #46210-02 (red) and #46210-03 (black) shall be provided to allow the battery system to be jump started or charged from an external source.

The studs shall be located on the bottom of the battery box on the driver's side of the chassis.

Each stud shall be equipped with both a rubber protector cap and a 2" square non-conductive plate to prevent accidental shorting.

BATTERY DISCONNECT SWITCH

QTY: 1

The chassis batteries shall be wired in parallel to a single 12 volt electrical system, controlled through a heavy duty master disconnect switch.

The master disconnect switch shall be located within easy access of the driver upon entering or exiting the cab.

SHORELINE INLET

QTY: 1

One (1) Kussmaul "Super 30" Auto Eject model 091-159-30-120, automatic, 120 volt, 30 amp shoreline disconnect shall be provided for the on board, 110 volt battery charging systems.

The disconnect shall be equipped with a three pin female receptacle, which shall automatically eject the shoreline when the vehicle starter is energized.

The mating connector shall be included with the auto eject and shall be provided as loose equipment.

A label shall be provided indicating voltage and amperage ratings.

SHORELINE INLET COVER

QTY: 1

The Kussmaul auto-eject connection shall be equipped with a Yellow weatherproof cover.

SHORELINE INLET LOCATION

QTY: 1

The shoreline receptacle shall be located in the driver's cab step well in a pre-determined location by KME.

SHORELINE INLET LABEL

QTY: 1

A shoreline power receptacle information plate shall be permanently affixed at or near the power inlet. The plate shall indicate the following:

- Type of Line Voltage
- Current Rating in Amps Power Inlet Type (DC or AC).

BATTERY CHARGER

QTY: 1

A Kussmaul model # 445-5265-0, EV-40, fully automatic, battery charger shall be provided for maintaining the vehicle battery system.

The charger shall feature Smart circuitry to provide three stages of charging: bulk, absorption, and float.

The charger shall have a battery type selector switch that regulates the proper charge/float voltage.

In addition to the main battery output, the charger shall also have auxiliary, 15 amp, output terminal with a battery saver selector switch to power accessory loads.

Output current of the charger shall be 40 amperes @ 12 volt DC.

BATTERY CHARGER STATUS CENTER

QTY: 1

A Kussmaul Super Auto Eject Deluxe Cover With Bar Graph Display shall be provided.

TRANSFER SWITCH

QTY: 1

An automatic power relay shall be installed to allow interior 120 volt accessories to be powered by the 120 volt shoreline or the generator.

This switch shall allow for a continuous power supply to the interior accessories while the apparatus is parked in the station.

The maximum load for the transfer / relay shall be 20 amps at 120 volts.

BLUE SEA #4365 ACCESSORY PANEL

QTY: 1

A Blue Sea model 4365 accessory panel will be provided. The accessory panel shall include one (1) 12-volt power port, Two (2) dual USB charging ports, along with a power switch with built in circuit breaker.

The accessory panel shall be mounted in the center dash panel.

POWER POINT FOR OS EMS COMPARTMENT

QTY: 1

The officers side EMS compartment shall be equipped with a Blue Sea 5025 power point with power and ground connections conveniently positioned in the upper area inside the compartment, connected directly to the chassis batteries.

EMS COMPARTMENT POWER POINT

QTY: 1

The interior EMS compartment shall be equipped with a Blue Sea 5025 power point capable of 60 amps with power and ground connections conveniently positioned in the upper area inside the compartment, connected directly to the chassis batteries.

POWER POINT FOR DS EMS COMPARTMENT

QTY: 1

The drivers side EMS compartment shall be equipped with a Blue Sea 5025 power point with power and ground connections conveniently positioned in the upper area inside the compartment, connected directly to the chassis batteries.

12 VOLT POWER PORT IN REAR CREW AREA - REAR OF DOG

QTY: 1

Two (2) 12 volt power port accessory outlets {will/shall} be installed on the rear of the engine enclosure for fire department accessory devices. The 12 volt power ports and two (2) specified Blue Sea USB chargers will be mounted in the side of a common box, one (1) USB and one (1) power port in each box. The power ports will be installed on the upper vertical surface of the rear of the engine enclosure in a surface mounted box separated by the center bottom upholstery button. One (1) USB and one (1) power port will be installed in the side of each surface mounted box. The ports in each box will face outboard. The 12 volt power ports will be located below the USB charging ports in the side of the common box and will be wired battery direct.

** A total of TWO (2) surface mounted boxes will be located in the rear crew area for the above power ports. Each box will contain one (1) 12 volt power port and one dual USB charging port **

ROUND USB CHARGING PORTS IN REAR CREW AREA

QTY: 1

Two (2) Blue Sea (1045) fast charge – dual USB socket mount charging port {will/shall} be installed in the cab of the truck for the fire departments accessory devices. Each charger {will/shall} have two (2) USB connections and {will/shall} have a 5 volt, 4.8 amp max output. The USB and specified outer side wall custom cabinet mounted 12 volt power ports will be mounted in a common box, one USB and one (1) power port in each box. The boxes will be located on the outer side of the rear wall custom cabinet. The forward edge of the surface mounted box will be even with the forward edge of the outer forward facing open seat riser. The box will be 1.25" above the cab floor. This will match the customers previous KME apparatus, GSO 10588.

The USB charges located above the 12 volt power port in the side of the common box and will be wired battery direct.

ROUND USB CHARGING PORT IN REAR CREW AREA - REAR O

QTY: 1

Two (2) Blue Sea (1045) fast charge – dual USB socket mount charging port will be installed in the cab of the truck for the fire departments accessory devices. Each charger will have two (2) USB connections and will have a 5 volt, 4.8 amp max output. The USB and specified rear of engine enclosure 12 volt power ports will be mounted in a common box, one USB and one (1) power port in each box. The power ports will be installed on the upper vertical surface of the rear of the engine enclosure in a surface mounted box separated by the center bottom upholstery button. One (1) USB and one (1) power port will be installed in the side of each surface mounted box. The ports in each box will

face outboard.

The USB charging ports will be located below the 12 volt power ports in the side of the common box and will be wired battery direct.

** A total of two (2) surface mounted boxes will be located in the rear crew area for the above power ports. Each box will contain one (1) 12 volt power port and one dual USB charging port **

12 VOLT POWER PORT LOCATED IN REAR EMS COMPARTMENT

QTY: 1

A 12 volt power port accessory outlet(s) shall be installed in the cab of the truck for the fire departments accessory devices.

The port(s) shall be located in the rear EMS compartment, as directed, for devices such as cellular phones.

KUSSMAUL USB CHARGING PORT LOCATED IN REAR EMS COM

QTY: 2

A Kussmaul USB charging port(s) shall be installed in the cab of the truck for the fire departments accessory devices.

Each port shall have two (2) USB connections and shall have a 5 volt, 4.2 amp max output.

The port(s) shall be located in the rear EMS compartment, as directed, for devices such as cellular phones.

POWER AND GROUND STUD FOR ACCESSORIES IN DASH

QTY: 1

One (1) dedicated circuit; 12 volt, 40 Amp, power and ground on 3/8 stud and fused at battery shall be provided in the cab dash.

The circuit shall be for future installation of radios or accessories.

BLUE SEA FUSE BLOCK - 6 CIRCUIT IN REAR CREW AREA

QTY: 2

A Blue Sea 5025B, 6 circuit fuse block, shall be installed. This block has a maximum amperage of 60 Amps per block and 30 Amps per circuit.

Clarification; There should be a total of 2 Blue Sea 6 circuit fuse blocks located in the rear of the cab, one (1) below each of the outboard seats as per photos provided.

BLUE SEA FUSE BLOCK - 12 CIRCUIT BEHIND OFFICER SE

QTY: 1

A Blue Sea 5026B, 12 circuit fuse block, shall be installed behind the officers seat.

This block has a maximum amperage of 60 Amps per block and 30 Amps per circuit.

BLUE SEA #4363 ACCESSORY PANELS - PER DASH DRAWING

QTY: 1

Two (2) Blue Sea model 4363 accessory panels shall be provided and located per the dash drawing Each accessory panel shall include (1) 12-volt power port, (1) dual USB charging ports along with a circuit breaker switch.

IGNITION STUD - REAR OF THE OFFICER'S SEAT

QTY: 1

An ignition stud shall be installed to the rear of the officer's seat for items needing an ignition circuit (ie. mobile radio).

***Note, there will be a total of three studs located to the rear of the officer's seat to be used for two-way radio power. Stud #1 will be 100-amps wired battery direct. Stud #2 will be 30-amps and switched through the ignition switch. Stud #3 will be 100-amps wired direct to chassis ground.**

WHELEN #700 WHITE/RED LED INTERIOR LIGHTS (4)

QTY: 1

Four (4) Whelen # 700 interior LED combination red/white dome lights shall be furnished in the cab, with two (2) in the forward section and two (2) in the rear crew section.

Each dome light shall have an integral selector switch.

Each dome light shall also activate when the respective, adjacent cab door is opened.

DOME LIGHT PROGRAMMING

QTY: 1

The cab dome lights shall be programmed to dimmest setting possible. Red shall be the default color when the cab doors open.

SUNNEX MODEL #SL-9-200,LED MAP LIGHT

QTY: 1

One (1) Sunnex model # SL9-200 B10L, 12 volt LED light designed for direct connection will be furnished and located on the driver side of the center overhead just forward of the angled panel. The light will have a rectangular base with an on/off rocker switch and feature a swivel joint with 360 degree axial rotation and 90 degree angular adjustment.

SUNNEX MODEL #SL-9-200,LED MAP LIGHT

QTY: 1

One (1) Sunnex model # SL9-200 B10L, 12 volt LED light designed for direct connection will be furnished and located at the officer side overhead. The light will have a rectangular base with an on/off rocker switch and feature a swivel joint with 360 degree axial rotation and 90 degree angular adjustment.

ENGINE COMPARTMENT WORK LIGHTS - TECNIQ LED

QTY: 1

Two (2) Tecniq model #E18 LED lights shall be provided inside the engine enclosure that will provide 800 lumens each.

Each light shall have their own independent switch incorporated into the light head.

DASH & CENTER CONSOLE - 100" PREDATOR SS

QTY: 1

Where standard features are controlled through physical switches they will be indicated as such in the appropriate part of this specification. All optional features that are controllable from the cab will be controllable through the display screen.

The dash consoles shall be custom formed overlaid aluminum housings to create an ergonomically designed interior that will be user friendly and functional for the driver and officer.

The cab instruments and controls will be labeled with international symbols and located in the following zones:

- **Driver Gauge Left:** Located to the left of the instrument panel, this zone houses the ignition, engine start, and fast idle switches.

- **Driver Gauge Right:** Located to the right of the instrument panel, this zone houses power take-off and ladder power switches when those features are specified.
- **Driver Knee Left:** Located at the driver's left knee area, this zone is the standard location for pump controls, and for the Engine Emergency Shut-Down when specified.
- **Driver Knee Right:** Located at the driver's right knee area, this zone houses optional chassis related switches such as the Fuel Priming Pump, Engine Fan Override, and ATC Disable.
- **Driver Lower Wing:** Located on the engine tunnel and angled toward the driver, this zone houses the majority of the controls that the driver may need to access while operating. Within the easiest reach of the driver are the park brake, transmission shift, Vehicle Information Display, and any optional retarder controls. Standard switching in this zone includes power window controls, hazard flasher, headlights, marker lights, and mirror adjustment. Also located in this zone will be switching for any optional features that are more likely to be used while driving such as auxiliary brakes, siren brake, drive axle locks, and automatic tire chains.
- **Center Lower:** Located on the engine tunnel between the driver and officer and parallel to the cab front, this zone houses the standard 12 volt sockets and USB chargers. It will also house any optional communications devices that are more likely to be accessed while driving such as an arrowhead controller or a stereo radio.
- **Driver Overhead:** Located in the overhead console directly above and facing the driver, this zone houses tactile switches (when specified) for control of emergency devices such as warning lights, scene lights, dump chute valves, and other emergency related items. If not specified these controls are available through the Vehicle Information Center.
- **Driver Overhead Wing:** Located in the overhead console and angled toward the driver, this zone houses the heating and air conditioning tactile switches provided as standard.
- **Center Overhead:** Located overhead between the driver and officer and parallel to the cab front, this zone houses any communications devices such as siren heads or two-way radios that cannot be fit in the Officer Lower Wing: Located on the engine tunnel and angled toward the officer, this zone houses optional feature switching as specified for control by the officer.
- **Officer Overhead Wing:** Located in the overhead console and angled toward the officer, this zone is houses optional switching or gauges that cannot be located in other zones and that is intended solely for use by the officer.
- **Officer Overhead:** Located in the overhead console directly above and facing the officer, this zone houses optional larger communications equipment that cannot be located in other zones, and that is practical for use solely by the officer.

Exact locations of each switch or control will be dictated by the Dash Layout document created during the design process and will adhere to these guidelines unless otherwise specified.

CAB DASH PANELS

QTY: 1

The apparatus cab shall be outfitted with backlit gradient dash and overhead panels. These gradient panels shall be utilized across the entire front of the cab dash and include the instrument cluster and brow panels. The panels shall be constructed from 3mm aluminum composite panels with second surface screen printed 15 mil Bayfol UV-1 polycarbonate graphic overlays, to provide scratch and UV protection. A carbon-graphite shaded graphic overlay shall be provided.

GPS ANTENNA INSTALLED O.S. CAB ROOF

QTY: 1

One (1) Antennas Plus model AP-CG-A-S11-BL GPS antenna will be installed on the cab roof above the officer seating position. The cable will terminate between the laptop tray area and the "A" post in front of the officer.

CONTROL SWITCHING THROUGH MULTIPLEX TOUCH SCREEN

QTY: 1

Switching for the emergency and auxiliary systems shall be performed through the multiplex control screen.

Switching shall be programmed through various menus that are accessible from the display buttons.

CONTROL SWITCH IN CAB FOR LIGHT ABOVE WINDSHIELD

QTY: 1

A single switch shall be provided in the cab control system to activate the HiViz, FireTech, LED brow light.

CONTROL SWITCHES IN CAB FOR BEHIND FRONT CAB DOOR

QTY: 1

Controls shall be provided in the cab control system (or optional mechanical switch) to turn the lights at the cab doors on and off.

CONTROL SWITCH IN CAB FOR REAR OF BODY LIGHTS

QTY: 1

Controls shall be provided in the cab control system (or optional mechanical switch) to turn the rear of body lights on and off.

CONTROL SWITCH IN CAB FOR DRIVER SIDE OF BODY LIGHTS

QTY: 1

Controls shall be provided in the cab control system (or optional mechanical switch) to turn the driver side of body lights on and off.

CONTROL SWITCH IN CAB FOR OFFICER SIDE OF BODY LIGHTS

QTY: 1

Controls shall be provided in the cab control system (or optional mechanical switch) to turn the officer side of body lights on and off.

ADDITIONAL SWITCHES - DRIVER OVERHEAD

QTY: 1

Twelve switches shall be provided in the driver overhead zone.

DRIVER'S DASHBOARD PANEL, 100" PREDATOR SS

QTY: 1

The main instrument panel shall be centered in front of the driver and shall be mechanically fastened to the main dash assembly. The panel shall contain the primary gauges, an instrument warning light cluster and the ignition and engine start switches.

Each gauge shall be designed with an integral red warning light with a pre-programmed warning point. Gauges monitoring drive-train component status shall be of the direct data bus type capable of displaying information broadcast on the J 1939 data-link.

Each gauge warning indicator shall be capable of activating an audible alarm inside the dashboard.

Additional auxiliary control switches and instruments (if applicable) shall be located within the center or overhead panel located near the driver's position.

DRIVER DASH LCD VIRTUAL DISPLAY

QTY: 1

The main instrument panel shall be centered in front of the driver and shall have a hinged bottom with two ¼ turn latches at the top. The driver panel and all other cab interior dash and overhead panels will be an anti-glare surface.

Contained within this panel will be virtual driver display via a 12.3" LCD screen including but not limited to displaying all gauges and instrument warning light cluster functions. The upper left side of the driver dash panel shall also include an ignition-on switch, fast idle switch and a round engine start button which shall include a lighted indicator on the perimeter to light up when engine is ready to start and turning off when the engine is started.

The driver LCD virtual display shall include:

- 12.3" Color TFT Display
- Stand Alone Architecture
- Automatic Adjustment for Light Conditions
- 3 x BNC Analog Video Input
- Fully Programmable Features w/Graphical HMI:CGI Studio
- Two Year Warranty

The primary gauge display shall consist of:

- Vehicle speedometer, (0-80 mph)
- Engine tachometer, (0-3000 rpm)
- Engine oil pressure, (0-100 psi); low oil warning
- Engine coolant temperature (100-250 °F); high engine temp warning
- Transmission oil temperature (100-350 °F); high transmission fluid temp warning
- Vehicle battery voltage (0-18 VDC); low voltage warning
- Front air system gauge (0-150 psi); low air pressure warning at 65 psi
- Rear air system gauge (0-150 psi); low air pressure warning at 65 psi
- Fuel level (E - 1/2 - F); low fuel level warning
- Diesel Exhaust Fluid (DEF) Level (E-1/2-F)
- Air cleaner restriction gauge (0-40), warning at 25"
- Engine hours as maintained by the engine ECU

Additional auxiliary control switches and instruments (if applicable) shall be located within the dash panel and overhead panel located near the driver's position.

INDICATOR CLUSTER

This display, also contained in the Driver Dash Virtual Display Module, includes the system control unit that collects data from the vehicle data bus (J1939), analog sensors, and switches throughout the vehicle. This data shall be presented using simulated gauges and telltales.

On the Road displays include:

- Odometer, trip information, fuel economy information; all gauge data, and virtually any other data available on the vehicle that the display has access to, either through the data bus or via analog inputs.

The displays that can be accessed when the parking brake is set include:

- "Right And Left Directional" arrows (green in color)
- "Hi Beam" indicator (blue in color)
- "Battery ON" indicator (green in color)
- "Parking Brake ON" indicator (red in color)

- "Check Transmission" indicator (amber in color)
- "Cab Not Latched" indicator (red in color)
- "Stop Engine" indicator (red in color)
- "Check Engine" indicator (amber in color)
- "ABS Warning" indicator (yellow in color)
- "Low Coolant Level" (yellow in color)
- "Water In Fuel" indicator (amber in color)
- "DPF Regeneration" (amber in color)
- "Exhaust High Temperature" (amber in color)
- "Engine Diagnostic Fault" (amber in color)
- "Retarder On" (green in color)

Listed below are indicators that may be included, depending upon the vehicle configuration:

- "Wait To Start" indicator (amber in color)
- "Exhaust System Fault" (amber in color)
- "Topps System Fault" (amber in color)
- "PTO Engaged" (green in color)
- "Ok to Pump" (green in color)
- "Auto Traction Control" (amber in color)

FAST IDLE

QTY: 1

A fast idle for the electronic controlled engine shall be provided.

The fast idle shall be controlled by an ON/OFF switch on the left side of the main gauge panel.

An electronic interlock system shall prevent the fast idle from operating unless the transmission is in "Neutral" and the parking brake is fully engaged.

If the fast idle control is used in conjunction with a specified engine/transmission driven component or accessory, the fast idle control shall be properly interlocked with the engagement of the specified component or accessory.

ADDITIONAL SWITCHES - DRIVER LOWER WING

QTY: 1

Twelve switches shall be provided in the driver lower wing zone.

ENGINE COMPRESSION BRAKE CONTROLS

QTY: 1

Engine brake controls shall be provided on the dash within easy reach of the driver.

CLASS-1 ES-KEY ULTRAVIEW 780 DISPLAY

QTY: 1

A 7 inch full color display shall located on the driver's lower wing panel. The display shall provide key information and control within easy sight and reach.

The screen shall be programmed with the following features:

- Chassis Instrument Display
- Back-up camera

- Seat Occupant Display
- Compartment open display
- HVAC Controls
- Power Mirror Controls
- DPF Filter Regeneration Controls
- Warning light controls
- Scene light controls
- Horn selector switch options
- Gauge back-light dimming
- Rocker switch back-light dimming
- Display screen dimming with day/night feature
- Multiplex system diagnostics
- Generator Controls

CAMERA SYSTEM

QTY: 1

An FRC model SNB100-C00 inView™ 360 Video system shall be provided. This system shall provide the driver with a 360 degree birds-eye style view of the apparatus, along with individual camera views based on determined conditions.

The inView™ 360 system shall include (4) four camera's standard, an Electronic Control Unit (ECU), required harnesses and a manual camera switch. The kit shall provide split video feeds with bird's-eye view and individual camera views. It shall be capable of integrating with an existing vehicle system for an automatic camera view, which seamlessly switches from front/left/right/rear views based on turn signal and reverse activation.

The ECU shall feature built-in recording to record each camera input separately and support (4) four 256GB SD cards (SD card sold separately).

An HD monitor shall be provided mounted on the center cab overhead console near the driver's position.

CAMERA SYSTEM

QTY: 1

One (1) formed aluminum diamond plate shield shall be provided and mounted over the rear view camera to protect it from being damaged.

CUST PUMP/TANK/RES CHASSIS LED MARKER LIGHTS

QTY: 1

DOT MARKER LIGHTS AND REFLECTORS

CAB STEP LIGHTS, TECNIQ EON 3 LED, ALL DEVICES

QTY: 4

Polished, stainless steel, TecNiq Eon, 3-LED, horizontal surface mounted chassis step lights shall be provided and controlled with marker light actuation.

Step lights shall be located to properly illuminate all chassis access steps and walkway areas and shall include a mounting gasket to provide a watertight seal.

ALTERNATE FLASHING HEADLIGHT SYSTEM (WIG-WAGS)

QTY: 1

An alternating flashing wig-wag system, wired to the apparatus headlights, shall be installed.

The alternating flashing headlights will come on with the primary warning lights and will be shed with park brake. An individual switch will not be provided.

The alternating flashing system shall be automatically disabled during the "Blocking Right of Way" mode.

HEADLIGHTS AND MARKER LIGHTS

QTY: 1

The chassis head lights and marker lights shall **NOT** auto activate with battery power up. The lights will only be controlled from their respective switches.

DUAL MODULE W/ CODE 3 65STA LED TURN SIGNAL & REQ

QTY: 1

Two (2) Code 3 65STA arrow shaped, amber LED turn signals shall be provided, one (1) in each side of the dual light module above the headlights.

The NFPA required, Zone "A" lower warning lights shall be incorporated into each side dual light module noted above.

DUAL HEADLIGHTS LED FIRETECH HIVIZ

QTY: 1

Two (2) dual, Firetech HiViz LED headlight modules with a bright finish bezel shall be furnished, one (1) each side, on the front of the cab. Each head light module shall incorporate an individual LED low beam and a LED high beam headlight. High beam actuation shall be controlled on the turn signal lever.

DAYTIME RUNNING LIGHTS

QTY: 1

The chassis head lights shall have integrated circuitry to actuate the low beam headlights whenever the chassis engine is running.

The daytime running lights shall be interlocked with the parking brake.

GOLIGHT #20214 REMOTE LED SPOT LIGHT, DS SIDE CAB

QTY: 1

A Golight model #20214 remote controlled spotlight shall be provided and mounted on the driver side of the cab roof. The Golight spotlight shall be equipped with a LED light and shall be controlled from the cab. The remote control shall be mounted within easy reach of the driver and officers or as directed by the fire department.

The Golight shall have a BLACK housing.

SPOT LIGHT CAB RISER FOR DS SIDE LIGHT

QTY: 1

The driver side cab roof spotlight shall be mounted on an aluminum riser that shall be painted to match the cab color and mounted on the cab roof.

GOLIGHT #20214 REMOTE LED SPOT LIGHT, OS SIDE CAB

QTY: 1

A Golight model # 20214 LED remote controlled spotlight shall be provided and mounted on the officer side of the cab roof. The Golight spotlight shall be equipped with a LED light and shall be controlled from the cab. The remote control shall be mounted within easy reach of the driver and officers or as directed by the fire department.

The Golight shall have a BLACK housing.

SPOT LIGHT CAB RISER FOR OS SIDE LIGHT

QTY: 1

The officer side cab roof spotlight shall be mounted on an aluminum riser that shall be painted to match the cab color and mounted on the cab roof.

HIVIZ FIRETECH 72" BROW LIGHT W/ IML, 285W12V LED,

QTY: 1

One (1) HiViz LEDs "FireTech" Scene light, model FT-B-72-ML-B shall be provided.

The light instrument shall be low in profile with a mounting bracket allowing installation at the top edge of the windshield.

The housing shall be made of a extruded 6061 aluminum; 72" wide and less than 3" tall.

The scene light shall have 57 LEDs divided amongst 3 independent circuits; circuit one featuring 9x 5w LEDs passing light through a 10 degree optic, circuit two featuring 18x 5w LEDs passing light through a 25-40 degree "flood" range, and circuit three featuring 30x 5w LEDs passing light through a 60-90 degree "scene" optic.

Circuit four shall consist of 5 amber colored diodes that act as SAE-J2042 compliant clearance marker and identification lamps.

The circuitry shall feature a PWM LED driver with an onboard electronic thermal manager. Additionally, the bar shall meet CISPR25 EMI requirements.

The light shall operate on 12v DC, generate 28,101 lumens and draw 24 amps. The light shall be adjustable vertically up to 15 degrees.

Mounting shall be possible in any direction while still meeting NFPA 1901 compliance requirements. The housing color shall be Black.

WIRE UPGRADE FOR 12V HIGH AMP LIGHT - (1) BROW LIG

QTY: 1

NFPA COMPLIANT WARNING LIGHT PACKAGE

QTY: 1

The following warning light package shall include all of the minimum warning light and actuation requirements for the current revision of the NFPA 1901 Fire Apparatus Standard.

The lighting as specified shall meet the requirements for both "Clearing Right of Way" and "Blocking Right of Way" which includes disabling all white warning lights when the apparatus is in "Blocking Right of Way" mode.

WARNING LIGHT FLASH PATTERN - NFPA FLASH PATTERN

QTY: 1

All of the perimeter warning lights shall be set to a default NFPA compliant flash pattern as provided by the light manufacturer.

LIGHT PACKAGE ACTUATION/CONTROLS

QTY: 1

The entire warning light package shall be actuated with a single warning light switch located on the cab switch panel. The wiring for the warning light package shall engage all of the lights required for "Clearing Right of Way" mode when the vehicle parking brake is not engaged. An automatic control system shall be provided to switch the warning lights to the "Blocking Right of Way" mode when the vehicle parking brake is engaged.

LIGHT PACKAGE NFPA CERTIFICATION

QTY: 1

The warning light system(s) specified above shall not exceed a combined total amperage draw of 45 AMPS with all lights activated in either the "Clearing Right of Way" or the "Blocking Right of Way"

The warning light system(s) shall be certified by the light system manufacturer(s), to meet all of the requirements in the current revision of the NFPA 1901 Fire Apparatus Standard as noted in the General Requirements section of these specifications.

The NFPA required "Certificate of Compliance" shall be provided with the completed apparatus.

Any large truck as defined by NFPA shall have the lower zone warning lights mounted no higher than 62" to the optical center of the warning light from ground level. {No Exceptions}

LIGHTS BAR

QTY: 1

A Code 3, 21TR80NFPA1 "21TR Series", 80" LED cab roof warning light bar shall be furnished and rigidly mounted on top of the cab roof.

The light bar shall be equipped with the following:

- Clear Lenses
- Four Forward Facing - TRS4 Red LED Modules
- Four Forward Facing - TRS3 Red LED Module
- Four Corner Facing - TRS6 Red LED Modules
- Two Side Facing - TRS3 Red LED Modules

If equipped, the forward facing white lights shall be automatically disabled for the "Blocking Right of Way" mode.

ZONE A WARNING LIGHTS - STEADY BURN IN LIGHTBAR

QTY: 1

C-UPPER, CODE 3 PRIZM II 7X9 SERIES LED

QTY: 1

Two (2) Code 3, 798*BZ-75, PriZm II LED lights, shall be furnished and mounted with one (1) on each side at the rear, upper portion of the apparatus.

UPPER ZONE C WARNING LIGHT LENS - RED

QTY: 1

The upper zone C warning lights shall include red LEDs and a red lens if available from the manufacturer. If a red lens is unavailable, a clear lens shall be included.

UPPER ZONE C WARNING LIGHT BEZEL - CHROME

QTY: 1

The upper zone C warning lights shall include a chrome bezel if available from the manufacturer. If a chrome bezel is unavailable, a black bezel shall be included.

B/D-UPPER FRONT, CODE 3 PRIZM II SERIES 7X9 LED

QTY: 1

Two (2) surface mounted, Code 3, 7912*BZ-75 PriZm II LED light heads shall be furnished and mounted with one (1) on each side on the upper side face, towards the front of the body, facing to each side of the unit.

UPPER ZONE B/D FRT WARNING LIGHT LENS - RED

QTY: 1

The upper zone B/D front warning lights shall include red LEDs and a red lens if available from the manufacturer. If a red lens is unavailable, a clear lens shall be included.

UPPER ZONE B/D FRT WARNING LIGHT BEZEL - CHROME

QTY: 1

The upper zone B/D front warning lights shall include a chrome bezel if available from the manufacturer. If a chrome bezel is unavailable, a black bezel shall be included.

B/D-UPPER REAR, CODE 3 PRIZM II SERIES 7X9 LED

QTY: 1

Two (2) surface mounted, Code 3 7912*BZ-75 PriZm II LED light heads shall be furnished and shall be mounted one with (1) on each side on the upper side face, towards the rear of the body, facing to each side of the unit.

UPPER ZONE B/D REAR WARNING LIGHT LENS - RED

QTY: 1

The upper zone B/D rear warning lights shall include red LEDs and a red lens if available from the manufacturer. If a red lens is unavailable, a clear lens shall be included.

UPPER ZONE B/D REAR WARNING LIGHT BEZEL - CHROME

QTY: 1

The upper zone B/D rear warning lights shall include a chrome bezel if available from the manufacturer. If a chrome bezel is unavailable, a black bezel shall be included.

A-LOWER FRONT MOUNTING, CUSTOM CHASSIS

QTY: 1

The lower Zone A warning lights shall be mounted in the custom chassis headlight bezels.

A-LOWER FRONT, CODE 3 65 SERIES LED

QTY: 1

Two (2) Code 3, 65BZ* LED light heads shall be provided and installed with one (1) on each side.

LOWER ZONE A WARNING LIGHT LENS - RED

QTY: 1

The lower zone A warning lights shall include red LEDs and a red lens if available from the manufacturer. If a red lens is unavailable, a clear lens shall be included.

LOWER ZONE A WARNING LIGHT BEZEL - CHROME

QTY: 1

The lower zone A warning lights shall include red leds and a chrome bezel if available from the manufacturer. If a chrome bezel is unavailable, a black bezel shall be included.

C-LOWER REAR, CODE 3 65 SERIES LED

QTY: 1

Two (2) Code 3, 65BZ* LED light heads shall be provided and installed with one (1) on each side directly below the DOT stop, tail, turn and backup lights.

LOWER ZONE C WARNING LIGHT LENS - RED

QTY: 1

The lower zone C warning lights shall include red LEDs and a red lens if available from the manufacturer. If a red lens is unavailable, a clear lens shall be included.

B/D-LOWER FRONT MOUNTING, CUSTOM CHASSIS

QTY: 1

The lower Zone B D warning lights shall be mounted on the sides of the custom chassis front bumper.

B/D-LOWER FRONT, CODE 3 65 SERIES LED

QTY: 1

Two (2) Code 3, 65BZ* LED light heads shall be provided and installed with one (1) on each side.

LOWER ZONE B/D FRONT WARNING LIGHT LENS - RED

QTY: 1

The lower zone B/D front warning lights shall include red LEDs and a red lens if available from the manufacturer. If a red lens is unavailable, a clear lens shall be included.

LOWER ZONE B/D FRONT WARNING LIGHT BEZEL - CHROME

QTY: 1

The lower zone B/D front warning lights shall include a chrome bezel if available from the manufacturer. If a chrome bezel is unavailable, a black bezel shall be included.

B/D-LOWER MID, CODE 3 65 SERIES LED

QTY: 1

Two (2) Code 3, 65BZ* LED light heads shall be provided and installed with one (1) on each side.

LOWER ZONE B/D MID WARNING LIGHT LENS - RED

QTY: 1

The lower zone B/D mid warning lights shall include red LEDs and a red lens if available from the manufacturer. If a red lens is unavailable, a clear lens shall be included.

LOWER ZONE B/D MID WARNING LIGHT BEZEL - CHROME

QTY: 1

The lower zone B/D mid warning lights shall include a chrome bezel if available from the manufacturer. If a chrome bezel is unavailable, a black bezel shall be included.

B/D-LOWER REAR, CODE 3 65 SERIES LED

QTY: 1

Two (2) Code 3 65BZ* LED light heads shall be provided and installed with one (1) on each side.

LOWER ZONE B/D REAR WARNING LIGHT LENS - RED

QTY: 1

The lower zone B/D rear warning lights shall include red LEDs and a red lens if available from the manufacturer. If a red lens is unavailable, a clear lens shall be included.

LOWER ZONE B/D REAR WARNING LIGHT BEZEL - CHROME

QTY: 1

The lower zone B/D rear warning lights shall include a chrome bezel if available from the manufacturer. If a chrome bezel is unavailable, a black bezel shall be included.

3M OPTICOM - MOUNTED IN CAB ROOF LIGHT BAR

QTY: 1

One (1) 3M Opticom system, which produces a flashing optical signal when in operation, shall be provided and mounted inside the cab roof light bar, replacing the center mounted clear warning light and situated so as not to interfere with the required light patterns of the NFPA Optical Warning Light System.

The wiring run through the Load Management System at the lowest available priority.

Additional circuitry shall be provided to automatically disable the Opticom System when the parking brake is engaged.

For Clarification: The Opticom will not have a separate switch. It will shed whenever the park brake is set.

OPTICOM ACTIVATION

QTY: 1

The Opticom shall not have a separate switch. It will shed whenever the park brake is set

GROUND LIGHTS

QTY: 1

One (1) TecNiq LED, 6" long ground light with stainless steel mounting bracket, shall be provided under each side cab door entrance step, four (4) total.

The ground lights shall turn on automatically with each respective door jamb switch and also by a master ground light switch in the warning light switch console.

Each light shall illuminate an area at a minimum 30" outward from the edge of the vehicle.

GROUND LIGHTS UNDER FRONT BUMPER

QTY: 1

One (1) TecNiq LED, 6" long ground light with stainless steel mounting bracket, shall be provided under each side of the front bumper facing forward, two (2) total.

The ground lights shall be activated by a master ground light switch in the cab and shall be wired through the load management system.

GROUND LIGHTS BELOW MID-SHIP COMPARTMENT

QTY: 1

One (1) TecNiq LED, 6" long ground light with stainless steel mounting bracket, shall be provided under each mid ship compartment, two (2) total.

The ground lights shall be activated by a master ground light switch in the cab and shall be wired through the load management system.

GROUND LIGHTS BELOW FRONT BODY CORNER

QTY: 1

One (1) TecNiq LED, 6" long ground light with stainless steel mounting bracket, shall be provided under each front body corner, two (2) total.

The ground lights shall be activated by a master ground light switch in the cab and shall be wired through the load management system.

GROUND LIGHTS REAR BODY CORNERS

QTY: 1

One (1) TecNiq LED, 6" long ground light with stainless steel mounting bracket, shall be provided under each rear body corner, two (2) total.

The ground lights shall be activated by a master ground light switch in the cab and shall be wired through the load management system.

CAB AND BODY GROUND LIGHTS ACTIVATE WITH PARK

QTY: 1

The cab and body ground lights shall activate by engaging the parking brake.

CHASSIS DIAGNOSTICS SYSTEM

QTY: 1

Diagnostic ports shall be accessible while standing on the ground and located inside the driver's side door left of the steering column. The diagnostic panel shall allow diagnostic tools such as computers to connect to various vehicle systems for improved troubleshooting providing a lower cost of ownership. Diagnostic switches shall allow engine and ABS systems to provide blink codes should a problem exist.

The diagnostic system shall include the following:

- A single port to monitor the engine, transmission and ABS system and diagnostics of the roll sensor (if applicable)
- Engine diagnostic switch (blink codes)
- ABS diagnostic switch (blink codes)
- Allison Transmission Codes (through touch pad shifter)

VOLTAGE MONITORING SYSTEM - 12 VOLT

QTY: 1

A voltage monitoring system shall be provided to indicate the status of the battery system connected to the vehicle's 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 volts DC for more than two (2) minutes.

INDICATOR LIGHT AND ALARM PROVE-OUT SYSTEM

QTY: 1

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

ELECTRICAL HARNESS INSTALLATION - 12 VOLT

QTY: 1

To ensure dependability, all 12-volt wiring harnesses installed by the manufacturer shall conform to the following specifications:

- SAE J 1128 - Low tension primary cable
- SAE J 1292 - Automobile, truck, truck-tractor, trailer and motor coach wiring
- SAE J 163 - Low tension wiring and cable terminals and splice clips
- SAE J 2202 - Heavy duty wiring systems for on-highway trucks
- NFPA 1901 - Standard for automotive fire apparatus
- FMVSS 302 - Flammability of interior materials for passenger cars, multipurpose passenger vehicles, trucks and buses
- SAE J 1939 - Serial communications protocol
- SAE J 2030 - Heavy-duty electrical connector performance standard
- SAE J 2223 - Connections for on board vehicle electrical wiring harnesses
- NEC - National Electrical Code
- SAE J 561 - Electrical terminals - Eyelet and spade type
- SAE J 928 - Electrical terminals - Pin and receptacle type A.

For increased reliability and harness integrity, harnesses shall be routed throughout the cab and chassis in a manner which allows the harnessing to be laid into its mounting location. Routing of harnessing which requires pulling of wires through tubes is never allowed at the manufacturer.

Wiring shall be run in loom or conduit where exposed, and have grommets or other edge protection where wires pass through metal. Wire colors shall be integral to each wire insulator and run the entire

length of each wire. Harnessing containing multiple wires and uses a single wire color for all wires shall not be allowed. Function and number codes shall be continuously imprinted on all wiring harness conductors at 3.00" intervals. All wiring installed between the cab and into doors shall be protected by a wire conduit to protect the wiring. 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:

- All holes made in the roof shall be caulked with silicon. {No Exceptions} Large fender washers, liberally caulked, shall be used when fastening equipment to the underside of the cab roof.
- 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.
- For low cost of ownership, electrical components designed to be removed for maintenance shall be quickly accessible. For ease of use, 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.
- Corrosion preventative compound shall be applied to non-waterproof electrical connectors 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.
- Any lights containing non-waterproof sockets in a weather-exposed area shall have corrosion preventative compound added to the socket terminal area.
- All electrical terminals in exposed areas shall have protective coating applied completely over the metal portion of the terminal.
- Rubber coated metal clamps shall be used to support wire harnessing and battery cables routed along the chassis frame rails.
- Heat shields shall be used to protect harnessing in areas where high temperatures exist. Harnessing passing near the engine exhaust shall be protected by a heat shield.
- Cab and crew cab harnessing shall not be routed through enclosed metal tubing. Dedicated wire routing channels shall be used to protect harnessing therefore improving the overall integrity of the vehicle electrical system. The design of the cab shall allow for easy routing of additional wiring and easy access to existing wiring.
- All standard wiring entering or exiting the cab shall be routed through sealed bulkhead connectors to protect against water intrusion into the cab.

All 12-volt battery cables and battery cable harnessing installed by the apparatus manufacturer shall conform to the following requirements:

- SAE J 1127 - Battery Cable
- SAE J 561 - Electrical terminals, eyelets and spade type
- SAE J 562 - Nonmetallic loom
- SAE J 836 A - Automotive metallurgical joining
- SAE J 1292 - Automotive truck, truck-tractor, trailer and motor coach wiring
- NFPA 1901 - Standard for automotive fire apparatus.

Battery cables and battery cable harnessing shall be installed utilizing the following guidelines:

- Splices shall not be allowed on battery cables or battery cable harnesses.
- For ease of identification and simplified use, battery cables shall be color coded. All positive battery cables shall be marked red in color. All negative battery cables shall be black in color.

- For ease of identification, all positive battery cable isolated studs throughout the cab and chassis shall be red in color.
- For increased reliability and reduced maintenance, all electrical buss bars located on the exterior of the apparatus shall be coated to prevent corrosion.
- 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.

BODY ELECTRICAL SYSTEM

QTY: 1

All electrical lines in the body shall be protected by automatic circuit breakers, conveniently located to permit ease of service.

Flashers, heavy solenoids and other major electrical controls shall be located in a central area near the circuit breakers.

All lines shall be color and function coded every 3", easy to identify, oversized for the intended loads and installed in accordance with a detailed diagram.

A complete wiring diagram shall be supplied with the apparatus.

Wiring shall be carefully protected from weather elements and snagging. Heavy duty loom shall be used for the entire length.

Grommets shall be utilized where wiring passes through panels.

In order to minimize the risk of heat damage, wires run in the engine compartment area shall be carefully installed and suitably protected by the installation of heat resistant shielded loom.

All electrical equipment shall be installed to conform to the latest federal standards as outlined in NFPA 1901.

BODY ELECTRICAL HARNESS - ES-KEY

QTY: 1

POWER DISTRIBUTION MODULES FOR CLASS ONE ES-KEY

QTY: 1

Class 1 Power distribution modules shall be provided in strategic areas of the chassis to allow body harnesses to interface to multiplex system.

The Remote Power Modules (RPM) provide a method of controlling loads on the vehicle, outside the cab, without running individual wires from each switch to the load.

This electronic module distributes and controls power to various devices on the vehicle as commanded by the control system inside the cab.

The RPM is connected to the Electrical System Controller via the J1939 datalink.

Each module receives power from a power cable, protected by a fusible link to the main battery circuit.

The power distribution modules shall be mounted in a location to provide complete access for service or trouble shooting.

DOOR OPEN INDICATOR W/ INTEGRAL AUDIBLE ALARM

QTY: 1

An indicator light with an audible alarm, shall be functionally located in the cab to signal when an unsafe condition is present such as an open cab door or body compartment door, an extended ladder rack, a deployed stabilizer, an extended light tower or any other device which is opened, extended or deployed which may cause damage to the apparatus if it is moved.

This light shall be activated through the parking brake switch to signal when the parking brake is released.

COMPARTMENT LIGHT ACTIVATION

QTY: 1

Compartment lighting shall be switched either from an integral switch as provided by the roll up door manufacturer or a magnetic proximity switch if it is a KME manufactured door.

COMPARTMENT LIGHTS

QTY: 1

Each exterior compartment shall have one (1) Tecniq LED model #E18 white dome light.

Each light shall come on automatically when the respective door is opened and the master battery switch is on.

ROOF COMPARTMENT LIGHTS

QTY: 12

A Amdor Luma Bar LED strip compartment light(s) shall be provided, to ensure proper compartment illumination.

The lights shall be mounted underneath the roof compartment door opening and shall be activated with a magnetic door switch that shall be connected to the door ajar warning circuit.

CUST PUMP/TANK/RES BODY LED MARKER LIGHTS

QTY: 1

OPTRONICS MARKER LIGHTS FORWARD OF CAB DOOR

QTY: 1

Optronics MCL series amber LED marker lights with reflector shall be provided and mounted forward of the front cab door, one (1) each side.

OPTRONICS MARKER/TURN LIGHTS @ EA SIDE OF BODY

QTY: 1

Optronics model MCL82RB, red, LED marker lights with integral reflectors shall be provided at the lower side rear, having one (1) on each side.

Optronics Model #STL71AMB, yellow, LED side marker and turn lights shall be provided on the apparatus lower side, forward of rear axle that puts one (1) on each side, if the apparatus is 30' long or longer.

CHROME PLATED FLANGE FOR SIDE MARKER/TURN LIGHTS

QTY: 1

One (1) Truck-Lite #60703 chrome cover shall be provided for each intermediate turn light.

OPTRONICS MARKER LIGHTS @ REAR OF BODY

QTY: 1

Optronics MCL65, red, LED clearance lights shall be provided on the apparatus rear upper having one (1) on each side at the outermost practical location.

Optronics MCL12, LED, 3-lamp identification bar will be provided on the apparatus rear center.

The lights shall be red in color.

TRUCK-LITE DOT AMBER REFLECTORS @ SIDE OF BODY

QTY: 1

Truck-Lite # 98034Y, yellow reflectors shall be provided on the apparatus body lower side, as far forward and low as practical with one (1) on each side if the apparatus is 30' long or longer.

TRUCK-LITE DOT RED REFLECTORS @ REAR OF BODY

QTY: 1

Truck-Lite # 98034R, red reflectors shall be provided on the apparatus rear with one (1) on each side at the outermost practical location.

TECNIQ #L10 LED LICENSE PLATE LIGHT @ DS REAR OF B

QTY: 1

One (1) Tecniq model #L10 LED license plate light shall be provided above the mounting position of the license plate.

The light shall be clear in color and shall have a chrome finish.

CODE 3, #65 LED BRAKE, REVERSE, & TURN W/ QUAD HOU

QTY: 1

Two (2) Code 3, 65STR 4" x 6", red LED combination tail and stop lights, shall be mounted one each side at the rear of the body.

Two (2) Code 3, 65STA 4" x 6", amber LED arrow turn signal lights, shall be mounted one each side, on a vertical plane with the tail/stop lights.

Two (2) Code 3, 65RV 4" x 6", white LED backup lights, shall be mounted one each side, on a vertical plane with the turn/tail/stop signals.

These lights shall activate when the transmission is placed in reverse gear.

Two (2) Code 3 65STK4 mounting flanges, installed one (1) on each side, shall be provided to mount the lights described above in one common mounting flange.

The fourth opening shall be for the lower rear warning lights.

The lights shall be mounted in order, from top to bottom, as described above.

BODY STEP LIGHTS, TECNIQ EON 3 LED, ALL DEVICES

QTY: 2

Polished, stainless steel, TecNiq Eon 3-LED, horizontal surface, mounted body step lights shall be provided and controlled with marker light actuation.

Step lights shall be located to properly illuminate all body access steps and walkway areas and shall include a mounting gasket to provide a watertight seal.

HIVIZ GUARDIAN JUNIOR SCENE LIGHTS BEHIND CAB DOOR

QTY: 1

Two (2) Firetech Hiviz Guardian Junior FT-GSMJR, LED scene lights shall be provided, (1) one on each side of the cab, directly behind the front cab entrance door in a chrome plated flange.

Each light shall be 7.5 wide by 5 high by 1.5 deep, draw 3.33 amps, and produce 3,000 lumens.

The scene lights shall be wired through the load management system.

HIVIZ GUARDIAN ELITE SCENE LIGHTS ON REAR OF BODY

QTY: 1

Two (2) Firetech Hiviz Guardian Elite FT-GESM, LED scene lights shall be provided, (1) one on each side of the rear body panel in a chrome plated flange.

Each light shall be 11 wide by 9 high by 3 deep, draw 10 amps, and produce 10,491 lumens.

The scene lights shall be wired through the load management system.

HIVIZ GUARDIAN ELITE SCENE LIGHTS ON DS OF BODY

QTY: 1

Two (2) Firetech Hiviz Guardian Elite FT-GESM, LED scene lights shall be provided.

The scene lights shall be installed, one rearward and one forward, on the driver side of the body in a chrome plated flange.

Each light shall be 11 wide by 9 high by 3 deep, draw 10 amps, and produce 10,491 lumens.

The scene lights shall be wired through the load management system.

HIVIZ GUARDIAN ELITE SCENE LIGHTS ON OS OF BODY

QTY: 1

Two (2) Firetech Hiviz Guardian Elite FT-GESM, LED scene lights shall be provided.

The scene lights shall be installed, one rearward and one forward, on the officer side of the body in a chrome plated flange.

Each light shall be 11 wide by 9 high by 3 deep, draw 10 amps, and produce 10,491 lumens.

The scene lights shall be wired through the load management system.

REAR SCENE LIGHTS TO BE ACTIVATED BY REVERSE LIGHT

QTY: 1

In addition to the cab mounted switch for the rear scene lights, the rear scene lights shall illuminate when the transmission is placed in reverse gear and the apparatus is operating as an emergency vehicle (Primary Warning switch on).

REAR TRAFFIC WARNING LIGHT

QTY: 1

One (1) Code 3 Torus, "Narrow Stik" Model # NASLTS539, 40.5" rear directional light shall be installed on the rear of the body.

The light shall be equipped with five (5) lamps.

The light shall be controlled from the cab.

The control module shall be conveniently located near the driver's position.

The rear directional light shall be wired through the load management system of the unit.

TRAFFIC ADVISOR - RECESSED IN REAR STEP

QTY: 1

The traffic advisor will be recessed in the rear intermediate step.

GENERATOR

QTY: 1

One (1) Harrison MDS Hydraulic Driven Generator rated at 12,000 watts, 100/50 amps, 120/240 VAC, 60Hz, 1-phase shall be provided.

The system shall be designed and assembled by a company with no less than 20 years experience in the manufacture of hydraulic driven generators. The generator shall be tested at the full nameplate rated load prior to shipping and the test report shall be included. The test report shall document the generator's performance at various loads from no load to full load to ensure reliable power delivery at those loads.

The motor/generator shall be placed in a structural steel frame which affords protection to the components and provides a unitized mounting module containing the motor/generator, reservoir, oil cooler, filtration, on/off manifold containing a cross port check valve allowing unit to be started and shut down remotely. The generator shall have a cover consisting of NFPA approved diamond tread plate. A dedicated air intake duct for the alternator and a dedicated air intake duct for the heat exchanger shall be provided on the generator. Both air intake ducts shall be located on the same side of the generator.

The generator shall be a commercial type with a heavy-duty bearing and of brush less design to ensure low maintenance. No brushes or slip rings shall be allowed. The reservoir shall include an oil level sight gauge, oil temperature gauge; fill cap, oil filter, and a venturi boost unit to provide positive pressure to the pump suction port.

The generator and motor shall be close coupled and aligned using a Morse taper with a through bolt to secure the motor to the generator. No two (2) bearing generators shall be used.

The generator system must be able to operate on a Hot Shift PTO and must be able to be used while vehicle is either stationary or in motion.

The hydraulic motor and pump shall be of axial piston design to provide low internal leakage and a high degree of frequency stability. No gear pumps or motors shall be used. The pump shall match the system with the proper orifice, pressure compensator, and load sense settings to provide stable output regardless of engine rpm or electrical load demands. The use of electronics to control the flow shall not be allowed.

The system shall be capable of normal operations using a commonly available ISO 46 hydraulic fluid. All fluid service points shall be in close proximity to the reservoir for ease of scheduled maintenance.

When properly installed, the system shall be warranted for a period of not less than two (2) years or 2000 hours, whichever should come first.

The generator shall be remotely turned on/off by using a 12 VDC switch mounted on the cab dash.

120 & 240 VOLT WIRING METHODS

QTY: 1

Wiring/conduit shall not be attached to any chassis suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components or low voltage wiring.

All wiring shall be installed at a minimum of 12 inches away from any exhaust piping and a minimum of 6 inches from any fuel lines.

All wiring shall be securely clamped within 6 inches of any junction box and at a minimum of every 24 inches of run. All supports shall be of nonmetallic material or corrosion protected metal. All supports shall not cut or abrade conduit or cable and shall be mechanically fastened to the vehicle.

All power supply assembly conductors, including neutral and grounding conductors, shall have an equivalent amperage rating and shall be sized to carry not less than 115% of the main breaker rating.

All Type SO or Type SEO cable not installed in a compartment shall be installed in wire loom. Where Type SO or Type SEO cable penetrates a metal surface, a rubber or plastic grommet or bushing shall be provided.

The installation of all 120/240 wiring shall meet the current NFPA-1901 Standards {No Exceptions}.

120/240 VOLT WIRING IDENTIFICATION

All line voltage conductors located inside the main breaker panel box shall be individually and permanently identified. When pre-wiring for future power wiring installations, the non-terminated ends shall be labeled showing function and wire size.

120/240 VOLT GROUNDING

The neutral conductor of the power source shall be bonded to the vehicle frame only at the power source.

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 addition to the bonding required for the lower voltage return current, each body and driving/crew compartment enclosure shall be bonded to the vehicle frame by a copper conductor. The conductor shall have a minimum amperage rating of 115 percent of the name plate current rating of the power source specification label.

120/240 VOLT CIRCUIT BREAKER / RECEPTACLE INSTALLATION

The system shall be installed by highly qualified electrical technicians to assure the required level of safety and protection to the fire apparatus operators. When multiple circuit are required, the circuits shall be wired to the breaker panel in a staggered configuration to minimize electrical loads on each breaker or generator (leg) circuit. The wiring, electrical fixtures and components shall be to the highest industry quality standards available on the domestic market. The equipment shall be the type as designed for mobile type installations subject to vibration, moisture and severe continuous usage.

GENERATOR

QTY: 1

The generator shall be equipped with an additional updraft fan.

GENERATOR LOCATION

QTY: 1

The generator shall be mounted above the pump enclosure in the center.

Locating the generator greater than 144" from the main breaker panel may require the installation of an additional power disconnecting means.

GENERATOR RUNNING LIGHT

QTY: 1

A 120 volt generator running light shall be installed on the cab dash.

HARRISON HOT SHIFT PTO

QTY: 1

A hot shift PTO shall be provided on the transmission for the Harrison generator.

The PTO shall be controlled from the cab. The control shall include a PTO engagement switch and a PTO engaged indicator light.

PTO GENERATOR CONTROLS @ BREAKER PANEL

QTY: 1

In addition to cab controls, the generator shall have PTO control adjacent to the circuit breaker panel.

The controls shall also include a green light to indicate the generator is running.

DIGITAL QUAD METER FOR HARRISON GENERATORS

QTY: 1

A weatherproof digital Quadra meter containing the volt, amp, and frequency shall be installed near the breaker panel.

BREAKER PANEL

QTY: 1

The generator output line conductors shall be wired from the generator output connections to a Square D, model #QO112L125G breaker panel.

The breaker panel shall be equipped with a properly sized main breaker, using two (2) of the twelve (12) spaces which leaves a total of ten (10) available spaces.

The generator output conductors shall be sized to 115% of the main breaker rating and shall be installed as indicated in the wiring section.

TWELVE (12) GFI BREAKERS IN LIEU OF STANDARD

QTY: 1

Twelve (12) appropriately sized, 120 volt, GFI ground fault circuit breakers, shall be installed in place of standard circuit breakers.

BREAKER PANEL LOCATION

QTY: 1

The breaker panel shall be located on the rear wall of the driver side front compartment.

RECEPTACLE REAR WHEEL WELL

QTY: 1

One (1) 120 volt, NEMA L5-20, 20 amp, Single twist-lock receptacle with a grey thermoplastic, corrosion resistant, weatherproof cover shall be installed at the driver side rear wheel well panel.

This receptacle shall require one (1) 20 amp, 120 volt circuit breaker to be installed in the load center.

RECEPTACLE REAR WHEEL WELL

QTY: 1

One (1) 120 volt, NEMA L5-20, 20 amp, Single twist-lock receptacle with a grey thermoplastic, corrosion resistant, weatherproof cover shall be installed at the officer side rear wheel well panels.

This receptacle shall require one (1) 20 amp, 120 volt circuit breaker to be installed in the load center.

NEMA L5-20 SINGLE RECEPTACLES BREAKER PANEL

QTY: 1

One (1) 120 volt, NEMA L5-20, 20 amp, duplex twist-lock receptacle with a grey thermoplastic, corrosion resistant, weatherproof cover shall be installed adjacent to the circuit breaker panel.

This receptacle shall require one (1) 20 amp, 120 volt circuit breaker to be installed in the load center.

NEMA L5-20 SINGLE RECEPTACLES BREAKER PANEL

QTY: 1

One (1) 120 volt, NEMA L5-20, 20 amp, duplex twist-lock receptacle with a grey thermoplastic, corrosion resistant, weatherproof cover shall be installed adjacent to the circuit breaker panel.

This receptacle shall require one (1) 20 amp, 120 volt circuit breaker to be installed in the load center.

ELECTRIC CORD REEL #1

QTY: 1

One (1) Hannay Model #ECR-1620-17-18, 120 volt, electric rewind cord reel shall be provided and wired to the breaker panel.

The reel shall be securely mounted and equipped with a rewind control adjacent to the reel.

ELECTRIC CORD REEL #1 LOCATION

QTY: 1

The cord reel shall be ceiling mounted in the officer rear compartment.

ELECTRIC CORD REEL #1 ROLLER

QTY: 1

A Hannay 4-way stainless steel roller assembly shall be provided. The roller assembly opening shall be the full width of the reel drum.

ELECTRIC CORD REEL #1 REWIND

QTY: 1

A reel rewind switch(s) shall be provided adjacent to the reel.

ELECTRIC CORD REEL #1 CABLE

QTY: 1

Two hundred (200) feet of Type SO black 12/3 heavy duty electric cable shall be provided on the reel.

ELECTRIC CORD REEL #1 TERMINATION

QTY: 1

One (1) NEMA L5-20R, 20 amp, three prong twist-lock receptacle shall be provided on the end of the cable.

ELECTRIC CORD REEL #1 JUNCTION BOX

QTY: 1

A Circle-D Model #PF51GFCI-5P, four (4) outlet junction box(es) with one (1) NEMA 5-20R GFCI rated straight blade receptacle and three (3) NEMA L5-20R twist-lock receptacles with 6" pigtail with a NEMA L5-20P twist-lock plug shall be provided.

ELECTRIC CORD REEL #1 JUNCTION BOX HOLDER

QTY: 1

A holder(s) constructed from 1/8" aluminum tread plate shall be provided for each cord reel(s) junction box. The location of the holder shall be adjacent to the cord reel roller assembly or as directed by the fire department.

ELECTRIC CORD REEL #1 CIRCUIT BREAKER

QTY: 1

The circuit breaker used to protect any device attached to the cord reel shall be sized to the smallest electrical connection used.

ELECTRIC CORD REEL #1 BALL STOP

QTY: 1

A cable ball stop(s) shall be installed on the cable to keep the end from passing through the roller assembly.

ELECTRIC CORD REEL #2

QTY: 1

One (1) Hannay Model #ECR-1620-17-18, 120 volt, electric rewind cord reel shall be provided and wired to the breaker panel.

The reel shall be securely mounted and equipped with a rewind control adjacent to the reel.

ELECTRIC CORD REEL #2 LOCATION

QTY: 1

The cord reel shall be ceiling mounted in the driver rear compartment.

ELECTRIC CORD REEL #2 ROLLER

QTY: 1

A Hannay 4-way stainless steel roller assembly shall be provided. The roller assembly opening shall be the full width of the reel drum.

ELECTRIC CORD REEL #2 REWIND

QTY: 1

A reel rewind switch(s) shall be provided adjacent to the reel.

ELECTRIC CORD REEL #2 CABLE

QTY: 1

Two hundred fifty (250) feet of Type SO yellow 10/3 heavy duty electric cable shall be provided on the reel.

ELECTRIC CORD REEL #2 TERMINATION

QTY: 1

One (1) NEMA L5-20R, 20 amp, three prong twist-lock receptacle shall be provided on the end of the cable.

ELECTRIC CORD REEL #2 JUNCTION BOX

QTY: 1

A Circle-D Model #PF51GFCI-5P, four (4) outlet junction box(es) with one (1) NEMA 5-20R GFCI rated straight blade receptacle and three (3) NEMA L5-20R twist-lock receptacles with 6" pigtail with a NEMA L5-20P twist-lock plug shall be provided.

ELECTRIC CORD REEL #2 JUNCTION BOX HOLDER

QTY: 1

A holder(s) constructed from 1/8" aluminum tread plate shall be provided for each cord reel(s) junction box. The location of the holder shall be adjacent to the cord reel roller assembly or as directed by the fire department.

ELECTRIC CORD REEL #2 CIRCUIT BREAKER

QTY: 1

The circuit breaker used to protect any device attached to the cord reel shall be sized to the smallest electrical connection used.

ELECTRIC CORD REEL #2 BALL STOP

QTY: 1

A cable ball stop(s) shall be installed on the cable to keep the end from passing through the roller assembly.

NIGHTSCAN 2.3-600 WHL, 4-150W/120V WHELEN PIONEER

QTY: 1

A Will-Burt Nightscan 2.3, model NS 2.3-600 WHL surface mounted light tower shall be provided and mounted as specified.

The light tower shall be equipped with four (4) 150-watt, 120-volt Whelen LED spot/flood light fixtures to provide a total of 600 watts of lighting. The light tower uses an RCP (Remote Control Positioner) attached to the top of the tower to allow full rotation and tilt of the light fixtures at any vertical height to ensure total scene coverage above or beside the vehicle. The light tower extends to a maximum height of 7.5 feet from the mounted surface.

The four (4) 150-watt light heads shall require one (1) 120-volt, single pole 15-amp circuit breaker.

The light towers functions including "auto stow," are operated by a pistol grip remote control.

The light tower control shall be mounted in the proximity of the electrical breaker panel.

WIRELESS HANDHELD CONTROLLER IPO STANDARD

QTY: 1

A wireless hand held controller shall be provided and installed, in place of standard controller, to control the functions of the light tower.

An emergency stop button shall be provided on the junction box, next to where the controller is mounted, for added safety.

BLUE STROBE ON TOP OF LIGHT TOWER MAST

QTY: 1

A blue position indicating flashing strobe light shall be provided on the top of the light tower mast and shall be wired to automatically activate when the light tower is in use.

LIGHTTOWER LOCATION

QTY: 1

The light tower shall be mounted on the upper custom cab roof.

PAINTED LIGHT TOWER GUARD

QTY: 1

The light tower shall be protected by a three sided, painted aluminum box, to protect it from low hanging objects, when the tower is in its stowed position.

DOT HORN

QTY: 1

A single electric horn activated by the steering wheel horn button shall be furnished.

BACK-UP ALARM

QTY: 1

A Code 3, model # CA360C, 107dBA back-up alarm, shall be provided and installed at the rear of the apparatus under the tailboard.

The back-up alarm shall activate automatically when the transmission is placed in reverse gear and the ignition is "on."

SINGLE CHROME AIR HORN - GROVER

QTY: 1

A single Grover chrome plated air horn shall be at the front of the vehicle. The air horn shall be mounted in full compliance with NFPA-1901. The supply line shall be a minimum of 1/4".

HORN SELECTOR

QTY: 1

A multi selection button shall be provided in the multiplex screen to activate from the steering wheel horn button one of the following:

- DOT electric horn
- Air horn

SHUT-OFF VALVE FOR AIR HORN SUPPLY

QTY: 1

A shut-off valve shall be provided for the air horn supply line.

SINGLE AIR HORN

QTY: 1

The air horn shall be recessed in the officer side of the front bumper.

AIR HORN CONTROL

QTY: 1

The air horn(s) shall be controlled by a foot switch on the officer's side and the steering horn button on driver's side.

An air horn/electric DOT horn, selector switch shall be furnished on the dash for the drivers steering horn button.

ELECTRONIC SIREN

QTY: 1

One (1) Whelen # 295HFS2, 100 watt electronic siren shall be provided featuring: flush mount remote control head recessed in center dash panel as space allows, "Si-Test" self diagnostic feature, six (6) function siren, radio repeat, and public address.

The electronic siren and speaker shall meet the NFPA required SAE certification to ensure compatibility between the siren and speaker.

WHELEN SA315P SPEAKER

QTY: 1

One (1) Whelen, model # SA315P composite black siren speaker, shall be provided, recessed in the front bumper and wired to the electronic siren.

POLISHED STEEL ELECTRONIC SIREN SPEAKER GRILL

QTY: 1

A custom electric siren speaker grill shall be provided. This grill shall include the KME company logo cut into the center.

MECHANICAL SIREN

QTY: 1

One (1) Federal Model #Q2B mechanical siren shall be provided to provide audible warning.

SIREN LOCATION

QTY: 1

The Q2B siren shall be semi-recessed into the bumper on the driver's side.

The siren shall be recessed so the front grille portion of the siren is exposed and protruding beyond the bumper.

SIREN CONTROL - FLOOR SWITCH, DRIVER AND OFFICER

QTY: 1

Two (2) floor mounted foot switches shall be provided, one (1) for the officer and one (1) for the driver. The Q2B foot switches will be Line Master model 632. The officer side foot switch will be as far outboard as possible. The driver side foot switch will be mounted outboard of the steering column boot. The rear edge of the driver side foot switch will not extend past the rear edge of the steering column boot.

A siren brake button shall be provided near the officer's seating position.

AUTO SIREN CONTROL

QTY: 1

An adjustable sequential timer switch, Amprite Model #12F-DFA with wire termination, {will/shall} be provided for automatic siren operation. The timer switch {will/shall} be controlled by two (2) rocker switches, one (1) mounted on the driver and officer A/C plenum panel. The switches shall be labeled "AUTO SIREN" and {will/shall} only function when the red emergency lights are activated. There shall be a spare switch provide in between the siren brake and autop siren switches on each side. Switch configuration shall be as follows:

Forward to back: AUTO SIREN/SPARE/SIREN BRAKE

Q2B ACTIVATION/BRAKE

QTY: 1

A second push button Q2B activation/brake switch shall be provided on the cab dash near the officers seating position. The top portion of the switch shall activate the Q2B and the lower portion shall activate the brake. Both shall be momentary operation.

SIGTRONICS # EAI-D6-LAC INTERCOM W/4 RADIO

QTY: 1

A Sigtronics model # EAI-D6-LAC version (allows two PTT button interface) intercom system shall be provided at the forward cab area. The system shall be capable of interfacing with dual two-way radio systems (note: an authorized two-way radio installer shall be responsible for interfacing the intercom system with the two-way radio).

The master station shall be capable of accepting up to six positions (plus exterior positions), and utilize a 12 volt nominal power supply. The intercom system shall include:

Six (6) # SE-8 single plug, behind the head, radio transmit headsets shall be furnished. The headsets shall have adjustable volume, noise canceling electric microphone, adjustable head strap, and a reversible, flex-style boom which rotates for left or right dress. One (1) headset and mounting hook will be shipped loose with the apparatus to be utilized as spares.

A total of five (5) # 800120 head set jacks shall be provided at the required seating positions in the cab. A head set mounting hook shall be provided, adjacent to each interior head set jack location.

Four (4) # 800122 radio transmit switches shall be provided at the required locations in the cab of the unit.

The system as specified shall be completely installed during the manufacturing process, to properly conceal accessories of the intercom system.

Driver side two (2) PTT switches on side of center lower console; officer side two (2) PTT switches on side of center lower console.

The jacks for the outboard forward facing crew seats will be mounted between the outboard and center seats.

No rear tailboard headset jack or PTT switch is to be provided.

One (1) set of gel type ear seals shall be provided for the specified head set(s).

Six (6) # SE-8 single plug, behind the head, radio transmit headsets shall be furnished.

The headsets shall have adjustable volume, noise canceling electric microphone, adjustable head strap, and a reversible, flex-style boom which rotates for left or right dress.

A total of six (6) # 800120 head set jacks shall be provided at the required seating positions in the cab.

One (1) # 800121 exterior head set jack shall be provided for remote mounting at a location to be determined.

A head set mounting hook shall be provided, adjacent to each interior head set jack location.

Three (3) # 800122 radio transmit switches shall be provided at the required locations in the cab or at the exterior area of the unit.

The system as specified shall be completely installed during the manufacturing process, to properly conceal accessories of the intercom system.

WEATHER BAND AM/FM/WX/CD W/ 4 SPEAKERS, WIRELESS R

QTY: 1

A Weather Band/AM/FM, CD, MP3, Satellite ready player with a wireless remote **shall be recess mounted within the center overhead adjacent to the electronic siren control head.**

The radio will be a Kenwood model# 5710 and match what was provided on GSO 10588.

A dash drawing will be provided for your approval. On this dash approval drawing please provide the location and the cut out size required for any and all two way radios. *The stereo will be wired battery hot and not thru the main disconnect.

The speakers shall be located as follows:

- (2) 6 inch mounted in the Front of the cab
- (2) 6 inch mounted in the Rear of the cab

A heavy duty flexible base antenna shall be provided on the cab.

APPARATUS BODY GENERAL DESCRIPTION

QTY: 1

The body side and compartment assemblies shall be designed and assembled to provide maximum strength and durability under all operating conditions.

Special attention shall be taken to minimize rust on all fabricated parts and structural members of the body. All bolt-on components shall be provided with a dissimilar metals isolation barrier to prevent electric corrosion. The body design shall also incorporate removable panels to access spring hangers, rear body mounts and fuel tank sending units.

The body shall be an all Heliarc welded construction for maximum strength and integrity for the entire life of the apparatus. The body assembly shall be a single unit completely isolated from the cab.

COATED FASTENERS

QTY: 1

All exterior fasteners shall be coated stainless steel screws. Screw threads shall be coated with reusable, self-locking, sealing material to provide vibration resistance. Screw heads shall be coated with a sealing element to prevent galvanic corrosion between dissimilar metals. Non-coated screws shall only be provided as part of vendor supplied component installations. There will be no exceptions.

COMPARTMENT LOUVERS

QTY: 1

Ventilation between compartments to atmosphere shall be provided and located to avoid water entry into compartments.

ACCESS PANELS

QTY: 1

Removable access panels shall be provided (if applicable) to access fuel tank sender, electrical junction compartment and rear body mounts.

Protective panels shall be located in the rear compartments providing access to the lights and associated wiring.

The covers shall also serve as protective covers to prevent inadvertent damage to lights or wiring from tools or equipment located in the compartment.

BODY 3/16" ALUMINUM; WALK AROUND RESCUE

QTY: 1

All compartment panels and body side sheets shall be entirely 3/16" aluminum (5052-H32). Each side compartment assembly shall be both plug welded and stitch welded to ensure proper weld penetration on all panels while avoiding the possible warping caused by a full seam weld. The side compartments shall be welded on a fixture to ensure true body dimensions of all door openings. The side compartments and body side panels are then set into a body squaring fixture where the super structure is installed and the entire body is aligned to be completely symmetrical. The super structure is then welded to the compartment side panels and reinforcement plates are inserted which allows the compartment panels to become an integral component of the body support structure. A full seam weld shall not be used due to the applied heat which could distort sheet metal and remove the protective coating from the perimeter of the welded area. All seams shall be caulked prior to finish paint to ensure proper compartment seal.

SUPER STRUCTURE FOR 3/16" ALUMINUM BODY

QTY: 1

The body superstructure shall be an all welded configuration utilizing a combination of 3" x 1-1/2" 6061-T6 thick walled structural tubing and 6061 structural channel.

This structure shall be designed to totally support the full length and width of the body and shall be welded to the body side compartments by use of reinforcement plates to incorporate the compartments into an integral part of the body weldment.

The superstructure shall be bolted to the sides of the chassis frame at four (4) points.

STEPPING, STANDING, WALKING SURFACES

All stepping, standing, and walking surfaces on the body shall meet NFPA #1901 anti-slip standards. Aluminum tread plate utilized for stepping, standing, and walking surfaces shall be ALCOA No Slip type. Upon request by the Purchaser, the manufacturer shall supply proof of compliance with this requirement.

CENTER TANDEM STORAGE

QTY: 1

A storage compartment will be inserted into the center of each tandem body fender. The compartment will be an open storage area, sized as tall and wide as possible and a minimum of 26" deep. The compartment shall be enclosed by a drop down door painted to match the primary body color, with a single point latch and hinge. The back side of the door shall have a section of Nylatron installed to protect the door surface from the items stored in the compartment. This compartment shall be tied into the compartment door ajar/do not move apparatus warning system.

This compartment shall be tied into the compartment door ajar/do not move apparatus warning system.

FENDER WITH STORAGE OPTIONS (CUSTOM)

QTY: 1

DRIVER FORWARD FENDER - TRIPLE STORAGE SLOT

QTY: 1

A storage compartment shall be inserted into the fender to provide a storage area for three (3) customer supplied SCBA cylinders (or fire extinguishers of similar size).

The storage area shall be sized as tall and wide as possible in the fender (minimum of 14" wide x 15" tall with an angled floor by fender radius), and shall be 26" deep.

The compartment shall have a non-abrasive lined cradle storage area for each of the three (3) devices.

This storage compartment shall provide a minimum of 2.3 cubic feet of storage space.

DRIVER REARWARD FENDER - TRIPLE STORAGE SLOT

QTY: 1

A storage compartment shall be inserted into the fender to provide a storage area for three (3) customer supplied SCBA cylinders (or fire extinguishers of similar size).

The storage area shall be sized as tall and wide as possible in the fender (minimum of 14" wide x 15" tall with an angled floor by fender radius), and shall be 26" deep.

The compartment shall have a non-abrasive lined cradle storage area for each of the three (3) devices.

This storage compartment shall provide a minimum of 2.3 cubic feet of storage space.

OFFICER FORWARD FENDER - TRIPLE STORAGE SLOT

QTY: 1

A storage compartment shall be inserted into the fender to provide a storage area for three (3) customer supplied SCBA cylinders (or fire extinguishers of similar size).

The storage area shall be sized as tall and wide as possible in the fender (minimum of 14" wide x 15" tall with an angled floor by fender radius), and shall be 26" deep.

The compartment shall have a non-abrasive lined cradle storage area for each of the three (3) devices.

This storage compartment shall provide a minimum of 2.3 cubic feet of storage space.

OFFICER REARWARD FENDER - OPEN STORAGE AREA

QTY: 1

A storage compartment shall be inserted into the fender to provide an open storage area for customer supplied devices such as salvage tarps, rope bags, wheel chocks, etc.

The storage area shall be sized as tall and wide as possible in the fender (minimum of 14" wide x 15" tall with an angled floor by fender radius), and shall be 26" deep.

This storage compartment shall provide a minimum of 2.3 cubic feet of storage space.

FENDER STORAGE COMPARTMENTS - POLISHED DOORS

QTY: 1

The fender storage area(s) shall be enclosed by a hinged door fabricated from mirror finish stainless steel.

The back side of the door shall have a section of Nylatron installed to protect the door surface from the items stored in the compartment.

Each door shall be tied into the compartment door ajar/do not move apparatus warning system.

Each fender storage compartment door will be equipped with 3M model #1333 rubber "D" style door seal.

There will be no exceptions.

ROLL-UP FIVE (5) COMPARTMENT WALK AROUND, TA

QTY: 1

FIVE (5) COMPARTMENT WALK AROUND DIMENSIONS

QTY: 1

COMPARTMENT-1, 60" WIDTH, ROLL-UP

COMPARTMENT-2, 60" WIDTH, ROLL-UP

COMPARTMENT-3, 55" WIDTH, ROLL-UP, OA

COMPARTMENT-4, 53" WIDTH, ROLL-UP, OA

COMPARTMENT-5, 48" WIDTH, ROLL-UP

L-1/R-1, 60" COMPARTMENT

COMPARTMENT #1

72" high x 63 1/4" wide x 29" deep

Roll-up door

Door opening: 68" high x 60" wide

COMPARTMENT L-1/R-1 TRANSVERSE

Compartment L-1 and R-1 shall be transverse.

L-2/R-1, 60" COMPARTMENT

COMPARTMENT #2

72" high x 62 1/8" wide x 29" deep
Roll-up door
Door opening: 68" high x 60" wide

COMPARTMENT L-2/R-2 TRANSVERSE

Compartment L-2 and R-2 shall be transverse over the frame rails.

L-3/R-3, 55" COMPARTMENT

COMPARTMENT #3
39 3/4" high x 59-1/2" wide x 29" deep
Roll-up door
Door opening: 36" high x 58" wide

COMPARTMENT L-3/R-3 TRANSVERSE

Compartment L-3 and R-3 shall be transverse over the frame rails.

L-4/R-4, 55" COMPARTMENT

COMPARTMENT #4
39 3/4" high x 59-1/2" wide x 29" deep
Roll-up door
Door opening: 36" high x 58" wide

COMPARTMENT L-4/R-4 NON TRANSVERSE

Compartment L-4 and R-4 shall be 29" deep.

L-5/R-5, 48" COMPARTMENT

COMPARTMENT #5
72" high x 51 1/4" wide x 29" deep
Roll-up door
Door opening: 68" high x 48" wide

COMPARTMENT L-5/R-5 NON TRANSVERSE

Compartment L-5 and R-5 shall be 29" deep.

REAR COMPARTMENT

QTY: 1

A rear compartment measuring 42" wide with a minimum height of 47-3/4" and a depth equal to the width of the rearmost compartment which is NOT Transverse.

ROLL-UP DOORS

QTY: 1

Roll-up doors shall be provided on all compartments.

The roll-up doors shall be constructed from aluminum extruded slats which shall have a flexible seal between each slat for proper sealing of the door.

A synthetic rubber seal shall be provided at each side, top and bottom edge of the door to prevent entry of dirt into the compartment.

The door shall be equipped with a lift bar style latch mechanism which shall latch at the bottom of the door mounting extrusion.

The roll-up door assembly shall be furnished with a spring-loaded, counter balance assembly to assist in door actuation.

All running board and high side compartments shall be equipped with roll-up doors.

PULL DOWN STRAPS FOR ALL BODY DOORS

QTY: 1

Straps to assist in closing all body doors shall be provided.

AMDOR ROLL-UP DOORS, PAINTED FINISH

QTY: 11

The roll-up doors shall be made of Amdor brand. The doors shall be painted to match the required color of the fire department.

PAINTED ROLLUP DOORS - PAINTED CURTAIN, TOP GUTTER

QTY: 11

The top gutter and side frames shall be painted to match the required color of the fire department.

PROTECTION PANELS FOR ROLL-UP DOORS, BRUSHED ALUM

QTY: 1

A protection panels shall be provided at the top of the body exterior compartments fitted with roll-up doors.

The panels shall be installed below the roll-up area to prevent possible damage to the roll-up door by misplaced equipment.

Each protection panel shall be bolted in place and have a brushed aluminum finish.

ROLLUP PROTECTION PANELS ON 11 BODY DOORS

QTY: 1

Eleven (11) rollup door protection panels shall be installed.

KEYED DOOR LOCKS, HINGED OR ROLL-UP DOORS

QTY: 11

A compartment door(s) shall be equipped with keyed locking door latches.

Two keys shall be furnished for each lock and shall be labeled to indicate the correct match.

KEY MODEL #1250

QTY: 11

The specified door lock cylinder shall be equipped with a #1250 key.

PULL DOWN STRAPS FOR ROLL-UP DOORS

QTY: 11

Pull straps shall be provided for all roll-up doors.

SWEEP-OUT COMPARTMENTS (NON-AERIALS)

QTY: 1

Compartment floors shall be welded to the compartment walls and have a sweep out design for easy cleaning.

Compartments with hinged doors shall have the door opening flanges bend down to produce the sweep-out design.

Compartments with roll-up style doors shall have the external floor flange stepped down, 1/2" high x 2" deep, to produce a sealing surface for the roll-up doors below the compartment floor. The sweep out design shall also permit easy cleaning.

ROOF COMP'TS W/ FORWARD COMPARTMENT

QTY: 1

Roof hatch style compartments shall be provided on both sides of the body, with a center walkway aisle.

A transverse roof compartment forward of the longitudinal roof compartments will be provided.

Compartment will be full body width X 30" long X Full Depth.

A tread plate overlay will be provided on the light tower well floor to meet NFPA 1901 standards for walking surfaces. A 1/8" aluminum panel will be provided on the outer walls to act as both a wire cover and double wall to protect the body side sheet. The Light tower will be installed on an approximate 3" riser in the event the drains become blocked.

The compartments located rearward of the light tower well shall be labeled R-1 through R-4 starting with R-1 at the left front, R-2 left rear, R-3 right front, R-4 right rear.

Each roof compartment shall be a maximum 27" deep (left to right). The compartment height (max. depth of 32") is dependent on the overall height limitation of the vehicle.

Each roof compartment shall be equipped with an overlapping hinged lift up tread plate door. These doors shall be constructed of 3/16" tread plate with a 15° break on all sides. An "L" handle latch shall be provided with an automotive 2-point slam latch.

The roof shall be equipped with two (2) Roof Integrated Drains (RID). This shall consist of a full length channel running on each side of the body just below floor. The channel shall be access with slots and route the water to the front and rear of the body where it will drain to the ground in enclosed channels.

This system shall allow full drainage of the upper compartments and roof area and allow the roof area to be washed down allowing debris to pass to the ground.

The walkway floor support shall consist of a 3" x 1-1/2" channel welded full length to the back side of the compartment walls with cross supports welded on 16" centers. A 1/8" tread plate walkway floor shall be provided. The walkway sides shall be .063" aluminum diamond plate.

UPPER BODY LUMBER STORAGE COMPARTMENTS

QTY: 1

A tread plate storage area will be provided on each side of the upper walkway. The storage compartments shall be 12" wide while leaving an adequate walkway. The compartment will be the same height as the coffin compartments. The compartment will have 2 outboard-hinged doors on top and a hinged inboard opening door on the rear. The storage compartments shall be 12' in length.

REAR MUD FLAPS - NO LOGO

QTY: 1

Heavy duty mud flaps with NO logo shall be provided behind the rear wheels.

UPPER BODY TIE OFFS-RECESSED CHROME EYELETS 9,000#

QTY: 1

Four (4) chrome plated steel eyebolts shall be provided and bolted to the upper body sides, (2) on each side. One shall be located at the front body area above the side compartments and one shall be located at the rear body area above the side compartments. The eyebolts shall have a 2" inside diameter and be rated for a 9,000 lb. straight line pull. The eyebolts will be mounted within a recessed pocket to minimize the protrusion of the eyebolts off the side of the body. The recessed pocket interior and an approxiamte 1"

wide flange around pocket opening on the body face shall be provided with a brushed finish stainless steel overlay protection panel.

The anchor points shall be designed and mounted to provide a maximum 9,000 lb. no-yield condition straight line pull at each location. A red engraved tag listing the maximum 9,000 lb. straight line pull shall be provided at each location.

WINCH RECEIVER POINT - REAR OF BODY

QTY: 1

A 2" square receiver point shall be provided below the rear of the body for a portable winch. The receiver point shall be a 2 1/2" x 2 1/2" x 1/4" seamless steel tube welded and gusseted to 3" x 1 1/2" steel channel directly bolted to four points on the chassis frame rails. A 12v electrical connection with a quick disconnect compatible with the portable winch shall be provided adjacent to the receiver point. A plastic end cap shall be provided for the quick disconnect.

WINCH RECEIVER POINT - EACH SIDE OF BODY

QTY: 1

A 2" square receiver point shall be provided beneath the rub rail toward each side of the Rescue body for a portable winch. The receiver point shall be a 2 1/2" x 2 1/2" x 1/4" full width of body seamless steel tube welded and gusseted to 3" x 1 1/2" steel channel directly bolted to four points on the chassis frame rails. A 12v electrical connection with a quick disconnect compatible with the portable winch shall be provided adjacent to the receiver point. A plastic end cap shall be provided for the quick disconnect.

GIRARD ARMLESS AWNING FULL LENGTH DRIVER SIDE (5 C

QTY: 1

A fully retractable Girard RV style awning shall be installed on the Driver's side of the apparatus. The awning shall have lateral arm side rails to eliminate side support arms. The awning shall have a motorized operation utilizing a 110v motor, the motor shall be housed in the roller tube to protect it from the elements. The wind sensing monitor shall be provided to retract the awning in high wind events. A manual crank shall be provided in the event of a power failure. Color of the enclosure shall be white.

RECESSED POCKET FOR ARMLESS AWNING- DRIVER SIDE

QTY: 1

A recessed pocket, full length of the awning shall be provided directly above the side body compartments on the Driver side of the apparatus to protect the awning from damage.

GIRARD ARMLESS AWNING FULL LENGTH OFFICER SIDE (5

QTY: 1

AWNING-ARMLESS RV STYLE

A fully retractable Girard RV style awning shall be installed on the Passenger side of the apparatus. The awning shall have lateral arm side rails to eliminate side support arms. The awning shall have a motorized operation utilizing a 110v motor, the motor shall be housed in the roller tube to protect it from the elements. The wind sensing monitor shall be provided to retract the awning in high wind events. A manual crank shall be provided in the event of a power failure. Color of the enclosure shall be white.

RECESSED POCKET FOR ARMLESS AWNING- PASSENGER SIDE

QTY: 1

A recessed pocket, full length of the awning shall be provided directly above the side body compartments on the Passenger side of the apparatus to protect the awning from damage.

ZICO ROOF ACCESS LADDER

QTY: 1

ZICO FOLDING ROOF ACCESS LADDER

A Zico RL-2-6 Quic-Ladder, swing out down vehicle ladder shall be provided on the right rear body corner. The ladder shall store parallel to the body. A spring loaded locking handle shall keep the ladder

stored to the body. Releasing the lock shall allow the ladder to pull out to allow for climbing at a comfortable and safe angle. The ladder shall automatically latch and will not retract until the scissor lock is raised.

The standard configuration has a two-rung fold-down section and a six-rung main ladder section. All rungs are cast aluminum with a flat nonskid surface for traction and safety. Handrails shall be 1 1/4" heavy walled aluminum tubing, which provides a firm gripping surface.

STAINLESS STEEL SILL PROTECTORS, HIGH SIDE COMPTS

QTY: 1

A 90 deg angle door sill protector, fabricated from 18 gauge brushed finish stainless steel shall be installed on the bottom external edge of each high side compartment door opening to protect this area from paint chipping.

DRIP MOLDING-ALUMINUM BODY

QTY: 1

Drip molding shall be provided directly over all of the compartment doors.

BRUSHED STAINLESS STEEL FRONT BODY OVERLAY

QTY: 1

The front face of the body side compartments, including the entire forward area of the body, shall be overlaid with a brushed stainless steel, full height protection panel.

TREAD PLATE OVERLAY, REAR WHEEL WELL, SINGLE AXLE

QTY: 1

The rear wheel well panel shall be overlaid with aluminum tread plate for added protection against damage.

BODY RUB RAILS, C-CHANNEL

QTY: 1

Sacrificial brushed stainless steel C-Channel style, rub rails shall be mounted at the base of the body, extending outward from the body. The rub rails shall extend the full length of the main body. Rub rails shall be bolted to the body from the bottom side of the compartment area so it does not damage the body side panels on initial impact and provide easy replacement.

ALUMINUM WHEEL WELL LINERS

QTY: 1

The body wheel wells shall be provided with fully removable bolt-in aluminum fender liners. The wheel well liners shall extend from the outer wheel well body panel into the truck frame. The completely washable wheel well liners shall be designed to protect the front and rear compartments and main body supports from road salts, dirt accumulation and corrosion.

POLISHED ALUMINUM FENDERETTES, TANDEM AXLE BODIES

QTY: 1

The rear fenders shall be equipped with easily replaceable, polished extruded aluminum fenderettes.

The fenderettes shall be equipped with a rubber gasket molding between the body panel and the fenderette.

8" REAR TAILBOARD - RESCUE

QTY: 1

REAR BUMPER

An 8" rear bumper shall be provided at the rear of the body for protection. The framework shall and shall be integral to the sub frame with a bolt on tread plate overlay to allow for ease of replacement or repair. The bumper shall be fabricated from aluminum tread plate with mitered corners to prevent snagging.

INTERMEDIATE REAR STEP, 10" X 48" BOLT-ON

QTY: 1

A ten (10) inch deep, bolt on intermediate rear step, fabricated from 3/16" aluminum tread plate, shall be installed.

The step shall be approximately 10" deep x 48" wide.

GRAB RAILS, KNURLED ALUMINUM EXTRUSION

QTY: 1

All hand rails shall be 1-1/4" outer diameter, knurled bright anodized aluminum extrusion, designed to meet NFPA 1901 requirements.

Molded gaskets shall be installed between the handrail stanchion castings and body surfaces to prevent electrolytic reaction between dissimilar metals and to protect paint.

Grab rails shall be provided at the following specified locations.

Additional grab rails shall be provided adjacent to any additional steps specified to comply with NFPA 1901.

TWO (2) VERTICAL RAILS ON REAR

QTY: 1

Two (2) vertical rails shall be mounted on the rear edge of the beavertails, one (1) each side.

PAINTED REAR TOW EYES, BELOW BODY

QTY: 1

Two (2) painted tow eyes shall be furnished on the rear of the vehicle. The tow eyes shall be made from plate steel and shall be bolted directly to the chassis frame rails with grade 8 bolts. The tow eyes will extend below the body. The tow eyes shall be smooth and free from sharp edges. They will have a minimum eyelet hole of 2-1/2". The tow eyes shall be painted.

WARN 9000# PORTABLE WINCH

QTY: 1

A Warn model # 37441, XD9000i, 9000 lb. portable electric winch shall be provided to mount in the specified winch receivers. The winch shall be equipped with the portable framework, 12v quick connection, an automatic, direct drive cone brake, heavy duty thermally protected series wound industrial electric motor and a hardened steel 3-stage planetary gear train.

A 12' remote control head shall be provided with the remote plug mounted directly on the winch housing. The winch shall be equipped with 125' of 5/16" EIPS industrial grade wire rope, including hook. A four way fair lead roller assembly shall be provided at the winch opening.

The winch shall meet all SAE J706 requirements as outlined NFPA -1901.

LITTLE GIANT LADDER MODEL 17 (9'-15')

QTY: 1

A Little Giant model 17 ladder system with mounting hardware shall be provided. This ladder has an extension height ranging from 9'-0" to 15'-0"

CRIBBING COMP'T DRIVER SIDE W/ DROP DOWN DOOR (#25)

QTY: 1

CRIBBING COMPARTMENT (DRIVER SIDE)

One (1) under body cribbing compartment shall be installed under the driver side of the body ahead of the rear wheels. The compartment shall have a #250 capacity, slide out tray equipped with Grant roller bearing slides. An aluminum tread plate door shall be fastened to the roll-out tray. A D-ring handle with a two (2) point latch shall be provided to secure the assembly in the closed position. The compartment shall be 10" H x 48" W. Depth will be as deep as possible, up to a maximum of 30".

CRIBBING COMP'T OFFICER SIDE W/ DROP DOWN DOOR (#2)

QTY: 1

CRIBBING COMPARTMENT (OFFICER SIDE)

One (1) under body cribbing compartment shall be installed under the officer side of the body ahead of the rear wheels. The compartment shall have a #250 capacity, slide out tray equipped with roller bearing slides. An aluminum tread plate door shall be fastened to the roll-out tray. A D-ring handle and two (2) point latches shall be provided to secure the tray in the closed position. The compartment shall be 10" H x 48" W. Depth will be as deep as possible, up to a maximum of 30".

ADJUSTABLE SHELF DESCRIPTION - RESCUE

QTY: 1

Compartment shelving shall be constructed of 3/16" brush finish aluminum with a 2" upward bend at front and rear, and side supports. Shelving shall be vertically adjustable with spring nuts in aluminum strut channel.

Adjustable shelves shall be located as indicated at each compartment description.

ADJUSTABLE SHELF(S) LOCATED L-2

QTY: 2

Located in the left side compartment #2

ADJUSTABLE SHELF(S) LOCATED L-4

QTY: 1

Located in the left side compartment #4

ADJUSTABLE SHELF(S) LOCATED R-2

QTY: 2

Located in the right side compartment #2

ADJUSTABLE SHELF(S) LOCATED R-4

QTY: 1

Located in the right side compartment #4

ADJUSTABLE SHELF(S) LOCATED R-5

QTY: 2

Located in the right side compartment #5

TRANSVERSE ADJUSTABLE SHELF DESCRIPTION

QTY: 1

Transverse compartment shelving shall consist of 3/16" brushed finish aluminum, with a 2" lip on all four (4) sides. The shelving shall be vertically adjustable by mounting in heavy duty aluminum Unistrut "C" channel tracking material, securely fastened to the transverse compartment walls.

Transverse adjustable shelving shall be as indicated at each compartment description.

TRANSVERSE ADJUST SHELF LOCATED, L-3/R-3

QTY: 2

Located in the left/right compartment #3

TRANSVERSE ADJUST SHELF LOCATED, L-3/R-3

QTY: 1

Located in the left/right compartment #3

250#, FLOOR MOUNTED, ROLLOUT TRAY DESCRIPTION

QTY: 1

Slide out floor mount compartment shelving shall be constructed of 3/16" brush finish aluminum with a 2" upward bend at front and rear, and side supports attached to #250 rated slides. Slide out floor mount shelving shall have gas shocks to hold the tray in and out.

Slide out floor mount shelving shall be as indicated at each compartment description.

ROLLOUT TRAY, LOCATED L-1

QTY: 2

Located in the left side compartment #1

ROLLOUT TRAY, LOCATED R-1

QTY: 2

Located in the right side compartment #1

600#, FLOOR MOUNTED, ROLLOUT TRAY DESC. 100% - RES

QTY: 1

Floor mounted roll-out trays shall consist of heavy duty, roller bearing slide tracks with a load rating of 600 pounds, securely fastened to the compartment floor. The slide shall have a pull type latch to secure the slide in the desired position. The slide tracks shall have a 100% extension.

The tray shall be fabricated from 3/16" brushed aluminum with a minimum 2" high flange on each of the four sides to assist in retaining the equipment stored on each tray.

The 600 pound floor mounted roll out trays shall be as indicated at each compartment description.

600# SLIDEMASTER ROLLOUT TRAY, LOCATED L-2 - 100%

QTY: 1

Located in the left side compartment #2

600# SLIDEMASTER ROLLOUT TRAY, LOCATED R-2 - 100%

QTY: 1

Located in the right side compartment #2

600# SLIDEMASTER ROLLOUT TRAY, LOCATED R-5 - 100%

QTY: 1

Located in the right side compartment #5

DRI-DEK MATERIAL ON ALL COMPARTMENT FLOORS

QTY: 1

Dri-Dek brand floor material shall be installed on all compartment floors.

The Dri-Dek shall be custom installed to provide full floor coverage.

FLOORING MATERIAL ON SHELF(S) OR TR

QTY: 25

Floor matting material shall be provided on the noted quantity of specified shelves or roll-out trays.

FLOORING MATERIAL COLOR (BLACK IS DEFAULT)

QTY: 1

The compartment flooring color shall be black.

ROLL-OUT/ DROP DOWN ADJUSTABLE TRAY - RESCUE

QTY: 1

The roll out/tilt tray shall consist of a 3/16" brushed aluminum finished aluminum tray with a minimum 2" lip on all four sides. Heavy duty aluminum Unistrut "C" channel tracking material shall be utilized to securely fasten the slide tracks to the compartment walls, while allowing height adjustment.

The slide mechanism shall consist of a low-weight high-strength plastic to create a robust front bracket to support the aluminum tray. The rear of the tip down tray shall be mounted on a slider with an integral pivot plate. This slider and pivot plate shall be mounted inside an aluminum rail for maximum strength. The tray shall be released from the stowed position with the use of a push button and shall be capable of auto latching to the stowed position. The front handle/latch shall be designed with a double hand hold to control the tray when deployed or stowed. The roll out/tilt tray shall be rated for 330# capacity.

Roll out/Tilt trays be as indicated at each compartment description.

ROLLOUT DROP DOWN TRAY, LOCATED L-1

QTY: 2

Located in the left side compartment #1

ROLLOUT DROP DOWN TRAY, LOCATED L-2

QTY: 1

Located in the left side compartment #2

ROLLOUT DROP DOWN TRAY, LOCATED R-1

QTY: 2

Located in the right side compartment #1

ROLLOUT DROP DOWN TRAY, LOCATED R-2

QTY: 1

Located in the right side compartment #2

ROLLOUT DROP DOWN TRAY, LOCATED R-5

QTY: 1

Located in the right side compartment #5

VERTICAL PULL OUT TOOL BOARD, PACTRAC DOUBLE FACED

QTY: 1

Vertical Pull Out Tool Board, Pactrac Double Faced Extrusion - Rescue

VERTICAL PULL OUT TOOL BOARD(S) LOCATED L-2 (RESCU

QTY: 1

Vertical Pull Out Tool Board(S) Located L-2 (Rescue Only)

VERTICAL PULL OUT TOOL BOARD(S) LOCATED R-2 (RESCU

QTY: 1

Located in the right side compartment #2

FIXED VERTICAL DIVIDERS DESCRIPTION - RESCUE

QTY: 1

Full height, fixed mounted, vertical compartment dividers shall be fabricated from 3/16" brushed aluminum material. The dividers shall extend the full depth of the specified compartment from the floor to the compartment ceiling.

Full height, vertical dividers shall be as indicated at each compartment description.

FIXED VERTICAL DIVIDER, LOCATED L-1

QTY: 1

Located in the left side compartment #1

FIXED VERTICAL DIVIDER, LOCATED R-1

QTY: 1

Located in the right side compartment #1

LOW PRESSURE BREATHING AIR REEL #1

QTY: 1

LOW PRESSURE BREATHING AIR REEL-PLUMBED TO THE AIR STORAGE BOTTLES

HANNAY #EFL-1518-17-18 ELEC. REW. AIR REEL- LP BR

QTY: 1

Low pressure breathing reel #1 will be a Hannay Model #EFL-1518-17-18 electric rewind air hose reel will be provided and plumbed to the onboard storage system. Maximum working pressure will be 300 PSI.

FOUR (4) 6000 PSI DOT STORAGE BOTTLES

QTY: 1

The cascade system shall be provided with an air storage system consisting of:

Four (4) 6,000 psi UN / ISO DOT air storage receivers. Each receiver shall be permanently stamped or identified in accordance with DOT regulations.

Each cylinder shall have a working pressure of 6,000 psi with a 2.4:1 safety factor. The nominal capacity of each receiver shall be 509 cu.ft. at 6,000 psi, 70 degrees F.

Each receiver shall have a shutoff valve. There shall be a label, external of the bottle which reads, "HIGH PRESSURE -6,000 psi BREATHING AIR".

The air cylinders shall be securely mounted at both ends. The mounting system shall be designed to withstand severe service to be expected of this type of apparatus.

DOT BOTTLE(S)

QTY: 1

STORAGE BOTTLE(S) - DOT

STORAGE BOTTLE LOCATION OVER REAR AXLE, BELOW TRAN

QTY: 1

Location of the bottle(s) shall be directly above the body sub frame and below the transverse floor of the compartment above the rear axle. Access shall be provided through an easily removable panel at the front of the REAR compartment and a removable panel, forward of the storage bottles.

TWO POSITION CONTAINMENT FILL STATION

QTY: 1

CONTAINMENT FILLING STATION - TWO (2) POSITION

APPLETON SPACE SAVER FILL STATION

QTY: 1

The fill enclosure shall be an Appleton Space Saver, designed for mobile applications and have the ability to fill two (2) SCBA or SCUBA cylinders, either simultaneously or individually. A prototype of the fill station must have been tested under NFPA-1901 guide lines. A certification certificate shall be available upon request.

The unit shall be constructed of .25 inch plate steel. The fill enclosure door is constructed of .25 inch stainless steel. The cylinder holders shall be lined with a material to protect each cylinder from abrasion. Access to the enclosure for filling cylinders shall be through a manually operated slide-up door and tilt out bottle holder. Three (3) gas filled springs shall be provided to assist in the operation of the fill station door and cylinder holders. A mechanical twist latch shall be provided to secure the door in the closed position. The loading position from a standard truck compartment floor to the center of the bottle valve shall be approximately 13.6 inches in the lower holder and 23.5 inches in the upper holder. The maximum length of either a SCBA or SCUBA bottle with the valve and fill adapter is 29 inches. An automatic, air operated, safety interlock system shall be provided to prevent the accidental filling of a cylinder until the door is completely closed and latched. Two fill hoses shall be provided, each with stainless steel SCBA fill adaptors, and bleeder on/off valves shall also be provided and located inside the fill enclosure.

The fill station shall be designed so if a cylinder should rupture, rapidly expanding air is vented through an opening in the bottom of the enclosure and out through the compartment floor. A breakaway rubber seal shall be provided to seal the compartment floor. The fill station shall be designed to conserve space and

shall not exceed the following dimensions: 13.5" inches wide by 43" inches high by 23.5" inches deep.

Note: the fill station door shall not exceed 53 inches high with the door in the open position. The fill station shall not exceed 425 pounds.

FILL STATION CONTROL PANEL

QTY: 1

FILL CONTROL PANEL

The cascade air system fill control system shall include a control panel with all components, devices and piping necessary to provide breathing air from the storage cylinders to the SCBA bottles being filled. The control panel shall be custom fabricated from stainless steel.

The fill control system shall be designed for the number of storage banks listed above. The system shall permit filling or drawing down each air storage cylinder, independently of each other, while filling SCBA/SCUBA cylinders. The system shall allow regulating the fill pressure into any SCBA cylinder to prevent over-pressurization. A regulated air outlet gauge shall be provided downstream of the regulator to view the regulated pressure.

All gauges provided shall all be liquid filled, 2 1/2", 0-7500 psi. Valves shall be 6000 psi working pressure, soft seat type. The adjustable pressure regulator shall be a one handed, self relieving, 6000 psi type.

At a minimum, the fill control panel shall include the following:

Air storage fill, CGA inlet fitting and control valve

Storage bottle gauge(s) and control valve(s)

Adjustable, self relieving regulator

Regulator outlet pressure gauge

SCBA cylinder(s) fill control valve

SCBA cylinder(s) fill pressure gauge

All panel components shall be clearly marked with permanently affixed, engraved nameplates.

FILL STATION LOCATION IN COMPARTMENT L5

QTY: 1

The cascade containment fill station shall be located in Compartment L5.

300 FEET OF 3/8" LP BREATHING AIR HOSE #1

QTY: 1

The specification for the hose is as follows:

Length of hose: 300'

Inside diameter: 3/8"

Outside diameter: 5/8"

Working pressure: 250 PSI

Burst pressure: 2500 PSI

Color: Yellow

ADJ. REGULATOR AT THE REEL- LP BREATHING AIR #1

QTY: 1

The control panel for the low pressure breathing air reel be located near the reel. The panel be fabricated from stainless steel and be securely mounted. Provided on the panel be an inlet gauge, adjustable regulator and an outlet gauge. The regulator be capable of controlling the pressure between 0-300 psi. The reel shut off valve be located at the main cascade panel.

LP BREATHING REEL #1 HIGH MOUNT- COMPARTMENT R5

QTY: 1

Low pressure breathing reel #1 be mounted in the upper portion of Compartment R5, ceiling or rear wall mounted as space allows.

STAINLESS STEEL ROLLER ASSEMBLY-BOLTED TO REEL #1

QTY: 1

A Hannay, model 4-way stainless steel roller assembly will be provided on the specified low pressure breathing reel #1. The roller assembly opening be the full width of the reel drum. Support brackets for the roller assembly will be bolted to the reel.

BALL STOP ON END OF CABLE

QTY: 1

A cable ball stop will be installed on the cable to keep the end from passing through the roller assembly.

REEL REWIND SWITCH - ADJACENT TO THE REEL

QTY: 1

A reel rewind switch(s) will be provided adjacent to the reel.

GENERAL PAINT DESCRIPTION

QTY: 1

The apparatus body shall be painted with Sikkens paint product. The paint process shall meet or exceed current state regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water, and soil. Contractor shall, upon demand, provide evidence that the manufacturing facility is in compliance with State EPA rules and regulations.

The exterior shall have no mounted components prior to painting to assure full coverage of metal treatments and paint to the exterior surfaces of the body. Any vertically or horizontally hinged smooth-plate compartment doors shall be painted separately to assure proper paint coverage on body, door jambs and door edges.

Paint process shall feature Sikkens high solid LV products and be performed in the following steps:

- Corrosion Prevention - all aluminum surfaces shall be pre-treated with the Alodine 5700 conversion coating to provide superior corrosion resistance and excellent adhesion of the base coat.
- Sikkens Sealer/Primer LV - acrylic urethane sealer/primer shall be applied to guarantee excellent gloss hold-out, chip resistance and a uniform base color.
- Sikkens High Solid LVBT650 (Base coat) - a lead-free, chromate-free high solid acrylic urethane base coat shall be applied, providing excellent coverage and durability. A minimum of two (2) coats shall be applied.
- Sikkens High Solid LVBT650 (Clear coat) - high solid LV clear coat shall be applied as the final step in order to ensure full gloss and color retention and durability. A minimum of two (2) coats shall be applied.

Any location where the material is penetrated after painting, for the purpose of mounting steps, hand rails, doors, lights, or other specified components shall be treated at the point of penetration with a corrosion inhibiting pre-treatment (ECK Corrosion Control). The pre-treatment shall be applied to the aluminum sheet metal or aluminum extrusions in all locations where the aluminum has been penetrated. All hardware used in mounting steps, hand rails, doors, lights, or other specified components shall be individually treated with the corrosion inhibiting pre-treatment.

After the paint process is complete, the gloss rating of the unit shall be tested with a 20 degree gloss meter. Coating thickness shall be measured with a digital MIL gauge and the orange peel with a digital wave scan device.

GENERAL PRIMER & PREP DESCRIPTION

QTY: 1

All exposed welds shall be ground smooth for final finishing of areas to be painted. The compartments and doors are totally degreased and phosphatized. After final body work is completed, grinding (36 and 80 grit), and finish sanding shall be used in preparation for priming.

GENERAL FINISH PAINT DESCRIPTION

QTY: 1

The body shall be finish sanded and prepared for final paint.

Upon completion of final preparation, the body shall be painted utilizing the highest quality, state of the art, low V.O.C., polyurethane base paint.

Finish paint shall be applied in multiple coats to ensure proper paint coverage with a high gloss finish.

FINISH PAINT & PREP

QTY: 1

The applicable areas of the cab shall be finish sanded and prepared for final paint.

Upon completion of final preparation, the cab shall be painted utilizing the highest quality, state of the art, low V.O.C., polyurethane base paint.

Finish paint shall be applied in multiple coats to ensure proper paint coverage with a high gloss finish.

CAB PRIMER & PREP

QTY: 1

The cab primer shall be a two (2) stage process.

First stage shall be a coating with a two part component, self etching, and corrosion resistant primer to chemically bond the surface of the metal for increased adhesion.

Second stage shall be multiple coats of a catalyzed, two component, polyurethane primer applied for leveling of small imperfections and top coat sealing.

CAB UNDERSIDE PAINT - JOB COLOR

QTY: 1

The exposed areas under the cab shall be painted job color to match the exterior cab.

On two tone cabs, this shall match the primary color.

CAB BUFFING & FINISH

QTY: 1

The exposed exterior finish of the cab shall be buffed and detailed.

CAB INTERIOR PAINT

QTY: 1

The exposed interior metal surfaces of the cab shall be finish painted with a textured gray paint.

BODY BUFFING & FINISH

QTY: 1

The visible and exposed areas of the body shall be buffed and detailed.

INSIDE/UNDERSIDE BODY PAINT

QTY: 1

The inside and underside of the complete body assembly shall be painted job color using a Sikkens paint system, prior to installation of the body on the chassis or torque box.

COMPARTMENT INTERIOR FINISH

QTY: 1

The interior of the compartments shall be finish painted job color with a scuff resistant webbing type paint of a contrasting color applied over the painted surfaces.

FENDER COMPARTMENT INTERIOR

QTY: 1

The interior of the fender storage compartments (if fender compartments are specified) shall be finish painted job color.

CAB PAINT SCHEME - FLNA 32073

QTY: 1

The cab exterior shall be finish painted with Sikkens paint system, single color, to match purchaser's furnished paint code.

SINGLE COLOR BODY PAINT SCHEME - FLNA 32073

QTY: 1

The body paint finish shall be Sikkens paint system in a single color to match customer furnished paint codes and requirements.

PINT OF TOUCH-UP PAINT

QTY: 1

One (1) pint of each exterior color paint for touch-up purposes shall be supplied when the apparatus is delivered to the end user.

FINALIZATION & DETAILING

QTY: 1

Prior to delivery of the vehicle, the interior and exterior will be cleaned and detailed. The finalization process of detailing shall include installation of NFPA required labels, checking fluid levels, sealing and caulking required areas of the cab and body, rust proofing, paint touch-up, etc.

FRAME RAIL FINISH

QTY: 1

The chassis frame rails, suspension, axles, and drivelines (with the exception of any PTO drivelines which shall be safety yellow) shall be painted with polyurethane paint to match the body color code prior to the installation of any air lines or electrical system to ensure serviceability.

LETTERING ON FRONT CAB DOORS

QTY: 1

Scotch-Lite with drop shadow lettering shall be provided on the cab driver's and officer's doors per the fire department requirements.

The design of the lettering on the cab doors shall be designed to fit in the 496 sq. inches available.

4" LETTERING ON FRONT CAB DOORS

QTY: 1

Lettering provided on the driver's and officer's cab doors shall be 4" high.

FRONT CAB DOOR TEXT LINE 1 - CORONA

QTY: 1

FRONT CAB DOOR TEXT LINE 2 - FIRE

QTY: 1

FRONT CAB DOOR LETTERING TOP LINE ARCED

QTY: 1

LETTERING ON REAR CAB DOORS

QTY: 1

Scotch-Lite without drop shadow lettering shall be provided on the cab driver's and officer's doors per the fire department requirements.

The design of the lettering on the cab doors shall be designed to fit in the 496 sq. inches available.

REAR CAB DOOR TEXT LINE 1 - SERVING OUR CITY WITH PRIDE

QTY: 1

REAR CAB DOOR TEXT LINE 2 - DATA ERROR

QTY: 1

3" LETTERING ON REAR CAB DOOR

QTY: 1

Lettering provided on the front of cab shall be 3" high.

LETTERING ON REAR BODY

QTY: 1

Scotch-Lite with drop shadow lettering shall be provided on the rear body panel per the fire department requirements.

The design of the lettering on the rear of the body shall be designed to fit in the 167 sq. inches available.

4" LETTERING ON REAR BODY

QTY: 1

Lettering provided on the rear body panel shall be 4" high.

REAR BODY TEXT LINE 1 - CORONA

QTY: 1

REAR BODY TEXT LINE 2 - FIRE

QTY: 1

REAR BODY TEXT LINE 3 - DATA ERROR

QTY: 1

COFFIN COMPARTMENT LETTERING

QTY: 1

Scotch-Lite with drop shadow lettering shall be provided on the coffin compartment per the fire department requirements.

The design of the lettering on the coffin compartment shall be designed to fit in the 2500 sq. inches available.

10" LETTERING ON COFFIN COMPARTMENT

QTY: 1

Lettering provided on the coffin compartment shall be 10" high.

COFFIN TEXT LINE 1 - CORONA FIRE DEPARTMENT

QTY: 1

COFFIN TEXT LINE 2 - URBAN SEARCH & RESCUE

QTY: 1

COFFIN TEXT LINE 3 - DATA ERROR

QTY: 1

PIN STRIPE ON TOP & BOTTOM OF MAIN STRIPE

QTY: 1

Black and gold vinyl accent stripes shall be incorporated into the Scotch-Lite scheme to border the primary Scotch-Lite stripe on the top and bottom edges.

Final layout of this configuration shall be determined by the Fire Department.

SCOTCH-LITE STRIPE

QTY: 1

A four (4) inch high "Scotch-Lite" stripe shall be provided.

The stripe shall be applied on a minimum of 60 percent of each side of the unit, 60 percent on the rear of the unit and 40 percent on the front of the unit.

The Scotch-Lite stripe layout shall be determined by the Fire Department.

WHITE SCOTCH-LITE

QTY: 1

The Scotch-Lite shall be white in color.

GOLD SCOTCH LITE

QTY: 1

The Scotch-Lite shall be gold in color.

4" SCOTCH-LITE "Z" IN STRIPE

QTY: 1

A four (4) inch simple "Z" effect shall be incorporated into the Scotch-Lite scheme on the body.

Final layout of this configuration shall be determined by the Fire Department.

REAR CHEVRON STRIPING

QTY: 1

REAR CHEVRON STRIPING

ENTIRE REAR

QTY: 1

The entire rear of the truck shall be covered with alternating strips of reflective striping.

6" FULL REAR ORALITE CHEVRON STRIPING

QTY: 1

The striping shall be 6" Oralite reflective striping.

RED & FLOURESCENT YELLOW ORALITE V98

QTY: 1

The Oralite V98 reflective tape shall be 012 red and L1 fluorescent yellow in color.

MISCELLANEOUS EQUIPMENT

QTY: 1

The following equipment shall be mounted as specified or as loose equipment provided with the completed apparatus at the time of delivery:

ROAD SAFETY KITS

QTY: 1

A road safety kit shall be furnished with the following equipment:

- 2 1/2 lb. B-C fire extinguisher
- Triangle safety reflectors.

LITTLE GIANT MOUNT

QTY: 1

A Zico LMS little giant mounting bracket(s) shall be provided and mounted with stainless steel hardware at a location specified by the customer. (See PDF for details)

HANDLIGHT/S

QTY: 3

A Streamlight model 44451 orange "Fire Vulcan" C4 LED rechargeable hand light(s) and 12 volt charger shall be installed as directed by the purchaser.

Charger shall be wired to the chassis battery system.

HANDLIGHT/S

QTY: 4

A Streamlight model 90503 orange "Survivor" LED rechargeable hand light(s) and 12 volt charger shall be installed as directed by the purchaser.

Charger shall be wired to the chassis battery system.

WHEEL CHOCKS

QTY: 1

Two (2) ZICO #SAC-44 folding wheel chocks shall be mounted forward of the rear wheels on the driver side below the side running board compartments.

KME WARRANTY, STARTING ON IN-SERVICE DATE

QTY: 1

Warranty coverage by KME will begin when the customer places the unit in service. This date may not exceed 60 days from the date of delivery to the customer.

The Customer must email kmeservice@kmeffire.com within 60 days of delivery, or the warranty start date will default to the original delivery date.

3 YEAR WARRANTY - BASE WITH CUSTOM CHAS

QTY: 1

The proposed vehicle includes a three (3) year new vehicle warranty, upon delivery and acceptance of the vehicle. The warranty will ensure that the vehicle has been manufactured to the proposed contract specifications and will be free from defects in material and workmanship that may appear under normal use and service within the warranty period. The warranty may be subject to different time and mileage limitations for specific components and parts. This warranty is issued to the original purchaser of the vehicle.

The warranty will not apply to tires, batteries, or other parts or components that are warranted directly by their manufacturers. The warranty will not apply to routine maintenance requirements as described in the service and operators manual. No warranty whether express, implied, statutory or otherwise including, but not limited to any warranty of merchantability or fitness for purpose will be imposed.

OVERALL UNIT AND CUSTOM CHASSIS

All components and parts of the vehicle are warranted for a period of three (3) years from acceptance of the vehicle unless excluded elsewhere in this warranty or described as having longer time limitations.

5 YEAR CUMMINS BASE WARRANTY

QTY: 1

The proposed unit will be equipped with a Fire Service rated engine, which will come furnished with a five (5) year Engine Manufacturer's warranty. A copy of the manufacturer's warranty will be supplied to define additional details of the warranty provisions.

5 YEAR ALLISON EVS TRANSMISSION WARRANTY

QTY: 1

The proposed Allison transmission will be provided with a five (5) year warranty. A copy of the Allison transmission warranty will be supplied to the purchaser to define additional details of the warranty provisions.

3 YEAR COOLING SYSTEM WARRANTY - CUSTOM

QTY: 1

Kovatch Mobile Equipment (KME) warrants all Cooling System Equipment components used in the construction of KME Fire Apparatus against defects and workmanship provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original user-purchaser for a period of three (3) years from the date of delivery/acceptance to the original user-purchaser, whichever occurs first.

This warranty applies to both purchased and fabricated, manufacturer supplied coolant system components and is not provided in lieu of any Vendor provided warranties. All coolant system components provided by the engine manufacturer are covered by the engine manufacturer's warranty only.

LIFETIME FRAME RAIL WARRANTY

QTY: 1

The proposed KME custom chassis frame and cross members will be warranted to the original purchaser for the life of the vehicle. A copy of KME's frame rail warranty will be supplied to define additional details of the warranty provisions.

SHEPPARD STEERING GEAR STANDARD - WARRANTY

QTY: 1

The proposed Sheppard steering gear will be warranted for a period of three (3) years from the first date of service or 150,000 miles (241,401 kilometers), whichever occurs first. The product will be free from defects in material and workmanship under normal use in applications approved in advance by Sheppard.

5 YEAR MERITOR 160 SERIES TANDEM AXLE REAR

QTY: 1

The Meritor axle/s shall be provided with a five (5) year warranty. The first two (2) years shall be parts and labor; the remaining three (3) years shall be parts only. Wheel seals, gaskets and wheel bearings shall be covered for one year. A copy of Meritor's warranty shall be supplied to define additional details of the warranty provisions. Vehicles that operate full or part-time outside the United States and Canada shall have a one (1) year, parts only warranty.

10 YEAR CAB STRUCTURAL WARRANTY

QTY: 1

The proposed cab will be warranted against structural defects for a period of ten (10) years from the date of acceptance of the unit. Details of warranty coverage, limitations and exclusions are included in the specific warranty document.

10 YEAR BODY STRUCTURAL WARRANTY

QTY: 1

The proposed body will be warranted against structural defects for a period of ten (10) years from the date of acceptance of the unit. Details of warranty coverage, limitations and exclusions are included in the specific warranty document.

10 YEAR CAB & BODY CORROSION WARRANTY

QTY: 1

The cab and body shall be warranted against rust-through or perforation, due to corrosion from within, for a period of ten (10) years. Perforation is defined as a condition in which an actual hole occurs in a sheet metal panel due to rust or corrosion from within. Surface rust or corrosion caused by chips or scratches in the paint is not covered by this warranty.

PAINT FINISH WARRANTY, TEN (10) YEAR

QTY: 1

The proposed paint finish will be warranted for a period of ten (10) years from the date of acceptance of the unit. Details of warranty coverage, limitations and exclusions are included in the specific warranty document.

5 YEAR LETTERING WARRANTY

QTY: 1

The apparatus manufacturer will provide a five (5) year warranty against defects in material and workmanship for all graphics processes. Any valid claims must be made in writing within 15 days of the determination of any defects to the manufacturer's fire apparatus. The manufacturer will at its option make any necessary repairs either at a local authorized service center or at the factory if required. The manufacturer will make the final decision as to where the repairs are to be made and any transportation cost is the owner's responsibility. The manufacturer will at its option, repair or replace any verified defects in workmanship or materials at no cost to the owner provided all the requirements of this warranty have been met.

The manufacturer will not be liable to the original purchaser or anyone else for consequential, incidental, special or direct damages, including, but not limited to, any claims for loss of profits, downtime, loss of use or inconvenience. THE COMPANY MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, AND SPECIFICALLY, DISCLAIMS ANY IMPLIED WARRANTY INCLUDING THE WARRANTY OF MERCHANTABILITY.

The manufacturer continually strives to improve its products and therefore, reserves the right to make improvements or changes without incurring any obligations to make such changes or additions to equipment previously sold.

1 YEAR BRIGHTWORK WARRANTY

QTY: 1

KME Fire Apparatus (KME) warrants all bright finish components used in the construction of KME Fire Apparatus against defects and workmanship provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original user-purchaser for a period of one (1) year from the date of delivery/acceptance to the original user-purchaser, whichever occurs first.

The expressed warranty excludes corrosion or degradation of bright finished components caused by damage to the component.

FRONT SUSPENSION - STEERTEK - 5 YEAR WARRANTY

QTY: 1

The Hendrickson Steertek NXT front axle shall be provided with a five (5) year parts and labor warranty and shall include the axle and kingpin assembly, the steering arm assembly, and the upper and lower steering knuckle assembly.

The warranty for the integrated suspension components shall be two (2) years or two hundred fifty thousand (250,000) miles, whichever occurs first.

The integrated suspension components covered under this two year warranty are limited to:

- Front Frame Hanger Assemblies
- Rear Shackle Assemblies
- Jounce Stop Assemblies
- Rear Frame Hanger Assemblies
- Shock Absorbers
- Shock Absorber Brackets
- Leaf Spring Assemblies

A copy of the Hendrickson Steertek NXT Warranty shall be provided to define additional details of the warranty provisions.

HENDRICKSON AIR RIDE - SGL AXLE -THREE YEAR

QTY: 1

Hendrickson warrants suspension products manufactured by it to be free from defects in material and workmanship which occur under normal use and service for a period of three(3) years (base year + 2 years).

This warranty will not apply and no warranty of any kind will exist as to any product which has been subject to abuse, misuse, neglect, misapplication or accident of any type or cause or which has been repaired, replaced, substituted or used with parts other than genuine Hendrickson parts or altered by anyone.

CLASS 1 - ELECTRICAL PRODUCT WARRANTY

QTY: 1

Class 1 warrants that any equipment of our own manufacture (or manufactured for us pursuant to our specifications) found to have defects in material or workmanship during normal use and service, will be repaired or replaced (at our option) free of charge, provided that written notice of such defect is received by us within two years (three for liquid-filled gauges) after initial shipment.

All equipment requiring repair or replacement under this warranty will be returned prepaid to Class 1. Such returned equipment will be examined by us and, if found to be defective as a result of materials failure or workmanship, will be repaired or replaced at no charge.

VALOR SEATING 6 YEAR WARRANTY

QTY: 1

Valor will warrant each new seat manufactured, to be free from defects in materials and workmanship when delivered to the original purchaser for a period of six (6) years.

Labor to remove or reinstall defective items will not be covered under this warranty. All warranty claims shall have prior approval from Valor warranty department.

CORROSION TREATMENT

QTY: 1

Upon apparatus completion, underside of the apparatus, from the pump enclosure-back, shall have anti corrosion film applied to help inhibit rust and the corrosion process. The semi-firm wax film shall be applied by air spray method. The film shall be applied as a minimum to the following areas: body substructure, underside of all body compartments, running board supports and rear step supports. No film shall be applied directly to the exhaust system or wheel wells.

NOTE: The film shall remain semi-firm to promote self-sealing. The film may leave a light tinted color to those areas treated.

ADDITIONAL ITEMS SHIPPED WITH VEHICLE

QTY: 1

- 1 - Pint of touch up paint for each color
- 1 - Bag of assorted stainless steel nuts and bolts

VEHICLE CLASS TIER 0

QTY: 1

BREATHING AIR COMPRESSOR, BAUER BP13-E3-TM

QTY: 1

A Bauer BP13-E3-TM Mobile package air compressor shall be provided with the cascade air system. The compressor will have the below specification:

Working pressure: 6,000 psi

Charging rate: 13 scfm

Horsepower: 10 three phase

Including:

- P5 Securus Purification
- Electronic CO Monitor w/Calibration Kit
- Soft Start Electrics
- Wiring Harness

NOTE: The compressor shall be set-up to be controlled from the cascade fill station panel. The body side compartment doors for L3 and R3 shall be interlocked to the compressor start so the compressor shall only start if those specified doors are fully opened.

AIR COMPRESSOR GRATING MATERIAL

QTY: 1

Extruded aluminum grating material shall be installed on both sides of the breathing air compressor to prevent any items stored in the body compartments from coming in contact with the air compressor. The grating material shall be mechanically fastened in place and shall be painted black.