AMBULANCE SPECIFICATIONS

SUBURBAN PURCHASING COOPERATIVE (SPC)
1600 E. GOLF ROAD, SUITE #0700
DES PLAINES, IL 60016

CHASSIS:

The chassis required for this project is specified in detail below. Failure of the bidder to provide the chassis exactly as specified will be grounds for rejection of the bidder's proposal as being non-responsive. Exceptions will be made only if the bidder can prove that a required feature is unavailable from the chassis O.E.M.

CHASSIS: 2018 FORD F-550 4x4 193" WB CAB/CHASSIS:

The vehicle converter shall supply a 2018 193" wheelbase Ford F-550, 4X4 cab/chassis. The chassis shall include Ford's 47L Ambulance Prep Package.

ENGINE AND RELATED EQUIPMENT:

-6.7 L Power Stroke V-8 Turbo Diesel.
-Includes diesel exhaust fluid (DEF)
-Engine Block Heater.
-40 gallon fuel tank mounted between the frame rails aft of the rear axle.
-Manual regeneration switch.

TRANSMISSION:

-Automatic. TorqShift electronic 6-Speed SelectShift with overdrive
-Transmission Oil Cooler.

REAR AXLE:

-Ratio: 4.10:1 limited slip

OVERALL WEIGHT RATINGS:

-GVW:	18,000 lbs.
-Front Springs:	7,000 lbs. Combined Rating @ Ground
-Shock Absorbers:	1.38" Front and Rear, Heavy Duty Gas Type
-Stabilizer Bar:	Front and rear

TIRES AND WHEELS:

-Quantity of seven (7) tires with spare shipped loose
-Tire size to be 225/70R19.5 Load Range 'G'
-Rear tires: All season radials (option TFB)
-19.5" aluminum outer wheels with bright hub covers/center ornaments (option 64D)
-Spare steel wheel
-Tire jack

BRAKES:

-Front and Rear:	Four wheel disk with antilock
-Power Assist:	Hydro Boost
-Parking Brake:	Foot Operated, hand release

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INTERIOR APPOINTMENT STANDARDS:

-HD Ford XR-50 power steering
-Tilt/telescoping steering with factory speed control
-Dual padded sun visors
-Power door locks
-Power windows
-Power/heated mirrors with manual telescoping/folding functions and integrated clearance lamps/turn signals (option 54K)
-12V power points
-Adjustable gas and brake pedals
-Heat/Air conditioning
-Dual O.E.M. cloth-covered captain's chairs
-Rubber floor covering
-Second generation driver and passenger air bags
-An AM/FM stereo/CD/MP3 player with (5) speakers installed in cab
-4.2 LCD productivity screen in instrument panel
-Factory gauges for oil pressure, fuel capacity, and water temperature. The converter-added digital display shall provide both ammeter and voltmeter.

ADDITIONAL APPOINTMENT STANDARDS:

-XLT trim package
-Chrome front bumper and grille surround
-Tinted glass
-Inside rear view mirror
-Dual electric horns
-Interval wipers
-L.E.D. ICC lights
-Halogen jewel effect headlights
-Daytime running lights
-Sound reduction package
-Integrated auxiliary idle control
-Auxiliary heat/AC connections
-Front license plate bracket
-Under hood service light
-Two front tow hooks
-Front mud flaps
-SOS Post Crash Alert System
-Perimeter Anti-theft alarm
-Remote keyless entry
-Shift-on-the-Fly 4-wheel drive system

BATTERIES:

The vehicle shall be equipped with two (2) 750 cca batteries located in the OEM location under the chassis hood. The total cca rating for this vehicle shall be 1,500 cca.

ALTERNATORS:

Dual O.E.M. Motorcraft alternators shall be installed by the chassis manufacturer. These alternators shall be internally regulated and shall provide a total of 377 amps.

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WARRANTY:

The chassis manufacturer's standard vehicle warranty policies shall apply. In addition, the engine and transmission (power train) shall be provided with the longest available warranty period provided by the chassis manufacturer as described below.

Coverage: 8-YEARS/150,000 MILES (WHICH EVER OCCURS FIRST)

FORD GPC DISCOUNT:

The manufacturer's current GPC discount shall be applied. The current GPC credit is $4,698.00.

!!! ALL PURCHASER'S MUST PROVIDE A VALID FORD FLEET IDENTIFICATION NUMBER (FIN CODE) IN ORDER TO RECEIVE THIS DISCOUNT.

!!! THIS DISCOUNT MAY VARY THROUGH THE MODEL YEAR.

EXTENDED POWER TRAIN WARRANTY COVERAGE:

The engine and transmission (power train) shall be provided with the longest available warranty period provided by the chassis manufacturer.

Coverage: 8-YEARS/200,000 MILES (WHICH EVER OCCURS FIRST)

PASS-THROUGH CONFIGURATION:

The chassis cab shall be modified by the successful bidder to allow for a pass-through opening between the cab and the patient compartment. The required opening shall be cut out of the back of the cab. A flexible weather-tight Hypalon bellows shall be installed around the perimeter of the opening between the back of the cab and the front of the module body. A sliding window shall be provided on the cab side of the pass-through opening. All of the work required under this section shall be performed by the successful bidder. The work shall not be performed by a third party vendor. This shall guarantee a consistent level of quality and warranty protection while assuring that the work is engineered specifically for use with the module body and other equipment as specified.

CHASSIS INTERIOR COLOR:

The chassis interior shall be O.E.M. gray.

CHASSIS HARDWARE AND ACCESSORIES:

The items to follow represent chassis modifications, hardware, and accessories that are required. Failure to provide these features will be cause for rejection of the bidder's proposal as being non-responsive.

DIESEL EXHAUST FLUID (DEF):

The fill for the DEF tank will be located in the driver's side of the body forward of the rear wheels. A label stating "DIESEL EXHAUST FLUID (DEF)" will be installed next to the fill neck.

MUD FLAPS, REAR:

The vehicle converter shall install individual rubber mud flaps behind each rear wheel. The mud flaps may incorporate the converter's corporate logo provided that the logo is incorporated into the rubber material and not a separate piece.

DOCK BUMPERS:

The rear step end caps shall include two heavy duty rubber dock bumpers installed on the outer face of the diamond plate. These bumpers shall serve to protect the diamond plate from damage due to minor contact. Each bumper is to be approximately 6"W.

REAR STEP/BUMPER REINFORCEMENT:

The standard rear step shall be reinforced with 2" x 2" steel angle for added impact protection.

DIAMOND PLATE RUNNING BOARDS:

Diamond plate running boards shall be installed on each side of the cab at the cab entry points. The running boards shall be .125" thick 3003-H14 alloy polished aluminum diamond tread plate. The design of the running boards shall include multiple perforations for better foot traction and drainage. They shall include a splash shield at the forward end to protect the vehicle from spray and road debris.

REAR STEP/BUMPER ASSEMBLY:

The rear of the vehicle shall be equipped with a step/bumper assembly to be fabricated from .125" polished aluminum diamond Treadplate. The assembly shall be spaced out from the rear kick plate a minimum of 1.5". The center section of the assembly shall pivot up and over center on two (2) .5" bolts to stay in the 'up' position. This section shall be a minimum of 9.5" deep and shall be constructed with grip-strut on the stepping surface to provide for better footing. The ends of the assembly shall be fixed diamond tread plate. The distance between the top of the step and the ground shall not be less than 16". The fold-up portion of the step shall be firmly held down with two (2) pin and socket holders to prevent rattling while the vehicle is in motion. All steel components of the bumper assembly shall be rustproof for enhanced durability.

!!! INSTALL A STAINLESS STEEL CAP ON THE OUTER EDGE OF THE CENTER STEP TO PREVENT DAMAGE TO THE COT LOGS.

LIQUID SPRING REAR SUSPENSION WITH DUMP:

The vehicle shall include a Liquid Spring system installed in the rear suspension. The system shall include a dump feature, wired through the left rear entry door magnetic switch, to lower the cot loading height.

SUSPENSION OVERRIDE SWITCH:

A manual dump override switch shall be installed as noted below. This switch shall override the dump activated by opening of the left rear patient compartment entry door.

Switch Location: CURBSIDE REAR ENTRY DOOR PANEL ABOVE DOOR LOCK BEZEL.

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BATTERIES:

The battery system, as noted in the "Chassis" section of this specification, shall include two OEM batteries to be installed in the manufacturers under hood battery tray locations.

BATTERY HEAT SHIELDS:

Battery heat shields will be provided and installed for all batteries located beneath the hood.

REVERSE ALARM:

An audible alarm shall be installed to activate when the vehicle is placed into reverse gear. There shall be, installed on the front console and wired through the vehicle electrical system, a momentary cutoff switch to disable the alarm. This switch shall automatically reset each time the vehicle is placed into reverse gear.

AM/FM/CD PLAYER:

The OEM AM/FM/CD player shall be installed in the cab and wired to the OEM cab speakers. This unit shall also be capable of being wired to patient area speakers should they be required within this specification.

CONVERSION:

The following section describes the required body design, manufacturing process, and materials. Adherence to this section is of extreme importance to this purchaser due to space requirements and safety concerns. The bidder must meet this section as closely as possible without utilizing experimental or prototype designs in order to be considered for bid award.

MINIMUM BODY DIMENSIONS:

The completed vehicle shall have the following minimum dimensions:

(Exterior)
-Height: 91"
-Width: 96.25"
-Length: 173"
(Interior)
-Height: 74"
-Aisle 48"
-Length: 169"
OVERALL DIMENSIONS (Including Chassis, Module and Step):
-Height: 114"
-Width: 100"
-Length: 311"

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MODULAR BODY STRUCTURAL DESIGN REQUIREMENTS:

The module body shall be designed and fabricated with the following key elements in mind:

1. The greatest possible load carrying capacity is desired.
2. The safety of all vehicle occupants is of paramount concern.
3. The body design, including construction materials and fabrication techniques shall be proven to be durable.
4. The body shall be easily retrofitted to a new chassis should that need ever arise.

With these concerns in mind the following requirements have been established for the purposes of this specification:

The vehicle converter shall design and construct its own module bodies, and maintain an engineering staff at its manufacturing facility to handle any custom body changes that may be necessitated by this design. It is the intent of this purchaser to receive a finished product of the highest standards of quality available. Vehicle manufacturers who design and build their own bodies and who have the expertise of an engineering staff will possess a greater capacity as far as handling a custom project of this type than manufacturers who purchase their bodies from an outside vendor. Accountability and quality of the design and construction of the body are enhanced when the vehicle converter manufactures the body.

GENERAL BODY DESCRIPTION:

The construction process described within this specification will ensure that the body shall remain structurally intact. However, to achieve this level of quality and durability, the module body, including all doors, must be constructed correctly initially. This specification requires that the module body, including all doors, be built within a tolerance of one five-thousandths of one inch. To achieve this the vehicle manufacturer must use, as standard practice, precision computerized equipment such as found in Strippet machines and microprocessor controlled milling machines and chop saws. Use of precision equipment will ensure that all door openings, door handles and latches, body windows, and warning light assembly installation locations are of the correct size and square to the body. Cutting done by hand, such as with a jigsaw, is not desired unless it involves the chassis, or unless a warning light assembly must be located in such a way that it depends on the layout of the finished vehicle. (E.g. when a light must be centered within a paint stripe since the exact stripe location will not be determined until the module is built and mounted.) In addition, utilization of computerized equipment will simplify the production of replacement body panels in the event of an accident since the computer can duplicate a given part exactly. This includes documentation of all body light locations.

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PAYLOAD REQUIREMENTS:

The vehicle payload shall meet or exceed that called for in the current KKK-A-1822 specification. The vehicle manufacturer shall, upon notice by this purchaser, provide a written statement from an independent engineer that the model being offered has met this set of criteria. Before delivery of the completed unit the manufacturer shall weigh the vehicle. A written statement of those weights shall be affixed to the inside of the street side front #1 compartment door. This purchaser reserves the right to have the finished vehicle weighed independently upon delivery. If it is found that the written statement of weight provided by the manufacturer is inaccurate beyond what may be reasonably explained as a slight difference in the calibration of the scales, then the vehicle will be rejected. It should be noted that this purchaser, while interested in attaining the greatest possible payload, is unwilling to compromise on the structural requirements of a strong, durable, and safe body. All bidders must understand these factors supercede concern over payload, and that the lightest body (greatest payload) will not necessarily be deemed sufficient to meet the stringent quality and safety requirements set forth herein.

MODULE BODY CONSTRUCTION AND WARRANTY:

The module body shall be constructed per the following detailed specifications. Generally speaking the body shall be of all-aluminum construction. Aluminum is shown to reduce weight over several other materials. It also possesses anti-corrosion properties that are essential for a vehicle of this type. The exact aluminum material requirements are explained in further detail below. The choice of materials and the design shall allow the manufacturer to warrant the materials and workmanship of the module body for a period of thirty (30) years as set forth in the warranty section of this specification. The manufacturers structural warranty shall specifically cover:

-The continued and correct alignment of both compartment and access doors.
-Seam or joint separation in door construction.
-Aluminum interior cabinetry.

The warranty shall be fully transferable to a new owner should the vehicle ever be sold. In addition, should the manufacturer bidding this proposal re-chassis the vehicle within the period of the initial structural warranty, then an additional 5 years shall be added to the remaining amount of warranty coverage left at the time of re-chassis. This warranty shall be revalidated in five-year increments each time the body is mounted to a new chassis provided that the warranty has not expired, that this purchaser authorizes any necessary repairs, and provided that the original manufacturer performs the re-chassis.

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CORNER POST SUPPORTS:

The body structure must be able to support the loaded weight of the vehicle in the unlikely event of a rollover. A structure is required that will enhance the safety of both patients and attendants in the event of an accidental collision. The foundation of a solidly built module body is the utilization of strong corner posts in both the sidewalls and the roof. A one-piece 90-degree radius post is required. The posts shall include a full length W shaped extrusion that forms a fully encased web inside the post for strength. This reinforcing member shall angle inward just before it joins the radius to form a small slot where the edges of the aluminum skin will be inserted prior to the final welding. Because the structural integrity of a body is derived from the corner posts, subfloor, and framework, corner posts that are a part of the exterior body skin (e.g. rolled corner posts) will not be considered, nor will corner posts which do not have an integral center reinforcement as part of the extrusion.

CORNER POST STRENGTH:

The corner post extrusions shall possess a minimum ultimate tensile strength of 27,000 psi (6063-T5).

ROOF EXTRUSIONS:

The horizontal roof extrusions shall conform to the same construction description as the vertical wall extrusions. They will, however, include an extruded drip rail as a part of the one-piece posts. Because the drip rail is a part of the post itself there will be no seams between the rail and the body above the rail. In addition there shall be drip rails installed above all body doors that are not full height. These rails shall attach via a durable adhesive.

WALL AND ROOF SKIN SUPPORTS:

The exterior wall and roof skins shall be supported on the inside by 2" square tubing with .125" wall. These structural supports shall be strategically located at the load bearing points of the module body. The roof structural support beams shall be spaced on minimum 12" centers for adequate load support. Wall tubing of .125" thickness or less will not be acceptable.

HORIZONTAL WALL SUPPORT:

In addition to the vertical wall supports there shall be a horizontal beam, located in the beltline area, to provide additional protection in the event of a side body collision.

GUSSET ENHANCEMENT:

Gusset supports, made from 2" square tubing, shall be installed throughout the vehicle for added strength. Each gusset shall be a minimum of 5" long at its longest point. A minimum of twenty-four (24) of these gussets shall be welded into the vehicle support structure. Areas of installation shall include but not be limited to: all door openings, all body corners, and above all wheel wells. Designs that utilize no gussets, or gussets of lesser material size or strength, are not acceptable.

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EXTERIOR BODY PANELS:

The materials selected for the body skin have been chosen because of this vehicles expected heavy-duty cycle and the good wear characteristics that this material has shown in the field. The material shall be a minimum 5052-H34 alloy with an ultimate tensile strength of 38,000 psi. This material has been chosen because it is less prone to fail due to stress than other weaker materials such as 5052-H32 alloy.

EXTERIOR BODY PANELS (PART 2):

The thickness required for exterior body panels is:
-Side, front, and rear walls: .125"
-Ceiling and floor panels: .090"
Note: The roof shall be constructed with a single sheet of 5052-H34 .090" thick aluminum. This one-piece construction is preferred over a multiple piece design. The roof shall incorporate a 3/8" crown designed to allow water to drain.

FLOOR CONSTRUCTION:

Floors that are uneven or are incapable of adequately supporting the load being carried on the vehicle are unacceptable. For that reason thin floor panels and/or a lack of floor supports are not desirable. To prevent buckling, sagging, oil canning or any other structural breakdown of the flooring system a detailed description of the required construction process is provided.

The body subfloor shall be constructed of .090" 5052-H34 aluminum. The floor, from the front to the rear and from curbside to street side shall be supported by a minimum 2" x 3" tubular beams with a .25" wall. The floor just behind the axle shall be supported by a minimum 1.5" x 3" tubular beam with a .25" wall. All beams shall be strategically located at the load bearing points of the floor and welded into place. The interior of this vehicle shall contain no wood or wood products of any kind. The subfloor, above the aluminum sheet shall be specially constructed to provide both acoustic and thermal protection for the patient interior. It shall consist of the .090" aluminum with tubular understructure as noted above. The underside of this area is to be sprayed with a sound reduction coating. In addition, a .125" damping pad, a .125" sound barrier sheet, and a .625" aluminum composite floor panel shall be installed prior to installation of the vinyl floor covering. The purchaser reserves the right to inspect the process proposed by the bidder and to make determinations regarding the acceptability of that process. The resultant subfloor shall have no organic, wood, or wood products and shall be guaranteed against rotting or water absorption for a minimum of fifteen years. It shall not support or attract mold or fungus.

SKIN TO SUPPORT ATTACHMENT:

All exterior aluminum body panels shall be attached to the underlying structural supports via high performance polyurethane two sided tape. The tape shall have a polyurethane foam core for environmental resistance and an acrylic adhesive for a durable bond. The tape will be used as an insulating agent to hold the panels tightly against the structural supports, thus eliminating vibration and oil-canning. In addition to the tape attachment system, all panels shall be welded to structural members at the perimeters only. Welding in the center of the panels is not desired as the process will cause heat distortion of the body panels and lessen the overall quality of the finished appearance. Use of the tape, as described here, will eliminate heat distortion without damaging the structural integrity of the module body.

SKIN TO SUPPORT ATTACHMENT (PART 2):

Each body panel shall be welded to all horizontal frame members, including the roof extrusions. In addition, the panels shall be welded to the vertical corner posts. In the case of the roof, the perimeter of the one-piece roof sheet shall be stitch welded. This method of attachment shall provide a total welding application to the entire perimeter of the body skin and a taped/insulating application to the interior surfaces of all walls. Methods of panel attachment that utilize rivets will not be acceptable.

STRUCTURAL INTEGRITY VERIFICATION:

Structural integrity, as stated elsewhere in this specification, is of extreme importance to this purchaser. As such, it is required that the manufacturer maintain a program of simulated crash tests. The manufacturers Hygee sled testing program must be current and have been maintained on a continuous basis for a period of time not less than ten years. In addition, the sled testing shall have subjected a body, built to the above-written specifications, to a minimum of 30 G's in both side and frontal impact conditions. Neither photographs of vehicles that have been involved in accidents, nor statements or observations relevant to an accident, be it from a customer or a manufacturers representative, shall suffice as a substitute for this requirement. The sled testing must take place in a controlled environment whereupon meaningful engineering data can be gathered and applied to the structural design of the module body. Accidents that take place outside of this controlled environment do not yield any meaningful data. Therefore, real world accidents are considered anecdotal and cannot realistically be used by the manufacturer to judge the safety of a design.

MODULAR DOOR DESIGN:

Door panel separation, dirt accumulation at seams, paint imperfections, misalignment, and even malfunctions whereupon the door cannot be operated have been observed in many styles of door construction. These problems, along with the expected rugged use of the vehicle doors, shall be eliminated with a good overall design and construction process. With these thoughts in mind the modular doors shall be constructed as follows:

OUTER DOOR SKIN:

The door facing and edges shall be formed from a single sheet of aluminum. The aluminum used for the doors shall not be less than 5052-H34 alloy with an ultimate tensile strength of 38,000 psi. The material shall be .125" thick. All module doors shall be flush fit to the body side. The door panels must be welded at the corners.

INNER DOOR REINFORCEMENT:

Each door shall include an internal extrusion for added reinforcement. The extrusions shall extend around the entire perimeter of the door. Additional reinforcement shall be installed through the center of the door and around each window where applicable. In addition to the extrusions reinforcing each outer door pan, the extrusions themselves shall be reinforced through a dual joining method. First, each mitered corner, where the frame corners join, shall be fitted with a one-way solid aluminum insertable key. This key shall prevent the corner from pulling apart, and shall act as a solid aluminum internal gusset. Secondly, each corner where the frame joins shall be welded to further prevent any separation. The end result will be a rigid door that will not bend or flex and that will eliminate the other commonly seen structural defects described above.

INNER DOOR PAN:

An inner door pan shall fit flush with the inner edges of the door. Inner door pans that do not fit flush will have sharp or ragged edges exposed and will not be acceptable. The panels must be attached to the door structure with machine screws and "T" style Nutserts to prevent spinning stripping. Sheet metal screws or rivets will not be accepted. Lastly, a closed cell cross-linked polyolefin foam tape shall be used beneath the inner door panels to isolate the panels from the door frames. This process will prevent door rattling.

DOOR SEAL:

All module doors shall incorporate an extruded rubber seal located around the perimeter of the door. The seal shall insert into a groove in the inner door extrusion. Seals that are installed around compartment openings will be easily torn by the movement of equipment across them. In addition, glue will not be permitted except in the case of a double door compartment. The requested design does not include a groove on the underlying door edge of a double door compartment. That edge alone will require an adhesive. Glue for all seals is not desirable because of increased replacement time and insufficient durability.

DOOR JAMB:

All doorjambs must be separate from the body skin and must be welded to the 2" x 2" tubular body frame members so as to ensure continued door alignment and proper latching. The compartment frame shall be designed in such a manner as to provide extra protection around the compartment openings. The reinforcement tube shall be at least 1" wide. For added strength, the frame shall be at least .188" thick where screws are attached.

Prior to door installation the doors shall be true fit to the doorjambs. The fitting, prior to installation, shall provide added assurance that the door aligns properly with the doorjamb.

HINGING:

All doors shall have full-length stainless steel hinges. The hinges shall be .070" thick and shall incorporate a .25" diameter pin.

All hinges shall have un-slotted mounting holes for an exact and permanent installation. Hinges that utilize slotted mounting holes are unacceptable because of the continued adjustments that they require.

There shall be an anti corrosive material installed along the length of the hinge where the hinge meets the door frame to separate the stainless hinge from the aluminum body. This material shall be transparent so as not to be visible at any point while the door is being used.

HOLD-OPEN DEVICES:

The following door hold-open devices shall be installed:

-Compartment doors: Gas filled, 100-degree extension actuator
-Side access door: Gas filled, 110-degree extension actuator
-Rear doors: Cast Products grabber style devices

Spring-loaded devices are not desired because of their weaker holding capabilities and a lack of smooth door operation.

DOOR HANDLES AND LATCHING SYSTEM:

A door latching system is required that provides safety to all on-board personnel and security to all stored equipment. The patient area must be capable of being quickly secured. The following minimum features are to be designed into the module door latching system:

-All door handles shall be rugged automotive style handles that are near flush with the outer door panel.
Each handle shall actuate a Nader rotary safety latch.
-The handle and latching system shall be designed by their manufacturer to accommodate electromagnetic activation. "D" ring style handles that must be retrofitted for this application are unacceptable.
-The entire exterior handle assembly shall be Tri/Mark Series #30-1875 cast metal that is chrome plated and buffed to a high luster.
-All doors shall have an exterior key lock.
-All three patient area access doors shall include both interior and exterior latch activators. The rear doors shall have an activator installed on the outside of each door. The interior activators shall be located in a recessed pan on the door. A manual lock/unlock device shall be located within the pan. This pan shall be powder coated cast aluminum for extra durability and for ease of decontamination. No plastic products shall be used for this application.
-Exterior double door compartments shall include two exterior latching devices, one on each door.
-The rear entry doors shall incorporate an emergency release lever located at each rotary latch. The emergency release handle shall allow emergency exit if a latch failure would occur.

The latching system shall be a proven system that has been subjected to the simulated sled tests as described elsewhere in this specification. Latching systems that have not been subjected to these tests will not have reliable data available as to installation and retention characteristics. Again, only controlled testing fulfills this requirement. Neither pictures of accidents, nor common observations gathered from damage surveys will suffice.

PATIENT AREA DOOR OPENINGS:

REAR DOORS:

Two (2) doors shall be provided at the rear of the module body. The overall opening of the access to be a minimum of 60" in height x 48" in width. Both inside and outside door handles shall be installed on each rear door. Left rear doors that can only be activated from the inside are not acceptable. These doors are to incorporate emergency release levers as described above.

SIDE DOOR:

One (1) side door shall be provided on the curb side of the module body. The opening shall have minimum overall dimensions of 71.1" in height x 30" in width.

INSULATION:

The patient area, including the doors, shall be insulated with 2" Technicon polyfiber for both thermal and acoustic insulation. The headliner area of the vehicle shall also include a barrier insulation of Reflectix material for increased protection.

SWEEP OUT COMPARTMENT FLOORS:

The floor of the compartment(s), as noted below, shall be flush with the door frame so as to provide a sweep-out style compartment bottom. There shall be no lip at the forward edge of the compartment bottom, or any other obstruction, that may hinder the purchaser's ability to sweep the compartment free of dirt and/or debris.

Quantity: (6)
Locate: ALL COMPARTMENTS.
Note: FLOORS TO BE FLAT ALUMINUM WITH A D/A FINISH - DO NOT PAINT.

STREETSIDE FRONT COMPARTMENT (D1):

The compartment described above shall feature the following minimum dimensions:

Clear Door Opening:	18.7" wide x 87.1" high
Actual Compartment	24.2" wide x 88.1" high x 20.3"

This compartment shall be accessed through a single hinged door meeting the standards for door construction, hinging, and latching outlined within this specification. The compartment shall house the vehicle's primary O2 cylinder and shall be vented to the outside in such a way as to prevent moisture from entering the compartment. Under no circumstances shall vents be installed within the compartment door. The compartment itself shall be constructed as an individual box and welded into the body structural framing. The material used shall be .125" polished aluminum diamond plate that is continuously welded at all seams. The compartment shall include two strips of LED lights, one to either side of the compartment door, to provide lighting inside the compartment.

!!! INCLUDE A CAST PRODUCTS EXTERIOR VENT ON UPPER PORTION OF DOOR.

DIVIDER FIXED, VERTICAL COMPARTMENT:

A 16" vertical divider shall be installed as noted below. The divider shall be non-adjustable and shall be fabricated from the same material used in the construction of the compartment in which it is to be installed.

Quantity: (1)
Locate: 11.5" FROM RIGHT HAND WALL.

STREETSIDE INTERMEDIATE COMPARTMENT (D2):

The compartment described above shall feature the following minimum dimensions:

Clear Door Opening: 51.8" wide x 32.3" high
Actual Dimension: 55.5" wide x 33.5" high x 20.3" deep

This compartment shall be accessed through double hinged doors meeting the standards for door construction, hinging, and latching outlined within this specification. A portion of this compartment shall house the vehicle's required onboard electrical components as specified for use on this vehicle. The vehicle's power distribution box shall be located on the left-hand wall. The remainder of the compartment shall be utilized for storage of miscellaneous items as required by this purchaser. This compartment shall be vented to the outside in such a way as to prevent moisture from entering the compartment. Under no circumstances shall vents be installed within the compartment door unless they are required for airflow to equipment installed within this compartment. The compartment itself shall be constructed as an individual box and welded into the body structural framing. The material used shall be .125" polished aluminum diamond plate that is continuously welded at all seams. The compartment shall include two strips of LED lights, one to either side of the compartment door, to provide lighting inside the compartment.

SHELVING FOR DOUBLE-DOOR EXTERIOR COMPARTMENT:

An adjustable shelf shall be installed in the location(s) noted below. All shelving is to be fabricated from 3003-H14 aluminum diamond plate. This material shall be .125" thick. All shelving is to include a 2" integral lip to prevent equipment from sliding off of the shelf. The compartment light shall meet the lighting criteria as described elsewhere within this specification.

Quantity: (1)
Locate: BETWEEN P.D. BOX AND RIGHT HAND WALL - PROVIDE MAXIMUM ADJUSTABILITY.

SHELF LINING:

The compartment shelving shall be sprayed with a textured scratch resistant coating as noted below.

Color: GRAY.

!!! COAT THE INTERIOR SURFACES OF THE SHELF TRAY ONLY.

EXPANDED METAL CAGE:

The manufacturer shall provide an expanded metal cage around the installed electrical equipment as noted below. The cage shall include access ports with grip-lock around the edges to protect against sharp corners.

Quantity: (1)
Locate: IN CONJUNCTION WITH CEILING MOUNTED ACCESSORIES, INCLUDING AIR HORN COMPRESSOR MOUNTED ON SHELF IN UPPER RH CORNER.

STREETSIDE REAR COMPARTMENT (D3):

The compartment described above shall feature the following minimum dimensions:

Clear Door Opening: 32.0" wide x 58.3" high
Actual Dimension: 36.6" wide x 59.5" high x 20.3" deep

This compartment shall be accessed through double hinged doors meeting the standards for door construction, hinging, and latching outlined within this specification. This compartment shall be utilized for storage of miscellaneous items as required by this purchaser. This compartment shall be vented to the outside in such a way as to prevent moisture from entering the compartment. Under no circumstances shall vents be installed within the compartment door. The compartment itself shall be constructed as an individual box and welded into the body structural framing. The material used shall be .125" polished aluminum diamond plate that is continuously welded at all seams. The compartment shall include two strips of LED lights, one to either side of the compartment door, to provide lighting inside the compartment.

!!! INCLUDE A CAST PRODUCTS EXTERIOR VENT ON UPPER PORTION OF RIGHT-HAND DOOR.

SHELVING FOR VERTICAL EXTERIOR COMPARTMENT:

An adjustable shelf shall be installed in the location(s) noted below. All shelving is to be fabricated from 3003-H14 aluminum diamond plate. This material is to be .125" thick. All shelving is to include a 2" integral lip to prevent equipment from sliding off of the shelf. The compartment light shall meet the lighting criteria as described elsewhere within this specification.

Quantity: (1)
Locate: UPPER PORTION OF COMPARTMENT - PROVIDE MAXIMUM ADJUSTABILITY ABOVE HORIZONTAL C-CHANNELS.

SHELF LINING:

The compartment shelving shall be sprayed with a textured scratch resistant coating as noted below.

Color: GRAY.

!!! COAT THE INTERIOR SURFACES OF THE SHELF TRAY ONLY.

ADDITIONAL ALUMINUM "C" CHANNEL:

Install aluminum 'C' channel as noted below. The channel shall be welded into place and is in addition to channel already present in the specified area for shelving and/or any other required equipment. Priced per c-channel. Standard tool boards require two c-channels.

Quantity: (2)
Location: MOUNT HORIZONTALLY ON BACK WALL FOR SCBA BRACKETS.

!!! EXACT SPACING AND LOCATION TO BE DETERMINED AT PRE-CONSTRUCTION MEETING.

CURBSIDE REAR COMPARTMENT (P4):

The compartment described above shall feature the following minimum dimensions:

Clear Door Opening: 25.0" wide x 81.1" high
Actual Dimension: 29.7" wide x 82.1" high x 20.3" deep

This compartment shall be accessed through a single hinged door meeting the standards for door construction, hinging, and latching outlined within this specification. This compartment shall be utilized for storage of miscellaneous items as required by this purchaser. This compartment shall be vented to the outside in such a way as to prevent moisture from entering the compartment. Under no circumstances shall vents be installed within the compartment door. The compartment itself shall be constructed as an individual box and welded into the body structural framing. The material used shall be .125" aluminum that is continuously welded at all seams. The compartment shall include two strips of LED lights, one to either side of the compartment door, to provide lighting inside the compartment.

!!! INCLUDE A CAST PRODUCTS EXTERIOR VENT ON UPPER PORTION OF DOOR.

DIVIDER FIXED, VERTICAL COMPARTMENT:

A 16" vertical divider shall be installed as noted below. The divider shall be non-adjustable and shall be fabricated from the same material used in the construction of the compartment in which it is to be installed.

Quantity: (1)
Locate: 12" FROM RIGHT HAND WALL.

SHELVING FOR VERTICAL EXTERIOR COMPARTMENT:

An adjustable shelf shall be installed in the location(s) noted below. All shelving is to be fabricated from 3003-H14 aluminum diamond plate. This material is to be .125" thick. All shelving is to include a 2" integral lip to prevent equipment from sliding off of the shelf. The compartment light shall meet the lighting criteria as described elsewhere within this specification.

Quantity: (2)
Locate: ON RIGHT HAND SIDE OF DIVIDER.
- BOTTOM SHELF TO BE 40" ABOVE COMPARTMENT FLOOR.
- DO NOT INSTALL SHELF TRACK BELOW LOWER SHELF.

SHELF LINING:

The compartment shelving shall be sprayed with a textured scratch resistant coating as noted below.

Color: GRAY.

!!! COAT THE INTERIOR SURFACES OF THE SHELF TRAYS ONLY.

STAIR CHAIR POCKET:

A pocket that is 40" high x 10" wide x 1.2" deep shall be recessed into the inner compartment door panel. The pocket shall be installed as close to the bottom and hinged side of door as possible unless otherwise specified.

CURBSIDE INTERMEDIATE COMPARTMENT (P3):

Install a curbside intermediate compartment (P3) just forward of the curbside rear compartment and to the rear of the rear wheelwell opening. Maximize the size of this compartment. Extend to bottom of squad bench cushion.

Actual Size: 16.48"W X 26.68"H X 20.36”D
Clear Door Opening: 10.71"W X 25.68"H

!!! FABRICATE COMPARTMENT FROM DIAMOND PLATE WITH A FLAT ALUMINUM SWEEP OUT STYLE FLOOR.
!!! INSTALL COMPARTMENT LIGHTING.
!!! INSTALL WEB STRAP ILO GAS DOOR STAY TO MAXIMIZE OPENING.
!!! DO NOT INSTALL SHELF TRACK.

CURBSIDE FRONT COMPARTMENT (P1):

The compartment described above shall feature the following minimum dimensions:

Clear Door Opening:	22.1" wide x 88.1" high
Actual Dimension:	27.2" wide x 87.1" high x 31.75" deep (ABOVE INTERIOR FLOOR LEVEL)

This compartment shall be accessed through a single hinged door meeting the standards for door construction, hinging, and latching outlined within this specification. This compartment shall also be accessible from the vehicle interior front wall area. This compartment shall be utilized for storage of purchaser-supplied jump kits and other miscellaneous items as required by this purchaser. The compartment itself shall be constructed as an individual box and welded into the body structural framing. The material used shall be .125" aluminum diamond plate that is continuously welded at all seams. The compartment shall include two strips of LED lights, one to either side of the compartment door, to provide lighting inside the compartment.

KKK-A-1822 CERTIFICATION LABEL:

The vehicle shall have weight/payload, electrical load, and the current KKK-A-1822 certification stickers installed in the O2 compartment. Failure to provide these certification labels will be cause for rejection of the completed vehicle. Labels that are found to be falsified will also be cause for rejection of the completed vehicle. The purchaser reserves the right to request documentation showing that all required testing has been completed at the time of the bid opening. Failure to provide this documentation, if requested, will result in the bid being rejected without further consideration.

SPECIAL BODY REQUIREMENTS:

The requirements set forth in the following section of this specification represent items and features that may not be offered as standard by the bidder. If the bidder is unable to furnish any items listed in this section, then that inability must be listed and explained in the bidder's list of exceptions. Failure to do so will result in rejection of the bidder's proposal as being non-responsive.

INTERIOR HEADROOM:

The interior headroom of the finished vehicle shall be: 74"

!!! DO NOT INCREASE HEIGHT OF REAR DOORS WITH HEADROOM INCREASE.

STAR PUNCHED STEP SURFACE IN SIDE ENTRY DOOR:

A removable star punched insert shall be installed in the side entry door step well. The insert shall be flush with the threshold.

6" DROP SKIRT DESIGN:

The curbside skirt, forward of the rear wheel well shall be dropped six (6) inches. Two integral aluminum diamond plate steps shall be installed within the side access door step well for improved accessibility to the patient compartment. Under no circumstances shall this be accomplished by bolting an additional step to the step well. The design must be such that all steps are integral. The use of bolts, rivets, or any other type of fastener is prohibited.

STREETSIDE OF BODY LOWERED 6":

The street side body skirt, forward of the rear wheel well, shall be dropped six (6) inches. The extra room is to be provided inside the compartments in this area.

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SOUNDPROOFING:

To insure good working conditions and to create a stable patient environment, the vehicle shall be manufactured with particular attention paid to sound control. The following process must be performed throughout the manufacturing cycle of the vehicle:

1. Underbody shall be completely sprayed with sprayable, non-flammable latex sound control coating

2. Body Interior walls, roofs and interior compartment walls shall be sprayed with sprayable non-flammable latex sound control coating

3. The interiors of all access doors shall be sprayed with sprayable non-flammable latex coating

4. The backs of all interior cabinets shall be wrapped in antiphon damping material

5. Door interiors are to be lined with polydamp intefoam extensional damping pad

6. The body structural tubes shall filled with non-resonating dampening material

7. Side stepwell areas are to be backed with PT Damping Pad

8. All walls shall be insulated with 2" Technicon polyfiber acoustic insulation. Headliners shall be double insulated with 2" Technicon Polyfiber and a Reflectix barrier.

9. A .125" damping pad, a .125" sound barrier sheet, and a .625" composite floor panel sandwiched between aluminum sheets shall be installed prior to installation of the vinyl floor covering.

10. A chassis tuned VI-Tech mounting system shall be used to provide vibration reduction and structure borne noise attenuation.

ROOF POCKET:

The roof of the body shall be designed with an integral recessed pocket to allow for the recessed rooftop condenser as specified below.

MODULE BODY HARDWARE:

The following section lists hardware items that are to be installed on the vehicle body.

WINDOWS, MODULE BODY ENTRY DOORS:

The rear module body access doors shall include windows. The two rear doors shall feature fixed windows. Each of these windows shall measure 16.5"h x 17"w and shall be glazed and tinted in accordance with FMVSS. The windows shall be encased in extruded aluminum frames. Under no circumstances will RV style windows, windows that rely on rubber gaskets, windows that do not feature extruded aluminum frames, or windows that do not meet the above stated minimum dimensions be acceptable.

!!! WINDOWS TO HAVE AN INTEGRAL BRONZE TINT.

WINDOW, SLIDING FOR SIDE ENTRY DOOR:

The side entry door shall have a sliding window. Each window shall measure 16.5"h x 17"w and shall be glazed and tinted in accordance with FMVSS. The windows shall be encased in an extruded aluminum frame. Under no circumstances will RV style windows, windows that rely on rubber gaskets, windows that do not feature extruded aluminum frames, or windows that do not meet the above stated minimum dimensions be acceptable.

!!! WINDOW TO HAVE AN INTEGRAL BRONZE TINT.

EMERGENCY RELEASE PROVISION, SIDE DOOR:

The manufacturer shall install emergency release latches at the top and bottom of the interior of the side entry door. These will allow egress in the event of a door latch failure. The release knobs are to activate the rotary at the top and bottom of the door.

EMERGENCY RELEASE PROVISION, REAR DOORS:

The manufacturer shall install emergency release latches at the top and bottom of the interior of the rear entry doors. These will allow egress in the event of a door latch failure. The release knobs are to activate the rotary at the top and bottom of each door.

DOOR HANDLES:

The vehicle is to include Tri-Mark free floating door handles. The handles shall include a chrome finish and are to activate the door latches through the use of pre-stretched stainless steel cables. Latches using cables made of any other material or that are not pre-stretched are not acceptable. The interior door panels are to be three piece with a removeable center section allowing access to the latch mechanism for lubrication and maintenance.

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BODY MOUNTS:

This purchaser requires a mounting system that provides a stable and durable attachment of the module body to the chassis frame. To accomplish this requirement the following body attachment method shall be used:

A minimum of (5) five mounting platforms shall be attached along the outside of each chassis frame rail for a total of (10) ten. Each platform shall consist of (1) top plate of .375" thick steel and (2) side reinforcement plates made of .25" steel. There shall be a .375" full backing plate where the mount attaches to the frame rail. The plates shall be welded along all seams with a heavy continuous weld. The body substructure shall include a 1" by 3" solid aluminum tie down bar welded to each sub structure cross member. To complete the body to chassis attachment, a tuned mounting system shall be used. The elastomer mount shall be custom-tuned to the specific chassis type for vibration reduction, structure borne noise attenuation and to provide low profile, low frequency isolation necessary for ideal patient compartment conditions. Standard chassis furnished mounting donuts will not meet the requirements of this specification. The mount shall be attached to each platform by (2) .625" Grade 8 bolts with washers and locking nuts. The platform shall be attached to the chassis frame rail with a minimum of (3) .625" diameter Grade 8 bolts with washers and locking nuts. The fail safe elastomer isolation mount shall then attach to the aluminum body tie down bar with a .75" diameter Grade 8 bolt, a washer, and a locking nut.

The mounting system must have been subjected to a documented Hygee dynamic frontal impact test of at least 30 G's to verify the integrity of the mounting system in the event of a serious accident. No exceptions to this requirement are permissible.

SPLASH SHIELDS:

Stainless steel splash shields are to be installed on the lower front face of the module body just aft of the cab access doors. These shields are to have a brushed finish and shall match the height of the diamond plate corners guards that are to wrap around the lower corner posts on the side of the body.

STAINLESS STEEL FENDERS:

Polished stainless steel fender flares shall be installed above each wheel well opening. The mounting of these flares shall provide for no contact between the stainless steel fender and the aluminum body skin. This is done to eliminate any contact between dissimilar metals and the electrolysis that may result. The fenders shall be secured using non-metallic (plastic) mounting hardware.

RUB RAILS:

C-channel lower body rub rails shall be installed on each side of the module body. Each rail shall be securely installed yet simple to remove and replace in the event of damage.

EXTENDED CORNER GUARDS:

Extended stainless steel stone guards and polished aluminum diamond plate corner guards shall be installed as noted below. The guards shall be extended and shall terminate where noted.

Locate: FRONT OF BODY.
Size: 30"H EACH SIDE.

REAR ACCESS DOOR HOLD-OPEN DEVICES:

Cast Products "Grabber" style rear door hold-open devices shall be installed to maintain the rear access doors in the 'open' position. One loop shall be installed on each door, and the appropriate socket shall be installed on the body. These devices are to be chrome finish in lieu of Cast Products' standard finish.

ELECTRIC LOCKS, COMPARTMENT DOORS:

Power activated door locks shall be installed on all exterior compartment doors. Locks shall be activated by switches located at each patient area access door and in the front radio console. Each lock may be individually overridden by the use of a key.

ELECTRIC LOCKS, ACCESS DOORS:

Power activated door locks shall be installed on patient area access doors. Locks shall be activated by switches located at each patient area access door. Locks may be overridden by a manual slide lever or by the door key.

CONCEALED DOOR LOCK SWITCH:

A concealed weatherproof switch shall be installed as indicated below to operate the power door locks specified above. The switch shall be wired to unlock only.

Locate: REAR LICENSE PLATE BRACKET OR GRILLE AREA PER PURCHASER'S CHOICE.

!!! REAR LICENSE PLATE BRACKET LOCATION SHOWN.

TOUCH PAD LOCKS:

The power door locks specified above shall be operable from an exterior programmable touch pad system located as noted below.

Locate: FRONT FACE OF BODY - DRIVER'S SIDE.

DOOR LOCKS WIRED THROUGH OEM SWITCHES:

The power door locks specified above are to be wired to the O.E.M. chassis door lock switches.

RECESSED LICENSE PLATE BRACKET:

A Cast Products recessed license plate bracket shall be installed as noted below. The bracket shall include (2) LED lightS in the top to illuminate the license plate.

Locate: STREETSIDE REAR BODY PANEL.

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REFLECTORS ON ENTRY DOORS:

Red reflectors shall be installed on the inside on the patient area doors.

DOOR REFLECTION:

Red Scotchlite strips, 2" x 12", shall be installed horizontally across the top of each entry door. This material is in addition to the reflectors listed above.

RUBBER MATTING IN EXTERIOR COMPARTMENTS:

Black rubber matting material shall be cut to size and installed on the bottoms of all exterior compartments. The material shall feature integral ridges to help equipment to stay in place.

!!! INSTALL ON COMPARTMENT FLOORS ONLY - SHELF TRAYS TO BE SCORPION COATED.

!!! ALSO INSTALL ON ALL FLOORS AND SHELVES OF INTERIOR CABINETS.

RUBBER-COVERED WALLS IN BACKBOARD COMPARTMENT:

The walls of the backboard compartment shall be covered with self-adhesive textured rubber matting to protect the walls and the equipment stored in this area from any damage.

Color: GRAY.

PAINT AND STRIPING:

A paint process is required that provides the highest possible gloss as well as superior color and luster retention characteristics. In addition, the paint process must provide a high resistance to chemical sprays, salt sprays, humidity, and temperature changes. Lastly, this process, given the expected life of the vehicle and its heavy-duty cycle, must resist chipping. The final paint application shall be free of material application imperfections such as orange peel, streaking, or a dull finish. Once painted, the vehicle shall be inspected under a black light to bring any small imperfections, not seen with the naked eye, to attention. Any such imperfections shall be repaired prior to the conclusion of the paint inspection process. The final application shall provide a high gloss finish.

PREPARATION:

To produce an acceptable paint finish, the following paint process must be used:

All body doors and hardware must be removed prior to any wash, prime, or final paint application. All material impurities and oils must be removed from the bare aluminum body. The entire module body, excluding the underside, will have all visible welds ground down and all material imperfections filled. The entire body, including the compartment doors, must be finished with a DA. It is also required that all door jamb areas be sanded to insure that no areas are missed with the DA process mentioned above. All holes (e.g. for hinge mounting, etc.) shall be plugged at this stage to prevent any cleaning agents from entering the module body framework. The body shall be prepared for paint by spraying with a high strength detergent followed by a water rinse. Next the body and compartment doors are to be sprayed with a phosphoric acid-based cleaner to remove dirt and oil and to etch the body for superior paint adhesion. The application of the acid-based cleaner shall be followed with a water rinse. Next, a conversion coating shall be applied to the body to enhance paint adhesion and to prevent corrosion. The body shall be rinsed with de-ionized water to prevent salts from accumulating on the surface. The body will, then, be baked dry prior to the application of Sikkens sealer/primer. Again, all module doors, though handled separately from the body, shall undergo the same process as described above.

PAINT:

Immediately after application of the sealer/primer the manufacturer shall apply a finish color coat of Sikkens BTLV 650 paint. The color coat is to be immediately followed by a clear coat. Once all coats are applied the unit is to be baked dry. This base coat/clear coat 'wet on wet' process is required over any other proposed process. Processes not meeting these specific requirements must be explained thoroughly within the bid.

POST-PAINT PROCESS:

Following the drying of all paint coats the unit is to be thoroughly inspected as noted above. The unit is to be polished and any blemishes repaired. All paint lines must be sanded and cleaned.

PAINT MANUFACTURER'S INSPECTIONS:

The manufacturer shall maintain an outside paint audit system. As part of that audit the paint manufacturer shall regularly receive and test sample paint panels that are painted along with module bodies. The paint manufacturer shall also provide regular onsite inspections of the vehicle manufacturers paint process to assure a consistent level of quality. Audit reports from these inspections shall be provided to management.

ADDITIONAL CORROSION PREVENTION MEASURES:

All locations where fasteners penetrate the outer skin of the module body shall be coated with Fluid Film anti-corrosion agent. In addition, all fasteners that penetrate the outer skin of the module body shall be treated with an anti-corrosion agent to assure the maximum protection against vehicle corrosion and electrolysis. Wherever possible, all exterior lighting shall be attached using nylon inserts where the mounting hardware penetrates the body skin.

NON-METALLIC HOLE INSERTS:

All locations where light heads and fenders attach to the aluminum body shall utilize threaded Nylon inserts to isolate the fasteners from the aluminum module body skin and structure. This practice, along with the other measures described above, shall act to minimize the threat of electrolysis.

PAINT WARRANTY:

The paint warranty provided by the converter must meet all warranty standards as set forth elsewhere within this specification. Bidder must submit a manufacturer's paint warranty certificate with the bid. Failure to do so will result in automatic rejection of the bidder's proposal.

CHASSIS PAINT COLOR:

The OEM chassis manufacturer's bright white paint shall be ordered on the chassis.

!!! UNLESS OTHERWISE SPECIFIED, ALL STOCK CHASSIS ARE ORDERED IN FORD OXFORD WHITE (OPTION Z1).

!!! MANY OTHER OEM COLORS ARE AVAILABLE AT NO ADDITIONAL COST.

!!! IF A COMPLETE CHASSIS REPAINT IS REQUIRED IN ORDER TO MATCH A SPECIFIC COLOR, THE COST IS $2,484.00.

!!! AS REQUESTED, THE COST OF A COMPLETE CHASSIS REPAINT IS INCLUDED IN THIS PROPOSAL.

BODY PAINT COLOR:

The final paint application to the vehicle body shall be made with Sikkens Autocryl acrylic urethane paint.

Color: WHITE.
Number: FLNA4002.

!!! PAINTING THE MODULE ANY COLOR OTHER THAN STANDARD WHITE WILL HAVE A COST OF $504.00.

REAR CHEVRONS:

Install Diamondgrade chevron striping on the entire rear of the body inboard of the corner posts and below the upper driprail.

Colors: RED #983-72.
FLUORESCENT YELLOW GREEN #983-23.
Configure: ALTERNATING 6".

SAMPLE PAINT PANEL:

The successful bidder shall provide a painted test panel, prepared with the specified paint color and number. This process shall confirm correct paint selection, and acceptable color match with the purchaser's current vehicles.

Color: TO BE DETERMINED.
Paint Number: TO BE DETERMINED.

!!! PAINT SAMPLES ARE PROVIDED AT NO CHARGE.

DIAMOND GRADE STRIPING IN C-CHANNEL RUB RAILS:

Provide and install a .750" White Diamond Grade #983-10 stripe through the center of the C-channel rub rails.

CABINET DOORS, PLEXIGLAS, HANDLES AND HARDWARE:

Information relative to interior door materials, handles, and hardware is provided below:

HANDLES FOR LEXAN DOORS:

All interior sliding Lexan doors are to include extruded pull handles.

LATCHES FOR HINGED DOORS:

The hinged doors within the patient compartment are to utilize Southco Stainless Steel flush-style latches as noted below. These latches shall feature recessed pull ring style handles. The latches shall be both positive (mechanical latching) and passive (latches automatically). All latches requiring locking devices shall be a heavy duty design wih larger keys than Southco's standard keys.

Locking: (1) ON DRAWER OF RIGHT FRONT WALL (ALS) CABINET.
(1) ON ELECTRONICS CABINET DOOR.
Non-Locking: ALL OTHER LOCATIONS.

Note: Locking latch locations are to be noted on the drawings.

LEXAN COLOR:

The Lexan interior cabinet doors shall be a light gray tint.

STAINLESS-INHALATION AREA WALLS:

The rear and side walls bordering the inhalation area shall be covered with stainless steel. The stainless steel used shall have a brushed finish.

INHALATION PANEL:

To prevent contamination of the inhalation panel, the panel shall be fabricated using no wood or wood based products. The material used shall be an aluminum composite material. This material shall not absorb liquids and shall not attract bacteria, molds or fungi. The material is to be covered with CG-Tech material in a color matching that required within this document. The panel shall be trimmed with beading and padded on the rear edge with upholstery matching the selected upholstery color.

SOLID SURFACE COUNTERTOP:

The patient area countertop(s) shall be constructed of solid surface material. The countertops shall incorporate a 1" radiused retention lip around the perimeter of the material. This radiused corner shall also be tapered to avoid any sharps edged. A radius cove molding shall be installed at either end of the countertops where the material meets the cabinet wall. The rear edge of the material, adjoining the side wall of the vehicle, shall be sealed with silicone. In addition, any and all areas that require seams due to manufacturing processes shall be sealed with silicone. This material shall be uniform throughout so that scratches can be buffed out without causing adverse effects on the appearance of the material. The color required is noted below:

Color: HAZELNUT SHELL
GREY GRANITE
MERAPI
MIDNIGHT PEARL
ALLSPICE QUARTZ

!!! EXACT COLOR CHOICE TO BE DETERMINED.

Note: REAR OF COUNTERTOP TO BE REINFORCED TO ALLOW FOR CARDIAC MONITOR INSTALLATION.

INTERIOR COLORS, UPHOLSTERY AND SEATING:

The patient area interior design is specified below:

INTERIOR COLOR SCHEME:

The patient area interior shall feature the materials and colors listed below.

Floor: ALTROS.
Risers: STAINLESS STEEL.
Walls: CG-TECH.
Cabinets: SMOOTH FINISH PAINT.
Upholstery: EVS VACUUM-FORMED.

!!! EXACT COLOR CHOICES TO BE DETERMINED.

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INTERIOR WALLS/DOOR PANELS:

The interior wall and door panels in the patient area are to be finished with a non-laminate material possessing the following properties:

-Finger print resistant
-Resistant to yellowing
-Temperature resistant between -40 degrees and 212 degrees F.
-Resistant to oils, greases, weak acids and salts
-Verified tensile strength of 34mpa

No wood or wood-based products are to be used within the specified material.

In addition, the risers and the lower door panels are to be covered with brushed stainless steel.

Color: Silver Metallic
Sandstone Metallic
Desert Sand Metallic
Antique Copper Metallic
Polar White

!!! EXACT COLOR CHOICE TO BE DETERMINED.

FLOOR MATERIAL:

The floor covering shall be of the type and color described below:

Type: ALTROS.
Color: TO BE DETERMINED.

VACUUM-FORMED UPHOLSTERY:

All seat cushions, including the head/back cushions and the primary attendant seat, are to be vacuum-formed style. Cushions are to be installed with Velcro around the full perimeter of the cushion. All closeouts are to be covered with matching material.

INTERIOR STORAGE AREAS:

All interior storage cabinets, including the interior of the squad bench, shall be painted for ease of cleaning. Under no circumstances shall carpet be used within these storage cabinets as it is impossible to decontaminate. The paint color is listed within the "Interior Color" section of this specification. The paint shall be treated with an antimicrobial agent.

RISERS:

The interior of this vehicle shall be constructed without the use of wood or wood-based products. The risers shall be constructed of a reinforced structural composite consisting of a high density polypropylene core laminated between two layers of .024" aluminum skin. The finished riser panels shall be impervious to water or other forms of moisture and must be guaranteed against rotting or decomposition.

STAINLESS STEEL STREETSIDE RISER:

The street side riser beneath the main cabinet wall shall be covered with a single sheet of stainless steel. The stainless material shall be installed flush with the riser and trimmed at the top and both sides so as to cover the edges. The bottom of the material shall be formed at a 90 degree angle so that, upon installation, the 4" rolled floor will seal against the stainless steel. Designs that do not include this stainless steel riser will not be considered as they will not be capable of protecting the riser from damage due to cot movement, etc. In addition, stainless steel risers that have exposed edges, or that are more than one piece, will not be acceptable. Drawer and tip-out faces will be constructed with brushed aluminum laminate. Actual stainless steel faces must be specified as an additional requirement and at additional cost.

STAINLESS STEEL CURBSIDE RISER:

The curbside riser beneath the squad bench shall be covered with a single sheet of stainless steel. The stainless material shall be installed flush with the riser and trimmed at the top and both sides so as to cover the edges. The bottom of the material shall be formed at a 90 degree angle so that, upon installation, the 4" rolled floor will seal against the stainless steel. Designs that do not include this stainless steel riser will not be considered as they will not be capable of protecting the riser from damage due to cot movement, etc. In addition, stainless steel risers that have exposed edges, or that are more than one piece, will not be acceptable. Drawer and tip-out faces will be constructed with brushed aluminum laminate. Actual stainless steel faces must be specified as an additional requirement and at additional cost.

STAINLESS STEEL LOWER DOOR PANELS:

The lower portion of the patient area entry doors shall be covered with single sheets of stainless steel. The panels shall be separate from the stainless steel panels containing the door lock bezel. Designs that do not incorporate this feature will not be considered as they will not be capable of protecting the door panels from damage due to cot movement, foot traffic, etc.

ATTENDANT SEAT/CHILD SAFETY SEAT:

An EVS bucket type seat with a built-in child safety seat and 5-point occupant restraint shall be installed on the seat base in the rear-facing position. The seat shall be vacuum-formed, upholstered to match the vehicle interior, and shall be capable of adjustment from front to rear. Under NO circumstances shall this seat be installed in any manner that allows it to swivel due to the lack of stability and weaker structural characteristics inherent in such designs. The entire seating assembly, as described here, shall be subjected to a Hygee sled test of at least 30 G's to test the structural integrity of the design, as well as seatbelt retention characteristics, in order to assure a certain level of safety for the vehicle occupants.

SWIVEL BASE FOR ATTENDANT SEAT:

The EVS bucket type seat described above shall be installed on a swivel seat base. The seat shall be upholstered to match the vehicle interior, and shall be capable of adjustment from front to rear.

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SEAT BELTS:

Each seating position, other than the attendant seat, shall include a 4-point seat belt. Each belt shall include a (4) retractor system to allow all four belts to be fully retractable. Each belt shall also include quick one click design to ease their use. The belt at each position is to be outfitted with a removeable vest designed to guide the belt into the proper position, prevent the buckle from moving up or down and side to side, and offer better support and comfort to the seat occupant.

ALUMINUM INTERIOR CABINETS, STREET SIDE:

This specification requires an all aluminum modular cabinet design. Aluminum, a minimum of .063" thickness, is required over wooden cabinetry due to its lighter weight, greater durability, and the ease with which it can be decontaminated. The main cabinet wall shall be of modular construction. All individual cabinets shall be of welded construction. To insure the safety of patients and attendants in the rear of the vehicle, the main cabinet wall installation shall have been tested to a minimum frontal impact of 30 G's per the requirements of the Safety Certification section of this specification. The main cabinet wall may not be constructed of any wood or wood product. Wooden cabinetry can warp, expand, contract, splinter, separate, or crack. Wood will also harbor bloodborne pathogens whereas aluminum can be easily cleaned. Aluminum will remain stable and securely mounted (no fibers to compress) over many years and miles of continuous service. For these reasons, wooden cabinets, even when laminated with another material, will not be acceptable. Bids received that utilize any material other than that which is specified above will be considered non-responsive and will be rejected without further consideration.

CABINET TRIM:

The interior of the ambulance module shall have radius corner extrusions. The radius shall be a minimum of one and a half inches. The radius trim shall also include a removable cap that can be field replaced if damage occurs. (No Exception)

INTERIOR CABINETRY, STREET SIDE

All of the aluminum cabinetry within the vehicle shall be of welded construction. Methods of cabinet construction that utilize rivets or adhesives of any type will not be considered.

ALUMINUM CABINET WARRANTY:

The all aluminum cabinet construction, as described within this section, shall be warranted against any structural defects for a period of time not less than 30 years. This warranty shall be stated within the manufacturer's structural warranty document, and shall not be subject to any mileage limitations.

CABINET BEHIND ATTENDANT SEAT:

A vertical storage cabinet shall be located behind the attendant seat. The upper storage area shall house the primary electrical distribution area. The center section shall house a climate controlled storage device. The lower section shall house the vehicle's heat/AC unit. The electrical distribution area shall include a hinged door with a Southco key lock/latching device. The entire cabinet shall be fabricated from aluminum. The interior of the cabinet shall be painted and trimmed as described in the cabinet construction section of the specification.

STREET SIDE CABINET WALL:

The street side main cabinet wall shall be constructed from aluminum as described above. Each cabinet within the cabinet wall shall be designed and constructed as an individual welded aluminum box. Each box shall be insulated and soundproofed. The boxes shall then be bolted together to form the main cabinet wall. This design will allow for future modifications to the cabinetry should equipment storage requirements be updated. The cabinet wall assembly shall be further insulated against noise and temperature extremes. The entire assembly shall be bolted to the module body structure. Cabinets that are welded or otherwise permanently affixed to the module body structure will be unacceptable. Such permanent installation methods limit the ability to make design updates at a later time. They also increase the time and cost involved with regard to remounting the body onto a new chassis should that occasion ever arise. Likewise, cabinets mounted with the use of either rivets or adhesives of any kind will not be considered without exception.

Configure: PER DRAWINGS.

!!! ALL CABINETS TO BE 18"D (O.D.) = 15.95" (I.D.) UNLESS OTHERWISE NOTED.

!!! CPR SEAT TO BE 32" WIDE. NO REAR COUNTERTOP TO BE PROVIDED.

!!! INCLUDE AN UPPER INHALATION AREA CABINET. CABINET TO INCLUDE:
- SLIDING LEXAN DOORS IN A RESTOCKING FRAME.
- (1) ADJUSTABLE SHELF.

SIZE: 40"W X 16"H X 18"D

!!! INCLUDE A CABINET ABOVE THE CPR SEAT. CABINET TO INCLUDE:
- (1) TOP HINGED LEXAN DOOR AND (1) SOUTHCO C2 LEVER LATCH AT EACH END.
- INCLUDE (1) VERTICAL DIVIDER - CENTERED.

SIZE: 44"W X 7"H X 18"D.

!!! INCLUDE AN UPPER REAR CEILING CABINET. CABINET TO INCLUDE:
- SLIDING LEXAN DOORS IN A RESTOCKING FRAME.
- (1) ADJUSTABLE SHELF.

SIZE: 53.75"W X 22"H X 18"D.

!!! INCLUDE A MIDDLE CABINET REARWARD OF CPR SEAT. CABINET TO INCLUDE:
- LEFT-HINGED FLUSH CLOSING SOLID DOOR WITH SOUTHCO LATCH.
- (1) ADJUSTABLE SHELF.

SIZE: 16"W X 24"H X 18"D.

!!! INCLUDE A LOWER CABINET REARWARD OF CPR SEAT, CABINET TO INCLUDE:
- A SOLID BOTTOM-HINGED FLUSH CLOSING DOOR WITH GAS HOLD-OPEN. POSITION GAS HOLD-OPEN TO ALLOW DOOR TO OPEN 45 DEGREES.
- ALL INTERIOR SURFACES OF CABINET TO BE NON-PAINTED WITH A D/A FINISH.

SIZE: 16"W x 18"D x 18"D.

!!! INCLUDE A CABINET BENEATH THE INHALATION AREA COUNTERTOP - FORWARD OF PULL-OUT WRITING TRAY WITH DRAWER. CABINET TO INCLUDE:
- SLIDING LEXAN DOORS.

SIZE: 35.25"W x 14"H x 18"D.

CABINET SHELVING:

All interior cabinet shelves shall be fabricated from aluminum. The shelves shall utilize mini Unistrut adjustable shelf track.

Quantity: (3)
Locate: BOTH CEILING CABINETS.
REAR CENTER CABINET.

TESTING AND STRUCTURAL INTEGRITY:

The cabinet wall design and construction methods described within this specification shall have been subjected to Hygee sled testing as described within the "Safety Certification" section of this document. This testing shall have been performed to a minimum of 30 G's. This testing is in addition to all other testing, whether mandated or voluntary, that has been performed. The cabinet wall shall not be, in any way, responsible for any portion of the module body's structural integrity. However, the cabinet wall, as well as the methods and materials used to attach the wall to the vehicle, must be structurally sound in the unlikely event that this vehicle is involved in an accident. This testing is required as an added assurance that the vehicle interior is crash-stable and safe for all vehicle occupants. Proposals that include cabinet wall designs that have not been subjected to this testing will be rejected on the basis of being non-responsive.

CPR SEAT HEAD PROTECTION:

The progressive resistance head protection cushions shall incorporate layers of foam of increasing densities. Should a head strike occur, then the increasing density of the cushion as the impact progresses shall lessen the likelihood that the head will reach the aluminum cabinet material behind the cushions. It should be noted that standard single density foam cushions will not meet the requirements of this section. The bidder must have performed both actual impact tests as well as computer simulations in order to test the efficacy of this material in reducing head strike intensities to a survivable rate.

RESTOCKING CABINET FRAMES, STREETSIDE:

The street side cabinet(s) listed below shall feature sliding Lexan doors that hinge upward for cleaning and restocking of the cabinet in addition to the normal sliding mode of operation. The extruded door frame shall be installed at the top with a full length piano hinge. This will allow the entire frame to flip upwards providing complete access to the cabinet. The door and frame shall be held in the "up" position with two gas-charged cylinders, and in the down position with two sliding dead bolt type latches. The remainder of the door construction shall adhere to the appropriate section of this specification.

Quantity: (2)
Locate: BOTH UPPER CABINETS WITH SLIDING LEXAN DOORS.

PULL OUT WRITING TRAY WITH STORAGE BELOW WRITING S

A recessed writing tray shall be installed in the main cabinet wall for use by the occupant in the attendant seat. Storage shall be provided below a lift up writing surface. If applicable, the recessed pocket for the writing tray will be trimmed with aluminum diamond plate inside the intermediate compartment.

Locate: BELOW INHALATION AREA COUNTERTOP (FORWARD OF CPR SEAT)
Size: 13.5"W x 4"H x 16"D (ALL I.D. DIMENSIONS).
Note: ALL SURFACES OF DRAWER TRAY TO BE NON-PAINTED WITH A D/A FINISH. INSTALL USING ACCURIDE SLIDES.

Locate: (1) OPEN FACED NOTEBOOK SLOT BELOW ABOVE TRAY. PROVIDE A .250" RETAINING LIP ON OUTER EDGE.

CPR SEAT STORAGE:

The CPR seat cushion shall be hinged upward to allow for access to the area beneath it. This area shall provide miscellaneous storage. The storage area shall be fabricated with aluminum diamond plate and shall be as large as is possible given the location of the exterior compartmentation and wheel house.

!!! CUSHION OVERHANG TO BE .500" OF RISER.

RECESSED PADDLE LATCH FOR LIFT UP CPR CUSHION

A recessed paddle latch will be installed in the cabinet riser to provide access to the CPR seat storage area.

GAS HOLD OPEN FOR LIFT-UP CPR SEAT CUSHION:

A gas holdopen shall be installed on each end of the cushion to keep the CPR seat cushion in the upright position when opened.

CABINET DIVIDER:

An aluminum cabinet divider shall be installed as noted below. The divider is to be fabricated out of aluminum and painted to match the cabinet interior.

Quantity: (1)
Locate: CABINET ABOVE CPR SEAT.

INTERIOR CABINETS, CURB SIDE:

All of the cabinets located within this section shall meet the same standards for construction, design, materials, and testing as designated in the previous section. Failure of the bidder to provide cabinets meeting these criteria shall be grounds for rejection of the bid as being non-responsive.

SQUAD BENCH STORAGE:

A storage area, fabricated from .125" 5052-H32 aluminum, shall be installed beneath the squad bench cushion. This storage area shall be painted and trimmed per the cabinet construction section of this specification. Access to this area shall be gained by raising the bench cushion. This area shall be as large as possible given the presence of the wheelhouse directly beneath this area and the curbside intermediate compartment. Note that storage areas made of wood, whether or not they are laminated or otherwise covered with another material, will not be acceptable.

SQUAD BENCH:

A minimum 22" wide x 72" long split squad bench cushion(s) shall be provided on the curb side of the patient area. The cushions shall not include posts or wheel cups for a stretcher. These cushions shall include air vents on the underside to allow air in and out as the cushion expands and contracts. Two 4-point restraints shall be installed in this area for the seated positions, along with (3) 2-point restraints for backboard retention for a secondary patient. These belts shall meet all applicable testing requirements as set forth in the latest federal 'K' specs. In addition, these belts shall have been subjected to a Hygee sled test of at least 30g's. Squad bench restraints that have not been subjected to this testing will not be acceptable.

A-BAR AT HEAD OF BENCH:

A stainless steel A-bar shall be installed at the head of the bench. The bar shall include provisions for a small Rubbermaid waste container and a Kendall #85031 sharps container. Both the waste container and the sharps container shall be shipped with the completed unit. The bar shall attach through a 1/4" thick aluminum plate in the bench in the area of the attachment points.

BENCH HOLD OPEN:

24lb. gas piston style hold-open devices shall be installed on each end of the flip-up squad bench cushion. These devices will provide for smooth and simple operation. For that reason substitute hold-open devices, such as ratchet style devices, will not be acceptable.

BENCH HOLD DOWN:

A paddle style latch shall be installed on the flip-up bench cushion to hold the cushion in the 'closed' position. The operation of this latch shall be passive and shall require intentional unlatching in order to raise the squad bench cushion. The latch is to be flush mounted in the face of the squad bench riser.

BENCH BACKREST:

A full backrest cushion shall be installed on the wall over the squad bench. The cushion is to extend the full width of the squad bench and shall be trimmed to match the interior of the vehicle. The upholstery shall be as described in the upholstery section of this document.

BENCH CEILING CABINET:

A cabinet shall be installed at ceiling level over the full length of the squad bench. This cabinet is to be fabricated from .063" 5052-H32 welded aluminum. The interior of the cabinet shall be painted per the cabinet construction description listed elsewhere within this specification. The cabinet is to be accessed through sliding Lexan doors in a lift-up frame that are held in the 'open' position by gas piston hold-open devices. This cabinet is to be a maximum of 11"H with 74" headroom to allow enough clearance between the bottom of the cabinet and the top of the seat below to meet KKK-F requirements.

!!! CABINET TO BE 10"D (OUTSIDE DIMENSIONS)

RESTOCKING CABINET FRAMES:

The curbside cabinetry, as described below, shall feature flip-up door frames to provide total access to the cabinet interior for cleaning and restocking purposes. The door frame shall be secured at the top by a full length piano hinge. The entire frame shall hinge upward and be held in place by gas piston hold-open devices. The frame shall be held in the 'down' position by two sliding dead bolt type catches.

Locate: SQUAD BENCH CEILING CABINET.

CABINET DIVIDER:

A cabinet divider shall be installed as noted below. The divider is to be fabricated out of aluminum and shall be painted to match the cabinet interior.

Locate: CENTER OF SQUAD BENCH CEILING CABINET.

ALUMINUM INTERIOR CABINETS, FORWARD WALL:

Like all other cabinets in the patient area that are to be fabricated and installed by the manufacturer, the cabinets on the forward wall are to be fabricated from aluminum as dictated in the appropriate section above. Again, failure of the bidder to meet the criteria established within this specification with regard to cabinet design, construction, materials, and testing will be cause for rejection of the bid as being non-responsive.

FRONT WALL CABINET (COMPARTMENT P1):

A cabinet shall be provided on the front wall of the patient area just inside the side access door. This cabinet shall run from floor to ceiling and shall be fabricated from .3003-H14 welded polished aluminum diamond treadplate. The cabinet shall be anchored at both the top and bottom for stability. This stability must have been tested through a Hygee sled test of at least 30g's. Under no circumstances shall this cabinet be welded to any module body structural member. This storage area shall be used to house purchaser supplied bagged equipment and supplies.

Shelf Quantity: 3 (INCLUDING TOP SURFACE OF DRAWER)
Shelf Type: ADJUSTABLE.
Shelf Liner: RUBBER MATTING.

!!! DELETE SHELF FLANGES ADJACENT TO EXTERIOR DOOR TO ALLOW FOR EASE OF EQUIPMENT REMOVAL.

GLOVE STORAGE ABOVE FRONT WALL CABINET:

Storage for (2) glove boxes shall be provided in the header above the front wall cabinet. The face of the storage area will be covered in matching interior vinyl and include openings for access to each storage area. The header will be hinged for restocking or removal of glove boxes.

Glove Box Size: 10.5"W X 5.5"H X 4"D (UNLESS OTHERWISE SPECIFIED).

FULL HEIGHT ROBINSON ROLL-UP CABINET DOOR:

A full height Robinson roll-up door shall be installed per the instructions listed below. The door is to include a lift bar latch with key lock. The door shall have an anodized aluminum finish and shall store in a roll in the uppermost portion of the cabinet when in the 'open' position.

Locate: RIGHT FRONT WALL CABINET.
Configure: INCLUDE A REAR DRUM COIL WITH DIAMOND PLATE CLOSEOUT.
INCLUDE AN ADJUSTABLE SHELF ABOVE AND BELOW THE ADJUSTABLE DRAWER.

FRONT WALL DRAWER:

A drawer shall be installed on Grant slides in the front wall as noted below. This drawer is to be .063" 5052-H32 welded aluminum. All welds are to be continuous. The drawer shall include a Southco heavy-duty locking latch to hold it in the 'closed' position.

Quantity: (1)
Size: 10"H (I.D.) X MAXIMUM WIDTH AND DEPTH.
Configure: DRAWER TO BE ADJUSTABLE BEHIND THE FULL-HEIGHT ROLL-UP DOOR.
DRAWER FACE TO BE ALUMINUM COVERED WITH BRUSHED STAINLESS STEEL LAMINATE.
FABRICATE TOP OF DRAWER TO SERVE AS A SHELF WITH NO FLANGE FACING THE EXTERIOR COMPARTMENT DOOR.
Note: ALL SURFACES OF DRAWER TRAY TO BE NON-PAINTED WITH A D/A FINISH.

MODULE INTERIOR ACCESSORIES AND TRIM:

The following section addresses interior accessories and trim features. All installation locations, as noted below, shall be strictly adhered to by the bidder. The items in this section will directly influence the quality of care given to the patient, as well as the safety of the attendants. For these reasons the installation locations listed below must be met without exception.

IV HOOKS:

Cast Products recessed swing-down IV hangers shall be installed per the instructions listed below. These hangers are to be near flush mounted into the patient area ceiling to reduce their interference with the walkway when not in use. The arms of each hanger shall be rubberized so as to reduce the possibility of injury that may occur if contact is made with them. This style IV hanger shall be sufficient to meet Federal KKK-1822-F.

Quantity: (2)
Locate: (1) ABOVE COT IN CENTER POSITION.
(1) ABOVE SQUAD BENCH.

!!! EXACT LOCATIONS TO BE DETERMINED AT PRE-CONSTRUCTION MEETING.

ANTI-MICROBIAL COATED COT CEILING GRAB RAIL:

A grab rail shall be installed in the ceiling as noted below. This rail is to be constructed of stainless steel. Integral stanchions shall be welded into place at fixed points along the length of the rail for attachment to the ceiling. The rail shall attach through aluminum mounting plates that are welded to the module roof structure for strength and durability. Because contamination occurs most often as a result of contact, this feature must be treated with an anti-microbial agent consisting of an inorganic ceramic coating embedded with silver ions. This coating shall be effective against a broad range of microbes including bacteria, molds, algae and fungi.

Locate: (1) 6' RAIL ABOVE STREETSIDE EDGE OF COT IN CENTER POSITION PER DRAWING.

ANTI-MICROBIAL COATED BENCH CEILING GRAB RAIL:

A grab rail shall be installed in the ceiling as noted below. This rail is to be constructed of stainless steel. Integral stanchions shall be welded into place at fixed points along the length of the rail for attachment to the ceiling. The rail shall attach through aluminum mounting plates that are welded to the module roof structure for strength and durability. Because contamination occurs most often as a result of contact, this feature must be treated with an anti-microbial agent consisting of an inorganic ceramic coating embedded with silver ions. This coating shall be effective against a broad range of microbes including bacteria, molds, algae and fungi.

Locate: (1) 6' RAIL ABOVE CURBSIDE EDGE OF COT IN CENTER POSITION PER DRAWING.

PATIENT AREA DOOR GRAB RAILS:

Angled door handles shall be installed on the interior door panels of each access door. The handles shall be one-piece and shall be constructed of stainless steel. The handles shall feature smooth radius corners and flange mounts at each attachment point. Because contamination occurs most often as a result of contact, this feature must be treated with an anti-microbial agent consisting of an inorganic ceramic coating embedded with silver ions. This coating shall be effective against a broad range of microbes including bacteria, molds, algae and fungi.

COVE MOLDING:

A radius cove molding shall be installed at all areas of the floor that may have seams.

PROTECTIVE EDGE TRIM:

The 90 degree edges of the squad bench, the attendant seat riser, and the front wall cabinet shall be protected by a chamfered trim angle.

CEILING:

The patient area ceiling shall be constructed of a bright white Alcopla aluminum composite material consisting of a polyethylene core laminated between two sheets of coated aluminum. The headliner shall be smooth, impervious to moisture, easy to clean and durable. It shall have the same rate of expansion and contraction as the aluminum body. Headliner that is padded or upholstered in any way will not be considered, nor will any headliner made of wood or wood products due to the lower degree of durability and the risk of contamination inherent in such materials. Plastic, fiberglass or ABS headliner material is not acceptable due to the cracking commonly causing by the differing rates of expansion. Lastly, the headliner material shall be treated with an antimicrobial agent. The bidder, at the request of the purchaser, may be required to submit proof of the application along with a detailed description of the agent used and the types of organisms that it effects.

FIRE EXTINGUISHER:

Two (2) 5# ABC fire extinguishers, with mounting brackets, shall be supplied on the completed vehicle per the notations below.

Locate: SHIP LOOSE.

GLOVE STORAGE ABOVE REAR ENTRY DOORS:

Glove storage for (2) glove boxes shall be provided in the header panel above the rear entry doors. The gloves shall be accessed via oval cutouts in top hinged vinyl covered panels. A positive latch mechanism shall be provided.

Glove Box Size: 10.5"W X 5.5"H X 4"D (UNLESS OTHERWISE SPECIFIED).

COT MOUNTS AND ACCESSORIES:

The following cot mounting hardware shall be installed per the instructions listed below. The installation shall meet the hardware manufacturer's installation guidelines.

COT MOUNT REINFORCEMENT PLATES:

The module sub-floor shall be designed to allow for the installation of a Stryker Power Load or similar cot fastening system.

STRYKER POWER LOAD SYSTEM:

The ambulance manufacturer is to install a Stryker Power Load system. The system itself shall be supplied by Foster Coach Sales Inc.

REAR LIGHTBAR FOR 96" BODY:

The lightbar specified below shall be installed per the lightbar mounting instructions that follow. This lightbar shall be a maximum of 86" wide for installation with a 96" wide body.

REAR LIGHT BAR:

The light bar, as described below, shall be provided per the information listed below. Installation of this light bar on the vehicle shall follow the instructions given under the "Light Bar Mounting" section of this specification.

Model: WHELEN TANF85 TRAFFIC ADVISOR.
Configure: INCLUDE TOP MOUNTED ICC LIGHT CLUSTER.
WIRE TO FLASH WHEN EMERGENCY MASTER IS ACTIVATED.
TRAFFIC ADVISOR PATTERNS TO BE MANUALLY SELECTED AT CONTROL HEAD.

REAR LIGHT BAR MOUNTING:

The light bar specified above shall be installed per the instructions listed below. The light bar model is also provided for clarification purposes.

Light Bar Location: REAR FACE OF MODULE BODY - IMMEDIATELY BELOW DRIP RAIL.
Light Bar Model: WHELEN TANF85 TRAFFIC ADVISOR.

Note: If the specified light bar cannot be flush mounted on the rear face of the body, then Cast Products wedge style brackets, painted the same color as the body, shall be used for the light bar installation. In all cases the light bar shall be installed so that it is below the module body roofline.

ELECTRICAL EMERGENCY VISUAL WARNING SYSTEMS:

Warning lights are to be installed per the following instructions:

FLASH PATTERN PROGRAMMABILITY:

The selected M-series lighting shall feature programmable flash patterns. A dedicated switch is to be provided in the front control panel to change the flash pattern of the specified emergency warning lights.

Lights: PROGRAM ALL LIGHTS FOR COMET FLASH PATTERN FOR INITIAL SET-UP.

M7 SERIES RED L.E.D. - INTERSECTION LIGHTS:

Whelen M7 series Red L.E.D. lighting shall be installed per the quantity and location requirements listed below. All lighting is to include the optional chrome flange, unless otherwise specified.

Quantity: (2)
Location: (1) ON EACH CHASSIS FENDER AS INTERSECTION LIGHTS.
Lens color: RED.

CAST HOUSINGS FOR M7 SERIES INTERSECTION LIGHTS:

Cast Products polished housings for Whelen 700 series L.E.D. lights shall be installed on the chassis fenders. The housings shall include adapter plates to accommodate the M7 series lightheads.

M9 SERIES AMBER L.E.D. LIGHTING:

Whelen M9 series Amber L.E.D. lighting shall be installed per the quantity and location requirements listed below. All lighting is to include the optional chrome flange.

Quantity: (2)
Location: ON REAR FACE - UPPER WINDOW LEVEL.
Lens color: AMBER.

!!! WIRE TO A SEPARATE ON/OFF SWITCH LABELED "REAR AMBER".

M9 SERIES RED L.E.D. LIGHTING:

Whelen M9 series Red L.E.D. lighting shall be installed per the quantity and location requirements listed below. All lighting is to include the optional chrome flange.

Quantity: (15)
Location: (5) ON FRONT FACE.
(2) STREETSIDE - UPPER OUTBOARD CORNERS.
(2) CURBSIDE - UPPER OUTBOARD CORNERS.
(2) REAR FACE - UPPER OUTBOARD CORNERS.
(2) REAR FACE - LOWER WINDOW LEVEL.
(2) LOCATION TO BE DETERMINED.
Lens color: RED.

!!! FLASH REAR FACE LIGHTS IN AN "X" PATTERN.

M9 SERIES WHITE L.E.D. LIGHTING:

Whelen M9 series White L.E.D. lighting shall be installed per the quantity and location requirements listed below. All lighting is to include the optional chrome flange.

Quantity: (1)
Location: CENTER OF FRONT FACE.

M9 SERIES GREEN L.E.D. LIGHTING:

Whelen M9 series Green L.E.D. lighting shall be installed per the quantity and location requirements listed below. All lighting is to include the optional chrome flange.

Quantity: (1)
Locate: CURBSIDE FRONT FACE OF BODY - OUTBOARD CORNER.

ION SERIES - GRILLE LIGHTS:

Provide and install Whelen wide angle ION series Red LED lights in the quantity and locations described below. All lights shall have a chrome flange.

Quantity: (4)
Locate: (2) ON UPPER BAR OF CHASSIS GRILLE.
(2) ON LOWER BAR OF CHASSIS GRILLE.
Lenses: RED.

!!! FLASH LIGHTS IN AN "X" PATTERN.

WHITE LIGHT CUTOFF SWITCH:

A switch shall be installed in the front control panel that will deativate all forward facing white flashing lights. This includes wig-wag flashers if ordered.

TRAFFIC PRE-EMPTION SYSTEM:

Provide and install a GTT Model #794H LED traffic pre-emption emitter as described below.

Locate: RECESSED INTO FRONT FACE - CENTERED BELOW WHITE M9 LIGHTHEAD.
Configure: INCLUDE A SEPARATE ON/OFF SWITCH LABELED "OPTICOM".
WIRE THROUGH THE NEUTRAL SAFETY SWITCH TO CANCEL IN "PARK".

AUDIBLE EMERGENCY WARNING SYSTEMS:

The following audible emergency warning features shall be installed on the vehicle:

AIR HORNS:

Twin Buell #1061 air horn trumpets shall be installed as follows. One trumpet is to be recess mounted within the front bumper. The air horn system is to include a 12V air compressor and an air storage tank.

Switch Location: Chrome push button on driver's side of front console.

FEDERAL RUMBLER SIREN:

The vehicle manufacturer shall supply and install a Federal Signal Rumbler siren enhancement system.

Switch Location: FRONT CONSOLE.
Default Mode: 8-SECONDS (UNLESS OTHERWISE SPECIFIED)

FEDERAL PA 4000 SIREN:

The vehicle manufacturer shall supply and install a siren as noted below.

Make: FEDERAL.
Model: PA4000.
Locate: FRONT CONSOLE.

!!! AMPLIFIER TO BE LOCATED TO ALLOW FOR PROPER VENTILATION.

SIREN INSTALLATION:

The electronic siren specified above shall be installed in the designated location and wired for operation through the speakers noted below.

SIREN SPEAKERS:

The speakers specified below shall be installed on the chassis per the instructions listed. The speakers shall be wired for operation through the siren listed above.

Make: FEDERAL.
Model: AS124 (PAIR)
Locate: (1) IN EACH OUTBOARD END OF BUMPER.
Note: SPEAKERS TO BE COVERED BY A FEDERAL ELECTRIC "F" STAINLESS STEEL GRILLE.

SIREN SPEAKER INSTALLATION:

The siren speakers specified above shall be bumper mounted and wired for operation.

LIGHTING:

Lighting information is noted below:

M6 SERIES L.E.D. SIDE BODY RUNNING LIGHTS:

One Whelen M6 series L.E.D. light with a red lens and a chrome flange shall be installed on each side of the vehicle towards the rear of the body. These lights shall function as both running lights and turn signals.

Locate: ON REAR COMPARTMENT DOORS - SAME POSITION EACH SIDE.

L.E.D. EXTERIOR COMPARTMENT LIGHTING:

Provide and install Whelen Fluorent Plus series Super L.E.D. compartment tube lighting in all exterior compartments. This lighting is only available in 9" increments up to 63". Install the longest length available centered on EACH vertical side of the respective compartment door frame and wire to activate with the magnetic door switch.

Locate:
- STREETSIDE FRONT (D1) - (2) 63" STRIPS
- STREETSIDE INTERMEDIATE (D2) - (2) 45" STRIPS
- STREETSIDE REAR (D3) - (2) 54" STRIPS
- CURBSIDE FRONT (P1) - (2) 63" STRIPS
- CURBSIDE INTERMEDIATE (P3) - (2) 18" STRIPS
- CURBSIDE REAR (P4) - (2) 63" STRIPS

OS SERIES L.E.D. ICC MARKER LIGHTS:

The required ICC marker lights for this vehicle are to be Whelen OS series L.E.D. with chrome flanges. Bidder should note that some lightbars have ICC lights already installed. In that case those lights shall be installed in lieu of the lights described here unless denoted within this document.

M9 SERIES L.E.D. SCENE LIGHT:

Whelen M9 series L.E.D. scene Lights shall be installed in the quantity and locations noted below. Each light shall include the optional chrome flange. These lights shall be activated by right and left side switches located within the front electrical control console. Additional means of activation, if any, are listed in the electrical section of these specifications.

Quantity: (4)
Locate: (2) PER SIDE.

M9 SERIES L.E.D. LOAD LIGHTS:

Whelen M9 series L.E.D. scene Lights shall be installed in the quantity and locations noted below. Each light shall include the optional chrome flange. These lights shall be activated when the rear doors are opened, and by a switch located within the front electrical control console. Additional means of activation, if any, are listed in the electrical section of these specifications.

Quantity: (2)
Locate: ABOVE REAR DOORS.

M9 SERIES L.E.D. "ARROW" TURN SIGNALS:

One pair of Whelen M9 series L.E.D. 'Arrow' turn signals shall be installed on the rear of the module body per the instructions listed below. Each light shall include the optional chrome flange.

Locate: REAR BODY PANELS.

M6 SERIES L.E.D BRAKE/TAIL AND REVERSE LIGHTS:

Whelen M6 series L.E.D. brake/tail and reverse lights shall be installed on the rear of the module body per the instructions listed below. All four of these lighting assemblies shall include the optional chrome flange.

Locate: BRAKE/TAIL AND REVERSE LIGHTS IN RISER.

!!! PROGRAM THE REVERSE LIGHTS TO ACTIVATE WHEN THE REAR ENTRY DOORS ARE OPENED.

STRIP-LITES IN C-CHANNEL RUB RAILS:

Provide and install (6) Whelen Strip-Lite series #PSR00FRR Red LED lights with Red lenses. Install (3) on each side of the body inside the C-channel rub rails as described below.

Locate: (1) AT EACH END OF BOTH FORWARD RUB RAILS.
(1) AT REAR PORTION OF BOTH REAR RUB RAILS.
Note: WIRE TO FUNCTION AS RUNNING LIGHTS IN NON-EMERGENCY MODE. FLASH ALTERNATELY IN EMERGENCY MODE WITH WARNING LIGHT ACTIVATION.

ELECTRICAL POWER GROUP:

The vehicle electrical system is extremely important to this purchaser. The requirements for the onboard electrical system are noted in detail below. The bidder's electrical system, should it deviate in any way from that which is specified, shall be explained in great detail. This explanation shall present facts relative to the bidder's system only. The bidder shall not draw any comparisons between the electrical system being offered, and the system being specified. Any comparisons or decisions regarding one system versus another will be made solely by the purchaser and shall be based entirely on the written description as provided by the bidder at the time the proposal is submitted. All decisions made by the purchaser as to the merits of one system over another will be final and will not be subject to discussion, either verbal or written, at any point.

ELECTRICAL CONTROL SYSTEM STANDARDS:

The electrical control system must meet all current ambulance design standards to include KKK 1822 and AMD. A system is desired that is easy to use, simple in design and allows electrical problem diagnosis and repair time to be minimized. The electrical system must be thoroughly engineered and manufactured to allow simple personnel operation. Finally, the system must be designed so that the probability of experiencing dead batteries, shorted electrical components and engaging in lengthy troubleshooting procedures will be reduced. In some cases the electrical output provided by the chassis charging system can be marginal and under certain circumstances the electrical load can exceed the alternator output. In addition, some electrical systems have not provided proper circuit protection and at times have not provided adequate wiring for the load. To address the above objectives, the following minimum electrical system design is required:

CONVERTER ADDED CHASSIS CHARGING ENHANCEMENT:

The basic design for the chassis electrical output system must include equipment that provides adequate electrical needs to operate the vehicle's electrical components. In addition, a system is desired that continually monitors the chassis voltage and amperage outputs. The end result of the desired electrical output system is longer battery life, less down time associated with charging system repairs, and the fulfillment of each and every emergency response.

AUTOMATIC THROTTLE ADVANCE:

In order to reduce the number of component parts and unnecessary throttle linkages, the factory electronic throttle control shall be utilized to activate the throttle advance system. The controls shall require that the chassis be placed in Park or Neutral with the Module Disconnect switch in the On position and the Park Brake engaged before activation of the throttle advance. A digital display warning on the driver console, accompanied by an audible tone, must instruct the driver to Set Park Brake or Release Park Brake to engage or disengage the automatic throttle control. No Exceptions.

AUTOMATIC LOAD MANAGEMENT:

In order to insure that onboard personnel attention is focused on victim care rather than being occupied with monitoring vehicle systems, an automatic load management system is required. The bidder must provide a system that continually monitors the vehicles charging system while it is sitting on scene. The system design shall have the ability to automatically shut down not less than ten pre-programmed electrical circuits to prevent a deficit charging condition while the vehicle is sitting at idle. The system shall be programmed to constantly scan the electrical system.

If a deficit charging condition continues for more than one minute, a pre-programmed circuit shall shut down, correspondingly reducing the electrical draw. If the deficit condition continues, a second circuit shall automatically shut down. This process shall continue to repeat at one-minute intervals until at least ten circuits are shut down with corresponding load reductions. In the event any circuits are being controlled (disabled) by the load management system, the driver must be informed in two ways. First, a digital display warning shall appear on the driver information panel indicating Load Management Active. At the same time, the L.E.D. switch indicator light shall begin to flash for each specific circuit that is being disabled. Systems that cannot indicate specific circuits being affected by the Load Management System are not acceptable.

Load management systems must be programmed through a microprocessor based logic and memory system rather than a series of mechanical relays. Systems that require manual activation of Load Management will not be acceptable. Once the deficit condition ceases to exist, the system must be capable of restarting any disabled circuit without any action required by the driver.

The bidder is required to furnish a system that permits the end user, if he so desires, to determine prior to production the order of priority for shedding loads. Although the entire system must function automatically, it must also be designed so that it can be set by the end user to a mode for restocking, training, or maintenance convenience. The System Off setting shall not be merely a switch which would permit the operator to easily turn off Load Management. The intent is to keep the system active at all times when the vehicle is in operation.

LOW AMPERAGE SWITCHING:

Electrical devices that are not activated automatically shall be controlled from either the cab or patient area control panels through the use of manual switches. A low amperage switch that sends only an on/off signal to the central electrical distribution area is required. The switches provided shall have documented durability ratings at a minimum of fifty million (50,000,000) cycles. The switch design shall include magnetic technology to attain the required durability ratings. Switches that are rocker style will not be acceptable due to their tendency to degrade and fail in continued field use. To eliminate loose or poor contacts, it is unacceptable to have soldered or terminal type connections for the switches. The switches must be an inherent part of the panels.

SWITCH "ON" INDICATOR LIGHT:

All switches (unless otherwise noted) on the panels described below shall include a red L.E.D. indicator light that will indicate when power is being applied to a circuit. Designs that have indicator lights that activate to indicate switch position only are not acceptable. In addition, the indicator lights shall be independently programmable to flash or steady burn as required to meet the end user specification.

SWITCH PANEL DESIGN:

Both the driver and the patient area switch panels must be designed so they can be easily decontaminated. Current designs make decontamination impossible when an attendant must use a contaminated glove to operate the switch panel while treating a patient. These areas become breeding grounds for bacteria. For this reason, the switch panels must be built in such a manner that there are no openings or crevices on the panel faces. The entire switch panel must be sealed with a protective overlay material. There shall be no printing or labeling on the face of this material. Holes in the panel through which switches, backlighting, or legends are inserted will be unacceptable. The panels must be cleanable with any commercially available spray type cleaner or disinfectant commonly used by EMS systems with no damage created by fluids leaking through openings onto the circuit boards or switch contacts.

The panel surface must be covered with a polyester film laminate for enhanced solvent resistance, strength, and durability. Both front and rear switch panels shall have been tested to at least a 24 hour exposure under DIN 42 115 Part 2 for the following commonly used chemicals: hydrogen peroxide <25%, bleach <20%, glycol, isopropanol, xylene, benzene, phosphoric acid <30%, ammonia <2%, hydrochloric acid <10%, acetic acid <50%, sulphuric acid <10%, diesel fuel, silicone oil, linseed oil, Windex, Formula 409, Fantastic, Wisk, Downey, washing powders, fabric conditioner, Ajax, and glycerin. The bidder shall be required, if asked, to provide the appropriate documentation showing that the above chemicals produced no visible damage after at least a 24 hour exposure. Bidders should be cautioned that commonly used polycarbonate or vinyl membrane fascia and nameplate substrates for electrical panels will not meet this requirement.

The panels shall be spill resistant to shed accidental moisture from spilled soft drinks or coffee cups. In addition, the surfaces of the panels shall be antimicrobial. This antimicrobial property is to be inherent in the surface material itself and shall not need to be reapplied at any point in the future. Products offered that include aftermarket treatments of the panel surfaces will not be considered.

SWITCH PANEL BACKLIGHTING:

All switch perimeters shall be lighted and raised for ease of switch location at night. In addition, the control panels shall include a red color LED indicator -to further distinguish switch activation.
The switch panels shall include, on each panel, an individual intensity control. Switch panel lighting that operates at the same level as the cab instrument panel or that illuminates both the front and rear panels at the same intensity will not be considered. The bidder must provide totally independent control for each panel.

CAB CONTROL SWITCHING AND LCD DISPLAY:

Switch Activation:

The cab control center shall include 8 critical buttons installed in protective enclosure with proper ventilation to maintain temperature. The following minimum circuits shall be provided on the switch panel:

-Module Disconnect
-Emergency Master
-Emergency
-Interior Lights
-Exterior Lights
-Home
-Apps
-Options

The following displays will appear on the Home screen of the cab console:

-Voltage (to the nearest 0.10 volt)
-Amperage (to the nearest amp)
-Outside Temperature
-Inside Patient Area Temperature
-Access or Compartment Door Open Warning Message and Display
-Electrical System Diagnostics
-24 Hour Clock
-HVAC
-Emergency Brake Warning
-Accent Lighting and Backlighting Controls
-Patient Warning

PATIENT AREA CONTROL SWITCHES AND LCD DISPLAY:

Switch Activation: Home

The patient area control center shall include 8 mission critical buttons installed in a backlight aluminum control panel. The following circuits shall be provided on the Home screen of the switch panel:

-Rear Heat/AC Activation and Separate Temperature Control
-Rear Heat/AC Fan Speed Control
-Power Vent
-Interior Lights
-Oxygen and Suction
-Patient Status
-Stop Clock
-Oxygen Line Pressure
-Oxygen Cylinder Pressure
-Exterior Lights

Digital Message Center:

The following digital displays shall appear on the faceplate of the patient area control console when selected:

-Patient Area Temperature
-Thermostat Setting
-Oxygen Tank Pressure
-Oxygen Line pressure
-Oxygen Warning

MODULE COMPARTMENT AND ACCESS DOOR SWITCHES:

Exterior circuits such as loading lights, side scene lights and compartment lights shall be activated by low amperage, non-mechanical switches. The type of switch desired is a magnetic sensitive switch that activates the circuit when the magnetic plane is broken. Plunger type switches are not acceptable because of their short useful life and higher amperage requirements.

DOOR OPEN INDICATOR:

A vehicle graphic door open warning indicator, with accompanying audible chime shall be installed in both the cab and patient area. A digital display shall appear on both consoles indicating which specific door has been left ajar.

Under no circumstances will red flashing lights or systems that do not specifically pinpoint a specific open door be acceptable.

CENTRAL ELECTRICAL DISTRIBUTION AREA:

The electrical system smart modules shall be independent and include their own logic. They must include RAM memory to execute commands without having to rely on a central CPU. The system must not be centered around the use of a logic-controlled microprocessor built into a single circuit board. This logic control system is required to maximize reliability of the electrical system and to minimize downtime. It must be provided in order to match the type of control system used in the chassis and to prevent communication problems caused when dissimilar systems are employed. The design of the system must totally separate chassis operation from converter feature installations. In the unlikely event of converter component failure, the chassis must still remain operable.

The computer based electrical system must utilize components similar in design to the computerized chassis functions such as the OEM cruise control system, fuel feed system, transmission control system and braking system.

MULTIPLEXED ELECTRICAL COMMUNICATIONS SYSTEM:

Because most chassis manufacturers have chosen multiplex electrical communication technology to operate the chassis system, this purchaser requires the same technology for the converter-added systems. A standardized electrical control and wiring system is required. The vehicle manufacturer must own and control all rights to the electrical system. Standard systems controlled by outside vendors and modified for a specific vehicle or manufacturer will not be acceptable due to the unpredictability for future parts or service. Switch panels or modules that are not standard in design and are not interchangeable from one unit to another will not be considered. Since solid state logic-controlled technology is commonly available and not proprietary to any one manufacturer and has been proven to be more reliable with greater benefits, a blanket exception or clarification regarding the electrical specification is not acceptable and will be cause for automatic rejection of the bid.

In addition, the system will consist of a series of input / output control modules to manage and feed information and to control the various circuits required by this specification. Each smart module must have 32 outputs and 10 inputs. The smart modules shall have a chassis gateway interface with a 120 amp max output. Mate-Lock connectors shall be used for all load connections. Molex connectors shall be used for data transmission lines. Under no circumstances will systems be acceptable that utilize screw type terminals or card connectors due to their susceptibility to working loose due to vibration normally encountered on a vehicle.

Under no circumstances may the operation of the central processing unit or the input or output modules be based upon the operation of mechanical relays. Relay based systems require higher amperage operating current and rely on mechanical contact points designed to degrade with use, creating short duty cycles for the vehicle electrical system. Relay based systems, due to those limited short duty cycles, will not be acceptable for the requirements of this specification.

AMBULANCE SPECIFICATIONS

SUBURBAN PURCHASING COOPERATIVE (SPC)
1600 E. GOLF ROAD, SUITE #0700
DES PLAINES, IL 60016

UNIT FUNCTION:

The electrical control system shall be fully programmable and shall control a number of functions. The minimum functions to be controlled are as follows:

-No Load Starting Circuit (as defined in subsequent sections of this specification)
-Load Management
-Sequenced Start Circuit Activation
-Electrical System Diagnostics
-Climate Control Heat/AC operation
-Intensity Controls for Patient Dome Lights
-Oxygen Warning System (high and low pressure)
-All Warning Light Flashers and Flash Patterns
-Patient Status System
-Electrical Diagnostics

UNIT FUNCTION OPTIONS:

The electrical control system shall be capable of adding the following options:

-Up to four cameras

-Emergency GPS

-Pulse width Modulation

-USB port for field upgradability

-Seat belt monitor display

-Remote system activation from a mobile device

-Record ambulance PM schedule

The electrical control system shall include the ability to manage user defined maintenance issues. It shall also allow for the notification of critical care issues such as oil changes and tire rotations.

CIRCUIT PROTECTION:

Each converter added electrical circuit must have circuit protection for both over current limit and over temperature condition. The circuit protection shall be provided by solid-state circuit breaker/switching devices (MOSFETS) for both the input and output wire feeds for each circuit. The circuit protection shall require no user intervention such as that required for circuit breakers or fuses. The system shall be able to indicate an output fault warning.

FIELD PROVEN AND TIME TESTED ELECTRICAL SYSTEM:

The converter-added electrical system represents the most important system in the design of this ambulance. Reliability and proven performance is essential. Therefore, the bidder must be able to demonstrate that they have at least ten years experience with solid state logic-controlled electrical systems installed in emergency vehicles. Further, the bidder must be capable of all programming required by the system without turning to outside vendors. This includes custom-programmed items as may be delineated in this specification.

The bidder may be required to demonstrate an in production or in service vehicle in order to guarantee compliance with this requirement. Prototype or first of a kind electrical systems are not acceptable. The purchaser may require the bidder to furnish specific references to further document compliance.

WIRING:

The following minimum wiring standards are required:

Identification:

By color, by itemized number, and by actual circuit name, stamped every 4-6"

Size:

Size will vary and will be dependent upon each wire being able to carry a minimum of 125% of the actual circuit load.

Protection of Wiring:

All wiring must be run in breakaway wire loom for protection against abrasion or chafing.

ELECTRICAL SYSTEM DIAGNOSTIC CHECK:

The electrical system must have built-in capability to self check each converter-added circuit and identify a short or open circuit by means of a single diagnostic switch. The diagnostic system shall be operable from the driver’s seat without exiting the vehicle. Diagnostic systems that are incorporated into exterior compartments, patient area interior cabinets, or remote locations will not be acceptable. The relevant information shall be displayed on the digital display on the cab switch panel. When the operator activates the Run Diagnostic switch, the unit will initiate the systems check. The digital display shall flash the message Running Diagnostics while the check is in progress. The system must go through all outputs for the vehicle to check for malfunctions. If a malfunction is found, the display shall stop flashing and steady burn to indicate the message Module #, Output #, Fail. This message will direct the service staff to the correct output module and the correct wire number in order to troubleshoot and repair the system. Once a failure is identified, the operator may continue to run the remainder of the diagnostic by pressing the Warning Reset switch. The bidder shall furnish with the vehicle a detailed diagram indicating each input and output module number and identifying each circuit controlled by the module.

ELECTRICAL SYSTEM SUPPORT DATA:

Being able to service the electrical system should the need arise is of the utmost importance. To reduce the down time associated with servicing, the following information shall be provided at the time of delivery:

1. Electrical system operating instructions
2. Patient area heating/AC schematic and parts list
3. Oxygen and vacuum system schematic, parts list and leak check instructions
4. Battery and alternator schematic and system description
5. Radio communications installation instructions
6. Wire description list for converter added wiring
7. Individual schematics for all converter added electrical circuits

MODULE DISCONNECT DEFAULT:

The 'Module Disconnect' circuit shall default to the "on" position when the battery switch is activated. Manual activation of the switch is not acceptable.

AUTOMATIC BATTERY SWITCH:

An Inpower electronic battery switch shall be installed. The switch is to activate battery power through the vehicle ignition and is to include an automatic shutdown timer to deactivate battery power after the ignition is turned off.

Shutdown timer interval: (5) MINUTES.

110V INTERIOR OUTLETS:

Duplex 110V interior electrical outlets shall be installed. Quantity and location information is noted below. Each outlet shall be GFI protected and shall illuminate when powered.

Quantity: (6)
Locate: (2) IN INHALATION AREA.
(1) IN CAB ON REAR WALL.
(2) IN RIGHT FRONT WALL CABINET (P1)
(1) IN STREETSIDE REAR COMPARTMENT (D3)

!!! ALL LOCATIONS TO BE DETERMINED AT PRE-CONSTRUCTION MEETING.

12V OUTLETS:

12-volt electrical outlets shall be installed within the vehicle. Quantity, location, and adapter type are provided below. All 12-volt outlets shall be protected by a Schottky medical isolator. In addition, the 12-volt outlets shall be wired through a 20-amp manual reset circuit breaker. All outlets, unless noted otherwise below, shall be battery switched. All 12-volt outlets shall be labeled.

Adapter Type: CIGARETTE LIGHTER STYLE.
Quantity: (4)
Locate: (2) IN INHALATION AREA.
(2) IN RIGHT FRONT WALL CABINET.
Configure: BATTERY HOT.

!!! OUTLETS TO INCLUDE AN INTEGRAL USB PORT.
!!! ALL LOCATIONS TO BE DETERMINED AT A PRE-CONSTRUCTION MEETING.

KUSSMAUL SUPER AUTO EJECT 20-AMP SHORELINE:

The vehicle shall be equipped with a Kussmaul Super Auto Eject non-arcing shoreline. The male shoreline inlet shall be installed as noted below. This inlet shall be a straight three-prong type and shall include the female adapter plug. The shoreline shall be designed so that the plug will automatically eject from the inlet in the event that the vehicle is started while still plugged in. The shoreline shall include a hinged cover to protect it from the elements. The shoreline system shall be designed to handle a 20-amp load, and shall also include a 20-amp inline GFI breaker.

Locate: STREETSIDE OF BODY AS FAR FORWARD AS POSSIBLE.
Color: TO BE DETERMINED.

EZ PLATE:

The shoreline shall be installed as noted above using a Kussmaul EZ Plate.

BLOCK HEATER WIRED THROUGH SHORELINE:

The engine block heater shall be wired through the vehicle shoreline system. The wiring shall include a cutoff switch, to be installed with the onboard electrical components, to disable this feature for seasonal use.

EXTRA CIRCUIT BREAKER:

A spare 15-amp manual resetting circuit breaker shall be installed as a provision for the possible installation, at a later time, of additional equipment. This feature is in addition to any prewire that may be included elsewhere within this vehicle specification. The total number of spare breakers is listed below:

Quantity: (1)

CAB SWITCH PANEL INSTALLATION:

The cab control panel for the converter-added electrical circuits shall be flush mounted in the upper face of the cab console. The mounting surface shall be angled downward so that the LCD screen and switches are visible to both the driver and passenger positions.

REVERSE ACTIVATED REAR SIDE SCENE LIGHTS:

The rear scene lights on either side of the vehicle shall be programmed to be activated when the vehicle is placed into reverse gear. This is in addition to the other modes of operation as described elsewhere within this document. This feature shall be attained through the programming of the onboard electrical system. Systems that require additional wiring in order to provide this feature are not acceptable.

SIDE DOOR ACTIVATED CURB SIDE SCENES:

The curb side scene lighting shall be programmed to be activated when the patient compartment side access door is opened. This is in addition to the other modes of operation as described elsewhere within this document. This feature shall be attained through the programming of the onboard electrical system. Systems that require additional wiring in order to provide this feature are not acceptable.

REVERSE ACTIVATED LOADING LIGHTS:

The load lighting on the rear of the vehicle shall be programmed to be activated when the vehicle is placed into reverse gear. This is in addition to the other modes of operation as described elsewhere within this document. This feature shall be attained through the programming of the onboard electrical system. Systems that require additional wiring in order to provide this feature are not acceptable.

AUDIBLE LOW VOLTAGE ALARM::

An audible alarm shall be programmed to warn the operator should the vehicle's voltage drop below 11.8 volts for 120 seconds.

EMERGENCY BRAKE WARNING:

When the vehicle is placed into 'Park' or 'Neutral' with the "Module Disconnect" switch 'On' and the "Red Flashing Light" switch 'On', then an audible alarm, accompanied by a visual readout on the cab console digital display, shall warn the vehicle operator to engage the emergency brake. Likewise, when the vehicle is placed into gear, then the same alarm will sound with a visual display warning the operator to disengage the emergency brake.

INTELLITEC LED CLOCK:

An Intellitec Time Manager clock shall be provided and installed as noted below:

Locate: IN HEADER PANEL ABOVE REAR DOORS.

L.E.D. STEP WELL LIGHT:

A Tecniq #E06-WS00-1 4" round L.E.D. light with a stainless steel trim ring shall be installed on the forward side of the step well. Light to activate with door open through a magnetic door switch.

DOOR OPEN CAB WARNING:

Install a red L.E.D. light in the cab within sight of the driver and wire to flash with the ignition 'on', parking brake not engaged, and any door open. This is in addition to the audible alarm and readout on the panel noted elsewhere within this document.

!!! LIGHT TO BE TECNIQ #E06-RS00-1 WITH STAINLESS STEEL TRIM RING.

!!! EXACT LOCATION TO BE DETERMINED AT PRE-CONSTRUCTION MEETING.

ADDITIONAL DOOR OPEN WARNING:

Provide and install Whelen OS series Red marker lights with chrome flanges and clear lenses in the quantity and locations described below.

Quantity: (2)
Locate: (1) ON EACH CAB DOOR PANEL.
Configure: LIGHTS TO ILLUMINATE (STEADY-BURN) WHEN ANY CAB DOOR AND/OR MODULE BODY DOOR IS OPENED.

PROGRAMMABLE LIGHT TIMER:

A momentary switch shall be installed as noted below to operate the specified lighting with the battery switch in the 'Off' position, with or without the shoreline plugged in. The switch shall activate a programmable timer that will automatically shut the lights off after the specified period of time. The initial time setting shall be as follows:

Locate:	CURBSIDE WALL ABOVE HEAD OF BENCH.
	CURBSIDE REAR ENTRY DOOR PANEL.
Light(s) Controlled:	DOME LIGHTS.
Configure:	SET ELAPSED TIME FOR 15 MINUTES FOR INITIAL SET-UP.

!!! SWITCH PANEL ON CURBSIDE WALL TO ALSO CONTAIN ADDITIONAL SWITCHES FOR "HI" AND "LOW" DOME LIGHT FUNCTION.

L.E.D. DOME LIGHTS:

Whelen #80COECHR L.E.D. dome lights shall be installed in the patient area ceiling. Quantity and location information is listed below. The lights shall be recessed into the headliner and shall not protrude from the ceiling more than 1". All dome lighting shall have "HI-LOW" adjustability and shall be controlled via solid state switching at the patient area electrical control console.

Locate:	(5) OVER COT IN CENTER POSITION.
	(5) OVER BENCH.

!!! LIGHTS TO OPERATE AT "HIGH" INTENSITY WHEN DOME TIMER IS MANUALLY ACTIVATED.
!!! WITH BATTERY SWITCH IN "OFF" POSITION, PROGRAM THE DOME LIGHTS TO ACTIVATE AT "LOW" INTENSITY WHEN A MODULE ACCESS DOOR IS OPENED. LIGHTS TO REMAIN ON FOR (5) MINUTES.
!!! INCLUDE SEPARATE SWITCHES FOR EACH BANK OF LIGHTS.

PREWIRE FOR FUTURE STREAMLIGHT INSTALLATION:

Prewire shall be provided as noted below for future installation of Streamlight charger bases.

Quantity:	(1)
Locate:	STREETSIDE REAR COMPARTMENT (D3)
Configure:	IGNITION SWITCHED/SHORELINE ACTIVATED.

L.E.D. SPOTLIGHT:

Provide and install a Whelen #P46HHS Super L.E.D spotlight in the location described below. Light to include a 90 lbs. pull magnet mount.

Locate:	BEHIND DRIVER'S SEAT.
Configure:	WIRE DIRECT TO POWER SOURCE IN FRONT CONSOLE.

AUXILIARY BRAKE LIGHTING:

The rear red flashing lights, as specified elsewhere within this document, shall be wired so that they illuminate when the brake pedal is depressed. This lighting is in addition to the specified brake/tail lights.

Configure:	FLASHERS TO OVERRIDE BRAKE LIGHT FEATURE.
Note:	FEATURE TO ACTIVATE REGARDLESS OF MODULE DISCONNECT STATUS.

L.E.D. ACTION WALL AND CAB CEILING LIGHTING:

Provide and install a Whelen #70CREGCS Red/White split L.E.D. light in the quantity and locations described below. The light shall be wired for activation using the integral switches on the lighthead.

Quantity: (2)
Locate: (1) IN CAB HEADLINER AREA.
EXACT LOCATION TO BE DETERMINED.

Locate: (1) IN INHALATION AREA.
Note: LIGHT MAY BE TOO LARGE FOR THIS AREA.

ADDITIONAL SCENE LIGHT PROGRAMMING:

The following programming shall be provided for the side body scene lights.

Configure: SCENE LIGHTS TO ACTIVATE WITH THE OPENING OF ANY COMPARTMENT DOOR ON THAT SIDE OF THE MODULE.

ADDITIONAL REAR WARNING LIGHT PROGRAMMING:

The following programming shall be provided for the rear warning lights.

Configure: THE UPPER RED M9 LIGHTS AND WINDOW LEVEL AMBER M9 LIGHTS SHALL FLASH "LOW POWER" MODE IN "DRIVE". LIGHTS TO FLASH NORMAL INTENSITY IN "PARK".

Note: THE LOWER WINDOW LEVEL LIGHTS ARE WIRED TO THE BRAKE LIGHT CIRCUIT. AS SUCH, THE LIGHTS CANNOT FLASH IN "LOW POWER" MODE ALSO.

CLIMATE CONTROLLED STORAGE AREA:

Provide and install an MK Dual-Temp/V (Vertical) micro-depth climate control unit as described below.

Locate: IN THE CENTER PORTION OF THE LINEN CLOSET (BEHIND THE ATTENDANT SEAT).
CONTROLS TO BE LOCATED ABOVE UNIT.
Configure: WIRE TO THE 12V SYSTEM - BATTERY HOT. UNIT TO INCLUDE A RIGHT HINGED DOOR AND REAR MOUNTED COMPRESSOR.
Size: EXTERNAL DIMENSIONS: 22.25"H X 20.0"D X 14.75"W.

KUSSMAUL SAFETY LOCK 4 SYSTEM:

Provide and install a Kussmaul Model #091-160 Safety Lock 4 to allow the ambulance to remain running and all functions of the vehicle operational with the vehicle keys removed. The power locks shall remain functional while operating without keys in the ignition. The activation of this system can be accomplished through the front control panel.

KUSSMAUL BATTERY CHARGER/CONDITIONER:

Provide and install a Kussmaul Auto Charge LPC 80 #091-206-12 battery charger/conditioner as described below.

Locate: STREETSIDE INTERMEDIATE COMPARTMENT.
Note: INCLUDE A #091-234 MINI BAR GRAPH DISPLAY IN FRONT CONSOLE.
INCLUDE A #091-206-194C-WT-RD (RED) STATUS DISPLAY ABOVE SHORELINE INLET.
CHARGER AND STATUS PANEL AVAILABLE IN A KIT: #LPC80-091-206-194C-WT-RD.

WEATHER-PROOF ELECTRICAL CONNECTIONS:

The following guidelines shall be adhered to with respect to the electrical connections exposed to the elements:

!!! ALL ELECTRICAL CONNECTIONS SHALL BE PROTECTED FROM THE WEATHER BY BEING ENCLOSED IN A WEATHER TIGHT ENCASEMENT OR DEUTSCH CONNECTOR.
!!! MARINE OR AUTOMOTIVE SEALANTS AND/OR TAPES ARE ONLY TO BE USED IN ADDITION TO THE WEATHER TIGHT CONNECTORS.

HEATING AND AIR CONDITIONING:

A temperature control system is desired that provides quick and simple operation while maintaining a uniform temperature throughout the patient compartment. The unit itself must be located so that it is easy to access for service. This location must also be near the O.E.M. heat/AC connection points when provided so as to increase the overall efficiency of the unit. The following minimum design standards must be adhered to in order to best meet the needs of this purchaser.

SYSTEM CONTROLS:

The climate control functions shall be controlled through a primary location in the inhalation panel, and through a secondary location in the cab electrical control console. The switches used for the operation of this system shall be identical to the switches described in the "Electrical" section of this specification. Switches shall be present in the front console to select either 'Heat', 'A/C', or 'Off' functions and to select the desired temperature. Switches shall be present in the rear control panel to select either 'Heat', 'A/C', or 'Off' functions, 'Automatic' or 'Manual' mode of operation, and to select the desired temperature.

THERMOSTAT:

The temperature level shall be adjustable from both the front and rear electrical control panels for the 12V system. Two switches at each location shall be used to scroll through desired temperature settings on one degree intervals. Once the desired temperature is set, then the system shall retain that setting regardless of the position of the battery switch. The temperature sensor for the system shall be located at the inhalation panel so as to attain a true patient compartment temperature. The temperature setting and the actual temperature reading shall be viewable from both the front or rear digital displays.

This system is to be controlled through the converter-added electrical system. Under no circumstances shall household type thermostats be acceptable.

AMBULANCE SPECIFICATIONS

SUBURBAN PURCHASING COOPERATIVE (SPC)
1600 E. GOLF ROAD, SUITE #0700
DES PLAINES, IL 60016

SYSTEM OPERATION:

The system shall allow for both automatic and manual operation. When set to the manual mode the fan speed shall be infinitely adjustable from the rear control panel for extra ventilation. When set to the automatic mode the fan speed shall be controlled by the thermostat setting. The temperature that is selected shall be continuously maintained. When the selected temperature has been reached, then the system shall automatically cycle the fan speed down to reduce unnecessary electrical load.

HEATER WATER CONTROL:

The flow of hot water from the chassis to the converter-added heat/AC system shall be controlled by an electrically operated valve located under the hood. Water flow to the rear heater shall be activated when either the front or rear heater switch is turned to the 'On' position. It is a requirement of this specification that this type of valve be used unless the converter is supplying a self-contained heat-AC system. The term "self-contained" is defined as being a unit that does not require any water flow from the chassis. Under no circumstances will manual valves be considered. Manual valves are inconvenient and tend to leak.

UNIT LOCATION AND SERVICE:

t is required that the heat/AC unit be installed inside the bottom portion of the linen cabinet behind the attendant's seating position. The face of this area, at floor level, shall be perforated to provide air flow to the heat/AC unit mounted inside. This is required for efficiency, serviceability, and safety.

Many O.E.M. chassis builders provide tap-in points for the converter-added heat/AC unit behind the driver's seat. Therefore, system efficiency is higher when the hot water from the chassis is pumped to the area described above. Efficiency is not lost by pumping the water over an extended distance or up to ceiling level. Such a condition would naturally result in reduced patient area temperature levels as excessive flow resistance would be present.

In the unlikely event of a system leak the specified installation location will allow the leakage to run out onto the ground. Systems that are installed above cabinetry may leak into the cabinets, thus ruining the cabinets (if they are wood) and the cabinet contents.

BRUSHLESS MOTOR:

The converter-added HVAC system, as noted below, is to include a brushless motor.

FILTRATION SYSTEM:

A replaceable carbon filter shall be installed at the air intake area of the heat/AC system. Replacement of the filter shall be simple, and shall require very little time so as to assure that the vehicle will not have to be taken out of service. Replacement filters shall be readily available and shall be capable of being cut to the proper size to fit the vehicle.

AIR FLOW:

The installation of the heat/AC system shall include an air duct system to direct the airflow in such a way as to provide uniform temperature levels throughout the patient compartment. Air intake shall be from the floor level. The air shall be channeled through a duct that is aft of the heat/AC unit. The air shall exit through adjustable vents at the ceiling level above the attendant's seat. This design will allow for a circular flow of air throughout the patient compartment.

The specified design will separate the intake and exhaust ports. Separation of the intake and exhaust will decrease air turbulence and improve overall efficiency of the system. Systems that combine intakes and exhausts within the same grille work will not be acceptable.

RECEIVER/DRYER KIT, ALL FORD F-SERIES CHASSIS

Receiver/dryer kit #63 000 744 w/pressure switch shall be installed in the air conditioning system.

HEAT/AC SYSTEM DEFAULT SETTING:

The heat/AC system shall be programmed as follows:

Configure: DEFAULT HEAT/AC TO 70 DEGREE TEMPERATURE SETTING WHEN VEHICLE IS POWERED UP.

12V HEAT/AC SYSTEM:

The 12V heat/AC system shall be installed per the instructions listed above. The system provided shall include an evaporator, OEM compressor, and a top-mount condenser designed for use with the selected engine.

The condenser shall be recessed into the roof in a position to not interfere with the front wall lighting or the height of the vehicle. Underbody condenser design is not acceptable.

The external condenser shall be capable of producing a minimum of 100,000 btu’s of cooling capacity.

The condenser shall have a minimum of four flat mounted smart fans with a minimum flat surface area of 825 square inches. The smart condenser system shall activate fans one at a time based on system demand. The system shall reduce and optimize condenser AMP draw while reducing wear and tear on alternators and batteries. The 100,000 Btu’s of added capacity will also reduce high head load on compressors while ensuring best performance in high temp and high humidity climates. This will ultimately increase the life of the unit.

The condenser design shall offer protection in harsh climates from salt and other chemicals used to melt snow and ice. The unit shall have consistent performance due to reduced impact from mud, dirt, rocks, tar and other road debris. The unit shall have easy access for maintenance and service. The condenser mount shall be easily accessible and allow for easy cleaning.

VENTING SYSTEM:

Install a 400cfm exhaust and a static intake vent. Each vent cover is to the 9.5" square and is to feature a polished finish.

CAB CONSOLE AND COMMUNICATIONS:

The vehicle communications and console features are designated below:

ANTENNA COAX #1:

An RG 58U coax shall be installed. A removable access plate in the patient area ceiling shall be provided for access to the exterior termination point located on the module body roof. Under no circumstances shall the vehicle design necessitate disassembly of the interior finish work to access the coax termination point. The coax shall terminate at the following locations:

Exterior Termination: FRONT CENTER OF MODULE ROOF.
Interior Termination: TO BE DETERMINED.

ANTENNA COAX #2:

A second RG 58U coax shall be installed. A removable access plate in the patient area ceiling shall be provided for access to the exterior termination point located on the module body roof. Under no circumstances shall the vehicle design necessitate disassembly of the interior finish work to access the coax termination point. The coax shall terminate at the following locations:

Exterior Termination: SPACED EVENLY ON MODULE ROOF.
Interior Termination: TO BE DETERMINED.

ANTENNA COAX #3:

A third RG 58U coax shall be installed. A removable access plate in the patient area ceiling shall be provided for access to the exterior termination point located on the module body roof. Under no circumstances shall the vehicle design necessitate disassembly of the interior finish work to access the coax termination point. The coax shall terminate at the following locations:

Exterior Termination: SPACED EVENLY ON MODULE ROOF.
Interior Termination: TO BE DETERMINED.

ANTENNA COAX #4:

A fourth RG 58U coax shall be installed. A removable access plate in the patient area ceiling shall be provided for access to the exterior termination point located on the module body roof. Under no circumstances shall the vehicle design necessitate disassembly of the interior finish work to access the coax termination point. The coax shall terminate at the following locations:

Exterior Termination: SPACED EVENLY ON MODULE ROOF.
Interior Termination: TO BE DETERMINED.

ANTENNA COAX #5:

A fifth RG 58U coax shall be installed. A removable access plate in the patient area ceiling shall be provided for access to the exterior termination point located on the module body roof. Under no circumstances shall the vehicle design necessitate disassembly of the interior finish work to access the coax termination point. The coax shall terminate at the following locations:

Exterior Termination: REAR CENTER OF MODULE ROOF.
Interior Termination: TO BE DETERMINED.

NMO ANTENNA BASE:

The ambulance manufacturer shall provide and install a 3/8" NMO antenna mount. The mount shall be located per the information listed below and shall utilize coax cable(s) as specified in antenna coax options noted above.

Quantity: (5)
Locate: IN CONJUNCTION WITH ALL COAX LOCATIONS.

RADIO PULL WIRE:

A pull wire shall be installed to aid radio cable installation and prevent removal of interior panels once the vehicle has been completed.

Location: BEHIND DRIVER'S SEAT.
Terminate: BEHIND INHALATION PANEL.

RADIO HEAD PANEL:

A blank radio head panel shall be installed per the information provided below. This panel shall serve as the location for the future installation of a flush mounted radio head. The panel shall be removable and shall expose another opening that will allow for the radio head and the mounting brackets.

Quantity: (1)
Locate: FORWARD PORTION OF INHALATION PANEL.

CAB CONSOLE:

A console shall be installed in the cab. The console shall be installed at floor level and shall allow space for siren and radio head installation. The console shall be color coordinated with the cab interior. The top of the console shall be on a slant and shall house the recessed emergency control panel and integral digital display. Under no circumstances shall the console interfere with the OEM vehicle controls or gauges, nor shall the control panel be installed in such a manner as to interfere with either the OEM vehicle controls, gauges, or the driver's line of vision.

CONSOLE EXTENSION:

An aluminum console extension shall be fabricated and installed in the vehicle cab. The extension shall attach to the front console and shall include a location to mount siren and/or radio heads, as well as three slots for storage of map books and binders. The console extension shall be covered in black Scorpion material to compliment the interior cab color.

RADIO POWER/GROUND:

The vehicle manufacturer shall install heavy gauge cable B positive and ground for radio power. Termination is to be to insulated studs.

Locate: BEHIND DRIVER'S SEAT (OR LOCATION SPECIFIED BY END-USER)
Configure: TO BE DETERMINED.

MAP BOOK HOLDER ON REAR CAB WALL:

Provide and install a (3) slot aluminum angled map book holder on the chassis bulkhead below the pass-through window and between the seats. Holder to be black Scorpion coated.

Size: APPROXIMATELY 17"H X 14"W X 5.5"D.

OXYGEN AND SUCTION SYSTEMS:

Reliability, safety, and ease of operation are essential characteristics of the onboard oxygen and suction systems. System design must meet the following minimum guidelines. Bidders are asked to respond to each section appropriately per the bid requirements and to explain any variations to these requirements.

SWITCHING FOR OXYGEN AND SUCTION:

The rear switch panel shall contain two switches labeled "OXYGEN" and "VACUUM". Each of these switches shall electrically activate those respective systems. That activation shall be instantaneous. Systems that are not instantaneously responsive to their activation will not be considered.

SYSTEM DESIGN:

A single piece manifold assembly shall serve as the basis for the oxygen delivery system. The manifold assembly shall incorporate ports for installation of O2 lines to all specified outlets, an electrically activated oxygen delivery solenoid, and a manual bypass valve. The assembly shall be installed behind the inhalation panel and shall be easily accessible.

ELECTRICAL OXYGEN ACTIVATION:

The switch, located on the rear control panel and labeled "OXYGEN", shall activate the solenoid. This design will allow for the instantaneous flow of oxygen while eliminating the need to manually turn a valve to initiate oxygen flow.

MANUAL BYPASS:

The oxygen solenoid shall be equipped with a manual bypass valve. Located behind the inhalation panel, the valve shall be easily accessible so that, in the unlikely event of an electrical failure, administration of oxygen may continue.

AMBULANCE SPECIFICATIONS

SUBURBAN PURCHASING COOPERATIVE (SPC)
1600 E. GOLF ROAD, SUITE #0700
DES PLAINES, IL 60016

SYSTEM REGULATION:

The patient area shall be free of high pressure oxygen lines. To accomplish this the vehicle converter shall install a KKK approved regulator at the oxygen cylinder. The regulator shall include an integral dial type gauge to monitor the cylinder contents. A single low pressure line shall be installed from the regulator to the O2 manifold assembly. This method shall insure that all high pressure is maintained in an exterior compartment away from the interior patient area.

OXYGEN LINES:

The O2 line connecting the regulator to the manifold assembly shall be rated at 200 psi working pressure and 1,250 psi burst pressure. The line shall be UL approved. There shall be NO connections installed in the line between the regulator and manifold assembly as these create a possibility for leakage. All connections shall be DISS style and shall be specific to the gas being supplied.

LINE PROTECTION:

The O2 line shall be protected from crimping through the installation of a flexible spring guard on the portion of the line in the cylinder storage compartment.

SYSTEM MONITORING:

The condition of the oxygen system shall be continually monitored and reported to the vehicle operators through the vehicle's onboard electrical system. Readouts containing the information listed below shall be available primarily at the patient area control console. The secondary location for availability of this information shall be the cab console. The information available shall include the following:

-Cylinder Pressure
-Line Pressure

In addition, this system shall be designed to offer a warning, both audible and visual, if the condition of the oxygen system falls outside of the following pre-programmed parameters:

-Low Cylinder Pressure (500 psi or below)
-Low Line Pressure (40 psi or below)
-High Line Pressure (75 psi or above)

These oxygen system warnings shall immediately notify the personnel of a problem, again, via a readout and audible alarm. The system shall require the personnel to acknowledge receipt of the information.

PRELIMINARY SYSTEM TESTING:

The oxygen system shall be tested prior to installation in the vehicle. This test shall be performed by the vehicle manufacturer and shall subject the system to three times (3X) the working pressure. This test shall be conducted for a minimum of four (4) hours.

FINAL SYSTEM TESTING:

The completed system shall be tested again once it is installed in the vehicle. This test shall be performed at working pressure for a minimum of four (4) hours. After the system has passed the inspection process it shall be capped and tagged per Federal KKK specifications.

ADDITIONAL OXYGEN AND VACUUM SUPPLIES:

The oxygen and suction systems shall be complete upon delivery with the exception of the O2 cylinder. The cylinder shall be supplied and installed by the purchaser after delivery of the vehicle has taken place.

OXYGEN BOTTLE MOUNT, VERTICAL TRACK FOR QR-MV:

Vertical track for mounting of a QR-MV O2 bottle mount shall be welded on the back wall of the compartment in the right hand corner. The O2 bottle mount is adjustable for "M" or "H" size tanks.

ZICO QR-MV CYLINDER BRACKET:

A Zico QR-MV oxygen cylinder bracket shall be installed in the main O2 compartment.

Locate: STANDARD LOCATION - RIGHT REAR CORNER OF COMPARTMENT D1.
Tank Size: "M"

ACCESS TO CYLINDER VALVE FROM PATIENT AREA:

A clear Lexan door with a Southco flush pull ring latch shall be provided in the patient area wall for access to the oxygen cylinder valve. The door shall be hinged so that it swings into the patient care area of the module. The opening shall be trimmed with anodized aluminum edging.

OXYGEN OUTLETS:

Two oxygen outlets shall be installed in the rear inhalation panel unless otherwise noted below.

ADDITIONAL OXYGEN OUTLETS:

Additional oxygen outlets shall be installed as noted below.

Quantity: (2)
Locate: (1) ABOVE HEAD OF COT IN CENTER POSITION.
(1) ON CURBSIDE WALL ABOVE HEAD OF BENCH.

OHIO MEDICAL OXYGEN AND SUCTION OUTLETS:

The oxygen and suction outlets installed in the vehicle shall be Ohio Medical Quick Connect style outlets.

CYLINDER WRENCH:

A cylinder wrench shall be installed inside the oxygen compartment. The wrench shall be installed in such a way as it will not move or rattle. The wrench shall be chained to the compartment so that it cannot be removed, however, the chain must not interfere with the operation of the wrench.

Locate: ON RIGHT HAND WALL.

PRIMARY VACUUM OUTLET:

A single vacuum panel shall be installed in the inhalation area. The outlet shall be of the same style as those of the oxygen system and shall be connected to the onboard vacuum pump.

SSCOR ASPIRATOR:

The manufacturer shall furnish and install an SSCOR suction system. The system shall include a #22000 wall-mounted regulator, and a #23002 canister holder. The aspirator shall be accessible for use from the inhalation area and plumbed to the pump described below.

VACUUM PUMP:

The aspirator system shall be operated through a CFP #107CDC20 12V vacuum pump that is located inside an exterior compartment. The pump shall be activated by a switch on the inhalation area electrical control panel.

MISCELLANEOUS EQUIPMENT AND/OR SERVICES:

The following equipment and/or services shall be provided and/or installed by Foster Coach Sales Inc.

1) FACTORY INSPECTION TRIPS FOR (2) DEPARTMENT PERSONNEL TO OCCUR PRIOR TO PAINTING AND UPON COMPLETION.
2) RADIO INSTALLATION ALLOWANCE = $1000.00
3) INSTALL (2) CAST PRODUCTS #OA1101-D-1 PORTABLE OXYGEN CYLINDER BRACKETS. LOCATION TO BE DETERMINED.
4) STRYKER POWER LOAD SYSTEM WITH 7-YEAR EXTENDED WARRANTY.
5) TWO-TONE/CUSTOM PAINT SCHEME ALLOWANCE = $3,000.00*
   *TO BE CREDITED IF NOT REQUIRED.
6) ADDITIONAL STRIPING, PAINT, AND/OR LETTERING ALLOWANCE = $7,500.00*
   *TO BE CREDITED IN FULL IF NOT REQUIRED, OR APPROPRIATE CREDIT GIVEN IF A PORTION OF THE ALLOWANCE IS USED.
7) LOOSE EQUIPMENT ALLOWANCE = $5,000.00*
   *TO BE CREDITED IN FULL IF NOT REQUIRED, OR APPROPRIATE CREDIT GIVEN IF A PORTION OF THE ALLOWANCE IS USED.
8) PROVIDE AND INSTALL A CROSSFIRE TIRE PRESSURE EQUALIZATION SYSTEM ON DUAL REAR TIRES**
   NOTE: CUSTOMER MUST PROVIDE DESIRED PSI RATING.
   **THE USE OF THE FORD OEM LUG/HUB COVERS ELIMINATES THE ABILITY TO MOUNT THIS SYSTEM.
9) PERFORMANCE BOND.
10) ADDITIONAL COPIES OF VEHICLE OPERATION MANUALS, MAINTENANCE MANUALS, AND CHASSIS MANUALS (HELMS). INCLUDES SERVICE INFORMATION ON CD-ROM.